This is a list of all corrections made to *Computers & Typesetting* since the publication of the final printed versions of those books. Corrections made to the softcover version of *The TEXbook* are the same as corrections to Volume A. Corrections to the softcover version of *The METAFONTbook* are the same as corrections to Volume C. Changes to the mini-indexes and master indexes of Volumes B, D, and E are not shown here unless they are not obviously derivable from what has been shown.

Page A31, line 8 (3/6/95)

TEX begins its error messages with '`!`', and it shows what it was reading at the

---

Page A46, line 8 (1/22/95)

---

out for the occasional times when the adjacent characters `aa`, `ae`, and `o/` should not be

---

Page A331, bottom two lines (6/25/93)

---

if you know that the enclosing box is sufficiently small; and `\leaders\vrule\vfill` works fine in vertical mode.

Page A354, lines 19–22 (3/5/95)

```
\def\sett@b{\ifx\next\+\def\nxt{\afterassignment\s@tt@b\let\nxt}%
  \else\let\nxt=\s@tcols\fi
  \let\next=\relax \nxt} % turn off \outerness
\def\s@tt@b{\let\nxt=\relax \us@false\m@ketabbox}
```

Page A356, lines 13–20 from the bottom (3/5/95)

```
\def\oalign#1{\leavevmode\vtop{\baselineskip0pt \lineskip.25ex
  \ialign{##\crcr#1\crcr}}} \def\o@lign{\lineskiplimit=0pt \oalign}
\def\ooalign{\lineskiplimit=-\maxdimen \oalign} % chars over each other
\def\sh@ft#1{\dimen0=.00#1ex \multiply\dimen0 by\fontdimen1\font
  \kern-.0156\dimen0} % compensate for slant in lowered accents
\def\d#1{{\o@lign{\relax#1\crcr\hidewidth\sh@ft{10}.\hidewidth}}}
\def\b#1{{\o@lign{\relax#1\crcr\hidewidth\sh@ft{29}%
    \vbox to.2ex{\hbox{\char'26}\vss}\hidewidth}}}
```

Page A357, lines 7–12 (3/7/95)

```
\def\rightarrowfill{$\m@th \smash- \mkern-6mu
  \cleaders\hbox{$\mkern-2mu \smash- \mkern-2mu$}\hfill
  \mkern-6mu \mathord\rightarrow$}
\def\leftarrowfill{$\m@th \mathord\leftarrow \mkern-6mu
  \cleaders\hbox{$\mkern-2mu \smash- \mkern-2mu$}\hfill
  \mkern-6mu \smash-$}
```

Page A357, lines 16–20 (6/25/93)

```
  \setbox0=\hbox{$\braceld$}%
  \bracelu\leaders\vrule height\ht0 depth0pt\hfill\bracerd
  \braceld\leaders\vrule height\ht0 depth0pt\hfill\braceru$}
\def\downbracefill{$\m@th
  \setbox0=\hbox{$\braceld$}%
  \braceld\leaders\vrule height\ht0 depth0pt\hfill\braceru
  \bracelu\leaders\vrule height\ht0 depth0pt\hfill\bracerd$}
```

[Also delete lines 21 and 22, as the usage is no longer restricted.]

Page A359, line 25 (3/5/95)

```
\def\skew#1#2#3{{\muskip0=#1mu \mkern.5\muskip0
    #2{\mkern-.5\muskip0{#3}\mkern.5\muskip0}\mkern-.5\muskip0}{}}
```

Page A360, line 5 from the bottom (3/5/95)

```
\def\@vereq#1#2{\lower.5pt\vbox{\lineskiplimit\maxdimen \lineskip-.5pt
```

Page A361, lines 19 and 20 (3/5/95)

```
\def\bmod{\nonscript\mskip-\medmuskip \mkern5mu
  \mathbin{\rm mod} \penalty900 \mkern5mu \nonscript\mskip-\medmuskip}
```

Page A362, lines 14–18 (3/5/95)

```
  \everycr{\noalign{\ifdt@p \global\dt@pfalse \ifdim\prevdepth>-1000pt
      \vskip-\lineskiplimit \vskip\normallineskiplimit \fi
      \else \penalty\interdisplaylinepenalty \fi}}
\def\@lign{\tabskip=0pt\everycr={}} % restore inside \displ@y
\def\displaylines#1{\displ@y \tabskip=0pt
```

Page A363, lines 8–9 from the bottom (12/8/89)

```
  \if@mid \dimen@=\ht0 \advance\dimen@ by\dp\z@ \advance\dimen@ by12\p@
    \advance\dimen@ by\pagetotal \advance\dimen@ by-\pageshrink
```

Page A364, line 5 from the bottom (3/4/95)

```
\def\fmtname{plain}
\def\fmtversion{3.14159} % identifies the current format
```

Page A374, line 3 (3/7/95)

```
        \begingroup\aftergroup\def\aftergroup\asts\aftergroup{
```

Page A451, line 16 (8/8/93)

But when plain TEX is tried on the name of a famous Welsh village,

Page A462, right column (3/5/95)

`\cong` (≅), 151, 360, 436.

