This is a list of all corrections made to Computers & Typesetting, Volumes A, B, C, and D, between 1 January 1991 and 15 March 1992. Corrections made to the softcover version of The \TeX\book are the same as corrections to Volume A. Corrections to the softcover version of The \metafontbook are the same as corrections to Volume C. Some of the corrections below have already been made in reprints of the books. Changes to Volume B refer to the fourth printing (1991), which differs markedly from earlier printings because it includes all the revisions for \TeX\mbox{3.0}. Changes to Volume D refer to the third printing (1991), which differs markedly from earlier printings because it includes all the revisions for \metafont\mbox{2.0}. Changes to the mini-indexes and master indexes of Volumes B and D are not shown here unless they are not obviously derivable from what has been shown. Dozens of changes, too many to list here, have been made to Volume E because of recent upgrades to the Computer Modern font source files. Those changes, which affect only the digitization at low resolution and the appearance of lowercase delta and some characters in the math symbols fonts (but not the \TFM\ files), are documented at the end of file \cm85\bug.

Page A96, lines 9–11 (9/18/91)
Some German words traditionally change their spelling when they are split between lines. For example, ‘backen’ becomes ‘bak-ken’ and ‘Bettuch’ becomes ‘Bett-tuch’. How can you instruct \TeX\ to produce such effects?

Page A178, line 17 (11/19/91)
If you say ‘\phantom{⟨subformula⟩}’ in any formula, plain \TeX\ will do its

Page A286, bottom two lines and continuing into A287 (11/21/91)
stands for zero or more \assignment\ commands other than \setbox. If the assignments are not followed by a \character\, where \character\ stands for any of the commands just discussed in the previous paragraph, \TeX\ treats \accent\ as if it were \char, except that the space factor is set to 1000. Otherwise the character that follows the assignment is accented by the character that corresponds to the \(8\)-bit number. (The purpose of the intervening assignments is to allow the accenter and accentee to be in different fonts.) If the accent must be moved up or down, it is put into an hbox that is raised or lowered. Then the accent is effectively superposed on the character by means of kerns, in such a way that the width of the accent does not influence the width of the resulting horizontal list. Finally, \TeX\ sets \spacefactor=1000.

Page A291, lines 6–8 (11/21/91)
‘\$’ may be followed by optional \assignment\ commands other than \setbox, after which ‘\$$’ must conclude the display. \TeX\ will insert the \above\align\skip and \below\align\skip glue before and after the result of the alignment.
explained in Appendix G. \TeX scans \langle one optional space\rangle after completing a displayed formula; this is usually the implicit space at the end of a line in the input file.

Page A311, bottom four lines (9/18/91)

12.7. 1000, except: 999 after O, B, S, D, and J; 1250 after the comma; 3000 after the exclamation point, the right-quote marks, and the periods. If a period had come just after the B (i.e., if the text had said ‘B. Sally’), the space factor after that period would have been 1000, not 3000.

Page A314, lines 16–18 from the bottom (1/10/92)

14.8. \back/en and \Be\ttt/uch, where the macros \ck/ and \ttt/ are defined by

\def\ck/\discretionary{k-}{k}{ck}
\def\ttt/\discretionary{-}{t}{tt}

Page A354, line 8 (9/18/91)

\def\multispan#1{\omit\mscount=#1\relax\loop\ifnum\mscount>1 \sp@n\repeat}

Page A356, line 11 from the bottom (9/23/91)

\else{\oaalign\unhbox0\crcr\hidewidth\char'30\hidewidth}\fi}

Page A358, line 8 from the bottom (9/18/91)

\mathchardef\mapstochar="3237 \def\mapsto{\mapstochar\rightarrow}

Page A359, line 13 (11/4/91)

\def\overrightarrow#1{\vbox{\m@th\ialign{##\crcr
Page A359, line 16 (11/4/91)

\def\overleftarrow#1{\vbox{\m@th\ialign{##\crcr
Page A359, line 19 (11/4/91)

\def\overbrace#1{\mathop{\vbox{\m@th\ialign{##\crcr
Page A359, line 22 (11/4/91)