Page A463, right column (6/25/93)

direct sum, *see* `\oplus`.

Page A464, left column (6/25/93)

`\downbracefill` (⏟), 225–226, 357.

Page B2, line −10 (3/8/95)

define *banner* ≡ ´This␣is␣TeX,␣Version␣3.14159´ { printed when TEX starts }

Page B221, line 9 (3/4/95)

define *non_address* = 0 { a spurious *bchar_label* }

Page B221, line 17 (3/4/95)

font_params: **array**[*internal_font_number*] **of** *font_index*; { how many font parameters are present }

Page B256, insert new line 12 before the bottom (3/7/95)

glue_temp: *real*; { glue value before rounding }

Page B258, line 11 before the bottom becomes four lines (3/7/95)

625. **define** *vet_glue*(#) ≡ *glue_temp* ← #;
if *glue_temp* > *float_constant*(1000000000) **then** *glue_temp* ← *float_constant*(1000000000)
else if *glue_temp* < −*float_constant*(1000000000) **then** *glue_temp* ← −*float_constant*(1000000000)
⟨ Move right or output leaders 625 ⟩ ≡

Page B258, lines 3–6 from the bottom (3/7/95)

begin *vet_glue*(*float*(*glue_set*(*this_box*)) ∗ *stretch*(*g*));
rule_wd ← *rule_wd* + *round*(*glue_temp*);
end;
end
else if *shrink_order*(*g*) = *g_order* **then**
begin *vet_glue*(*float*(*glue_set*(*this_box*)) ∗ *shrink*(*g*));
rule_wd ← *rule_wd* − *round*(*glue_temp*);

Page B260, line 13 from the bottom (6/26/93)

doing_leaders ← *outer_doing_leaders*; *dvi_v* ← *save_v*; *dvi_h* ← *save_h*; *cur_v* ← *base_line*;

Page B261, insert new line after line 7 (3/7/95)

glue_temp: *real*; { glue value before rounding }

Page B262, lines 3–6 from the bottom (3/7/95)

```
      begin vet_glue(float(glue_set(this_box)) * stretch(g));
      rule_ht ← rule_ht + round(glue_temp);
      end;
    end
  else if shrink_order(g) = g_order then
    begin vet_glue(float(glue_set(this_box)) * shrink(g));
    rule_ht ← rule_ht − round(glue_temp);
```

Page B264, line 22 (6/26/93)

```
doing_leaders ← outer_doing_leaders;  dvi_v ← save_v;  dvi_h ← save_h;  cur_h ← left_edge;
```

Page B297, line 11 (3/7/95)

```
width(p) ← mu_mult(width(p));  subtype(p) ← explicit;
```

Page B356, line −5 (3/4/95)

hang_after = 1, and *hang_indent* = 0. Note that if *hang_indent* = 0, the value of *hang_after* is

Page B388, bottom line (3/4/95)

```
if bchar_label[hf] ≠ non_address then   { put left boundary at beginning of new line }
```

Page B503, line 12 (3/4/95)

of the following procedure. (Exception: The tabskip glue isn't trapped while preambles are being scanned.)

Page B529, line 12 (3/4/95)

```
undump(0)(fmem_ptr − 1)(bchar_label[k]);
undump(min_quarterword)(non_char)(font_bchar[k]);
```

Page B534, insert new material between lines −16 and −15 (3/20/95)

```
while input_ptr > 0 do
  if state = token_list then end_token_list else end_file_reading;
```

Page B534, line −2 (3/20/95)

```
temp_ptr ← cond_ptr;  cond_ptr ← link(cond_ptr);  free_node(temp_ptr, if_node_size);
```

Page B535, line 9 (3/20/95)

```
  begin init for c ← top_mark_code to split_bot_mark_code do
      if cur_mark[c] ≠ null then delete_token_ref(cur_mark[c]);
    store_fmt_file;  return;  tini
```

Page C94, line −11 (3/4/95)

put are assumed to have square pixels. But if, for example, the **mode_def** sets

Page C107, line 15 (3/4/95)

labels$(1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b,$ **range** 1 **thru** 36); **endchar.**

Page C129, lines 12–16 (3/6/95)

⟨path tertiary⟩ ⟶ ⟨path secondary⟩ | ⟨pair tertiary⟩
⟨path expression⟩ ⟶ ⟨path subexpression⟩
| ⟨path subexpression⟩⟨direction specifier⟩
| ⟨path subexpression⟩⟨path join⟩ `cycle`
⟨path subexpression⟩ ⟶ ⟨path tertiary⟩

Page C134, line 8 (3/4/95)

of p; if $t \le 0$, precontrol t of p is z_0. In particular, if t is an integer, postcontrol t of p

Page C143, top two lines (3/4/95)

In order to have some transform variables to work with, it's necessary to 'hide' some declarations and commands before giving the next `expr`s:

Page C206, minor changes to lines −19 to −5 (3/4/95)

```
Path at line 15, before subdivision into octants:
(1.53745,9.05345)..controls (1.53745,4.00511) and (5.75409,-0.00049)
 ..(10.85147,-0.00049)..controls (16.2217,-0.00049) and (20.46255,4.51297)
 ..(20.46255,9.94655)..controls (20.46255,14.99713) and (16.23842,19.00049)
 ..(11.13652,19.00049)..controls (5.77066,19.00049) and (1.53745,14.48491)
 ..cycle
Cycle spec at line 15, after subdivision:
(1.53745,9.05345) % beginning in octant 'SSE'
   ..controls (1.53745,6.58786) and (2.54324,4.371)
 ..(4.16621,2.74803) % segment 0
% entering octant 'ESE'
   ..controls (5.8663,1.04794) and (8.24362,-0.00049)
 ..(10.85147,-0.00049) % segment 0
% entering octant 'ENE'
```

... and so on; there are lots more numbers! What does this all mean? Well, the first segment of the curve, from $(1.53745, 9.05345)$ to $(10.85147, -0.00049)$, has been

Page C207, minor changes to lines 1–23 (3/4/95)

```
Cycle spec at line 15, after subdivision and autorounding:
(2,9.05348) % beginning in octant 'SSE'
   ..controls (2,6.50526) and (3.02194,4.22272)
 ..(4.6577,2.58696) % segment 0
% entering octant 'ESE'
   ..controls (6.2624,0.98225) and (8.45786,0)
 ..(10.85873,0) % segment 0
% entering octant 'ENE'
```

Point $(1.53745, 9.05345)$, where there was a vertical tangent, has been rounded to $(2, 9.05348)$; point $(10.85147, -.00049)$, where there was a horizontal tangent, has been rounded to $(10.85873, 0)$; the intermediate control points have been adjusted accordingly. (Rounding of x coordinates has been done separately from y coordinates.) Finally, with "*autorounding*" = 2, additional adjustments are made so that the 45° transition point will occur at what METAFONT thinks is a good spot:

```
Cycle spec at line 15, after subdivision and double autorounding:
(2,9.05348) % beginning in octant 'SSE'
   ..controls (2,6.6761) and (3.07103,4.42897)
 ..(4.78537,2.71463) % segment 0
% entering octant 'ESE'
   ..controls (6.46927,1.03073) and (8.62749,0)
 ..(10.85873,0) % segment 0
% entering octant 'ENE'
```

(Notice that $4.78537 + 2.71463 = 7.50000$; when the slope is -1 at a transition point

Page C213, lines 25–26 (3/6/95)

⟨path tertiary⟩ ⟶ ⟨path secondary⟩ | ⟨pair tertiary⟩
⟨path subexpression⟩ ⟶ ⟨path tertiary⟩

Page C257, large display on line 5 (3/4/95)

$$\left\{\begin{array}{c}\texttt{boolean}\\ \texttt{numeric}\\ \texttt{pair}\\ \texttt{path}\\ \texttt{pen}\\ \texttt{picture}\\ \texttt{string}\\ \texttt{transform}\end{array}\right\}\langle\text{expression}\rangle;\quad\left\{\begin{array}{c}\langle\text{boolean}\rangle\\ \langle\text{numeric}\rangle\\ \langle\text{pair}\rangle\\ \langle\text{string}\rangle\\ \langle\text{transform}\rangle\end{array}\right\}\left\{\begin{array}{c}\texttt{<}\\ \texttt{<=}\\ \texttt{=}\\ \texttt{<>}\\ \texttt{>=}\\ \texttt{>}\end{array}\right\}\left\{\begin{array}{c}\langle\text{boolean}\rangle\\ \langle\text{numeric}\rangle\\ \langle\text{pair}\rangle\\ \langle\text{string}\rangle\\ \langle\text{transform}\rangle\end{array}\right\};$$

Page C346, and throughout the index (3/7/95)

(Many index entries for rules of syntax in chapters 25–26 should have been underlined)

Page C355, right column (3/7/95)

`rt`, *23*, *77*, 80, *103*, 147, 151, 273.