\def\underbrace#1{\mathop{\vtop{\m@th\ialign{##\crcr
\phantom, \smash, \root, and other operations. (Actually \phantom and \smash are not perfect: They assume that the current style is uncramped.)
14. If the current item is an Ord atom, go directly to Rule 17 unless all of the following are true: The nucleus is a symbol; the subscript and superscript are both empty; the very next item in the math list is an atom of type Ord, Op, Bin, Rel, Open, Close, or Punct; and the nucleus of the next item is a symbol whose family is the same as the family in the present Ord atom. In such cases the present symbol is marked as a text symbol. If the font information shows a ligature between this symbol and the following one, using the specified family and the current size, then insert the ligature character and continue as specified by the font; in this process, two characters may collapse into a single Ord text symbol, and/or new Ord text characters may appear. If the font information shows a kern between the current symbol and the next, insert a kern item following the current atom. As soon as an Ord atom has been fully processed for ligatures and kerns, go to Rule 17.

are used to change the current style just as in the first pass, so that both passes have the same value of \( C \) when they work on any particular atom.

[Delete the entry for ‘\( \sigma_2 \)’; the entry for ‘\( \sigma_{17} \)’ moves down to the bottom of the left column.]

to parameters in arbitrary families: Rule 17 uses \fontdimen\ parameter 2 (space) to de-


suppressing, 93, 414, 424, 454.

\*setbox, 66–67, 77, 81, 120, 276, 279, 286, 291, 386–392.

\*define \texttt{banner} \equiv “This is \texttt{TeX}, \texttt{Version 3.141}” \{ printed when \TeX starts \}

must have an \texttt{xchr} equivalent in the local character set. (This restriction applies only to preloaded strings, not to those generated dynamically by the user.)
60. Control sequence names, file names, and strings constructed with \string might contain ASCII code values that can’t be printed using \printchar. Therefore we use slow_print for them:

```latex
\begin{verbatim}
else begin slow_print(format_ident); print_ln;
\end{verbatim}
```

Page B33, line 3

```latex
set_box_allowed: boolean; { is it safe to do a \setbox assignment? }
```

Page B33, new line to come after line 20

```latex
set_box_allowed ← true;
```
begin print nl("You want to edit file "); slow_print(input_stack[base_ptr].name_field);

arithmetic; see TUGboat 3,1 (March 1982), 10–27. (But the routines cited there must be modified to allow negative glue ratios.)

structures on a memory_word, which contains either a (signed) integer, possibly scaled, or a (signed) glue_ratio, or a small number of fields that are one half or one quarter of the size used

begin print_err("Bad_mathchar");
help2("A_mathchar_number_must_be_between_0_and_32767.")

if align_state < 1000000 then { unmatched '}' aborts the line }
begin repeat get_token; until cur_tok = 0;
align_state ← 1000000; goto done;
end;

begin slow_print(a); slow_print(n); slow_print(e);

begin wlog(banner); slow_print(format_ident); print("\n"); print_int(day); print_char("\n");

print_char("\n"); incr(open_parens); slow_print(name); update_terminal; state ← new_line;

print("\in_font", slow_print(font_name[f]); print_char("!"); end_diagnostic(false);

print("\Output_written_on."); slow_print(output_file_name);
print("\n"); print_int(total_pages); print("\page");

if f < 0 then
begin decr(n); f ← f + 200000;
end;
if \( f < 0 \) then
\[
\text{begin } \text{decr}(n); \quad f \leftarrow f + '200000; \\
\text{end;}
\]

Up to three passes might be made through the paragraph in an attempt to find at least one set of feasible breakpoints. On the first pass, we have threshold = pretolerance and second_pass =

863. The 'loop' in the following code is performed at most thrice per call of line_break, since

\[
\text{hyf}_b\text{char} \leftarrow \text{character}(s); \quad c \leftarrow \text{qo(hyf}_b\text{char});
\]

\[
\text{hb} \leftarrow s; \quad \text{incr}(hn); \quad \text{hu}[hn] \leftarrow c; \quad \text{hc}[hn] \leftarrow \text{lc}_\text{code}(c); \quad \text{hyf}_b\text{char} \leftarrow \text{non_char};
\]

\[
\text{else if } (\text{type}(s) = \text{kern_node}) \land (\text{subtype}(s) = \text{normal}) \quad \text{then } \text{hb} \leftarrow s \quad \text{else goto } \text{done3;}
\]

\[
j \leftarrow hn; \quad q \leftarrow \text{hig_ptr}(s); \quad \text{if } q > \text{null then } \text{hyf}_b\text{char} \leftarrow \text{character}(q);
\]