Page D2, line −17 (3/8/95)

define *banner* ≡ ´`This␣is␣METAFONT,␣Version␣2.718`´ { printed when METAFONT starts }

Page D138, line 14 from the bottom (3/6/95)

2′) Let $Z_k^{(j+1)} = \frac{1}{2}(Z_k^{(j)} + Z_{k+1}^{(j)})$, for $1 \le k \le n-j$, for $1 \le j < n$.

Page D190, D191, D194, D195 (3/8/95)

(METAFONT bug 560 introduced extensive changes to the code on these four pages)

Page D289, lines 9 and 10 (3/8/95)

p ← *dep_list*(*p*); *r* ← *inf_val*;
repeat if *value*(*info*(*p*)) ≥ *value*(*r*) **then**

Page D363, lines 10 and 11 (3/1/95)

begin if (*max_c*[*dependent*] **div** ´*10000* ≥ *max_c*[*proto_dependent*]) **then** *t* ← *dependent*

Page D518, insert new material between lines 7 and 8 (3/20/95)

while *input_ptr* > 0 **do**
if *token_state* **then** *end_token_list* **else** *end_file_reading*;
while *loop_ptr* ≠ *null* **do** *stop_iteration*;

Page D518, line 18 (3/20/95)

loop_ptr ← *cond_ptr*; *cond_ptr* ← *link*(*cond_ptr*); *free_node*(*loop_ptr*, *if_node_size*);

Page E95, line 8 from the bottom (3/6/95)

cmchar `"Extensible vertical arrow--extension module"`;

Page E97, line 8 from the bottom (3/6/95)

cmchar `"Extensible double vertical arrow--extension module"`;

Page E113, line 9 (3/6/95)

$x_5 = .5[x_4, x_6]$; $x_4 - x_6 = 1.2u$; *lft* x_{5r} = hround(.5*w* − .5*curve*);

Page E113, line 10 from the bottom (3/6/95)

$x_5 = .5[x_4, x_6]$; $x_4 - x_6 = 1.2u$; *lft* x_{5r} = hround(.5*w* − .5*max_size*);

Page E115, line 9 (3/6/95)

$x_5 = .5[x_4, x_6]$; $x_4 - x_6 = 1.2u$; *lft* $x_{5r} =$ hround$(.5w - .5curve)$;

Page E115, line 12 from the bottom (3/6/95)

$x_5 = .5[x_4, x_6]$; $x_4 - x_6 = 1.2u$; *lft* $x_{5r} =$ hround$(.5w - .5max_size)$;

Page E187, line 9 (3/6/95)

lft $x_{1l} =$ *lft* $x_{2l} =$ hround$(.5w - .5shaved_stem)$; *top* $y_1 = h$; *bot* $y_2 = 0$;

Page E189, line 8 (3/6/95)

lft $x_{1l} =$ *lft* $x_{2l} =$ hround$(.5w - .5shaved_stem)$; *top* $y_1 = h$; *bot* $y_2 = 0$;

Page E233, line 21 (3/6/95)

path p; {{**interim** *superness* := *more_super*; $p =$ *pulled_super_arc*$_l(3,4)$(*pull*)}};

Page E239, line 7 from the bottom (3/6/95)

lft $x_{6r} =$ hround u; $x_7 = 3u$; $x_8 = w - 3.5u$; *rt* $x_{9l} =$ hround$(w - u)$;

Page E291, line 18 (3/6/95)

$x_4 = 1/3[x_5, x_{3l}]$; $z_4 = z_5 +$ *whatever* $*$ $(15u, .1h)$;

Page E389, bottom two lines (3/6/95)

numeric $a\_, b\_, c\_$; $b\_ = b/y$; $c\_ = c/y$; $a\_ = a * a - b\_ * b\_$;
$(a * (c\_ +\!+ \text{sqrt}\, a\_) - b\_ * c\_)/a\_$ **enddef**;

Page E483, lines 12–14 from the bottom (3/6/95)

beginarithchar(oct `"004"`); **pickup** *fine.nib*; **pickup** *rule.nib*;
numeric *del*; *del* = *dot_size* − *currentbreadth*;
$x_3 - .5del =$ *good.x*$(.5w - .5del)$; *center_on*(x_3);
$y_3 + .5del =$ *good.y*$($*math_axis* + *math_spread*$[.5$*x_height*$, .6$*x_height*$] + .5del)$;

Page E491, line 3 from the bottom (3/6/95)

spread := 2ceiling(*spread*# $*$ *hppp* $/2) +$ *eps*; **enddef**;

Page E574, left column (3/6/95)