\[
\text{else if odd(subtype(s)) then } \text{hyf}_b\text{char} \leftarrow \text{font_bchar}[hf] \quad \text{else } \text{hyf}_b\text{char} \leftarrow \text{non_char;}
\]

\[
\text{if } \text{hn} < l_{hyf} + r_{hyf} \quad \text{then goto } \text{done1; \quad \{ } l_{hyf} \text{ and } r_{hyf} \text{ are always } \geq 1 \}
\]

\[
q \leftarrow \text{link(hb)}; \quad \text{link(hb)} \leftarrow \text{null}; \quad r \leftarrow \text{link(ha)}; \quad \text{link(ha)} \leftarrow \text{null}; \quad \text{bchar} \leftarrow \text{hyf}_b\text{char};
\]
Page B436, lines 9 and 10 (3/15/92)

\[ \text{cur}_r = \begin{cases} \text{character}(\text{lig}_\text{stack}), & \text{if } \text{lig}_\text{stack} > \text{null}; \\ \text{font}_\text{false} \text{char}[\text{cur}\_\text{font}], & \text{otherwise}; \end{cases} \]

except when \( \text{character}(\text{lig}_\text{stack}) = \text{font}_\text{false} \text{char}[\text{cur}\_\text{font}] \). Several additional global variables are needed.

Page B438, line 13 from the bottom (3/15/92)

\[ \text{cur}_q \leftarrow \text{tail}; \; \text{cur}_l \leftarrow \text{character}(\text{lig}\_\text{stack}); \]

Page B507, line 6 of section 1241 (1/11/92)

\begin{verbatim}
scan_optional_equality:
if set_box_allowed then scan_box(box_flag + n)
else begin print_err("Improper"); print_esc("setbox");
    help2("Sorry, \setbox is not allowed after a \halign in a display,"")
    ("or between a \accent and an accented character."); error;
end;
\end{verbatim}

Page B511, new line inserted after line 3 (1/24/92)

\[ \text{flushable}\_\text{string} \leftarrow \text{str}_\text{ptr} - 1; \]

Page B512, new line inserted after line 3 of section 1260 (1/24/92)

\[ \text{flushable}\_\text{string} \leftarrow \text{str}_\text{ptr} - 1; \]

Page B512, the former line 6 of section 1260 (1/24/92)

\begin{verbatim}
begin if cur_name = flushable\_string then
    begin flush_string; cur_name \leftarrow font_name[f]; end;
    if s > 0 then
\end{verbatim}

Page B512, line 10 from the bottom (9/19/91)

\[ \text{set_font}: \begin{array}{l}
\text{begin print("select\_font"); slow_print(font_name[chr\_code]);}
\end{array} \]

Page B514, line 9 (1/11/92)

\[ \text{set}\_\text{box}\_\text{allowed} \leftarrow \text{false}; \text{prefixed}\_\text{command}; \text{set}\_\text{box}\_\text{allowed} \leftarrow \text{true}; \]

Page B515, line 19 (9/19/91)

\[ \text{slow}\_\text{print}(s); \text{update}\_\text{terminal}; \]

Page B516, line 2 (9/19/91)

\[ \begin{array}{l}
\text{begin print\_err("""); slow\_print}(s); \end{array} \]
Page B531, lines 19 and 20 (9/19/91)

    print nl("Beginning_to_dump_on_file."); slow_print(w_make_name_string(fmt_file)); flush_string;
    print nl(""); slow_print(formatted_ident);

Page B533, line 29 (9/19/91)

    begin print nl("Transcript_written_on."); slow_print(log_name); print_char(".");

Page B538, line 13 (9/19/91)

    10: slow_print(n);

Page B577, left column (12/23/91)

    [Add 798 to the index entries for 'system dependencies'.]

Page C262, line 15 (3/26/91)

    string base_name, base_version; base_name="plain"; base_version="2.7";

Page C271, line 17 from the bottom (3/26/91)

    currentpen_path shifted (z.t_) withpen penspeck enddef;

Page C347, Brontë entry (1/29/91)

    [The accent was clobbered; her name should, of course, be Brontë. Fix the entries for Dürer, Möbius, and Stravinsky in the same way.]

Page C348, left column (1/11/92)

    compound statement, 155, 217.

Page C353, right column (1/11/92)

    *numeric, 55, 56, 65, 88.

Page C354, miscellaneous entries in both columns (1/11/92)

    *openwindow, 191–193, 220, 277, 312–313.
    *or, 65, 170, 210, 237, 288–289.
    *pair, 55, 56, 65.
    *path, 55, 56, 171.
    *pen, 55, 56, 65, 170.
    *picture, 55, 56, 114.

Page C356, right column (1/11/92)

    *string, 55, 56, 69.

Page C357, right column (1/11/92)

    *transform, 55, 56, 57, 141–143, 160, 266.
Then eq_type(h(x)) = tag_token and equiv(h(x)) = p, where p is a two-word value node with

errors. Our subroutines also obey the identity t[a,b] + t[b,a] = a + b.

define banner ≡ `This is METAFOFF, Version 2.71`  { printed when METAFOFF starts }

Page D190, new copy before bottom four lines

if x_coord(r) < x_coord(pp) then x_coord(r) ← x_coord(pp)
else if x_coord(r) > dest_x then x_coord(r) ← dest_x;
if left_x(r) > x_coord(r) then
    begin left_x(r) ← x Coord(r); if right_x(pp) > x Coord(r) then right_x(pp) ← x Coord(r); end;
if right_x(r) < x_coord(r) then
    begin right_x(r) ← x_coord(r); if left_x(qq) < x_coord(r) then left_x(qq) ← x_coord(r); end;

Page D191, new copy before bottom two lines of section 416

if x_coord(s) < x_coord(r) then x_coord(s) ← x_coord(r)
else if x_coord(s) > dest_x then x_coord(s) ← dest_x;
if left_x(s) > x_coord(s) then
    begin left_x(s) ← x_coord(s); if right_x(r) > x_coord(s) then right_x(r) ← x_coord(s); end;
if right_x(s) < x_coord(s) then
    begin right_x(s) ← x_coord(s); if left_x(qq) < x_coord(s) then left_x(qq) ← x_coord(s); end;

Page D194, lines 4 and 5

[Delete those two lines; I no longer believe that the assertion has been proved (although it might be true).]

Page D194, lines 7-13 of section 424

if y_coord(r) < y_coord(p) then y_coord(r) ← y_coord(p)
else if y_coord(r) > dest_y then y_coord(r) ← dest_y;
if x_coord(p) + y_coord(r) > dest_x + dest_y then y_coord(r) ← dest_x + dest_y - x_coord(p);
if left_y(r) > y_coord(r) then
    begin left_y(r) ← y_coord(r); if right_y(p) > y_coord(r) then right_y(p) ← y_coord(r); end;
if right_y(r) < y_coord(r) then
    begin right_y(r) ← y_coord(r); if left_y(qq) < y_coord(r) then left_y(qq) ← y_coord(r); end;

Page D194, lines 8-11 from the bottom

if right_y(r) < y_coord(r) then
    begin right_y(r) ← y_coord(r); if left_y(qq) < y_coord(r) then left_y(qq) ← y_coord(r); end;
Page D195, lines 3–9 of section 425 (1/24/92)

if \( y_{\text{coord}}(s) < y_{\text{coord}}(r) \) then \( y_{\text{coord}}(s) \leftarrow y_{\text{coord}}(r) \)
else if \( y_{\text{coord}}(s) > dest_y \) then \( y_{\text{coord}}(s) \leftarrow dest_y \);
if \( x_{\text{coord}}(r) + y_{\text{coord}}(s) > dest_x + dest_y \) then \( y_{\text{coord}}(s) \leftarrow dest_x + dest_y - x_{\text{coord}}(r) \);
if \( left_y(s) > y_{\text{coord}}(s) \) then
   begin \( left_y(s) \leftarrow y_{\text{coord}}(s) \);
   if \( right_y(r) > y_{\text{coord}}(s) \) then \( right_y(r) \leftarrow y_{\text{coord}}(s) \); end;
if \( right_y(s) < y_{\text{coord}}(s) \) then
   begin \( right_y(s) \leftarrow y_{\text{coord}}(s) \);
   if \( left_y(q) < y_{\text{coord}}(s) \) then \( left_y(q) \leftarrow y_{\text{coord}}(s) \); end;

Page D195, lines 3–7 from the bottom if section 425 (1/24/92)

if \( right_y(s) < y_{\text{coord}}(s) \) then
   begin \( right_y(s) \leftarrow y_{\text{coord}}(s) \);
   if \( left_y(q) < y_{\text{coord}}(s) \) then \( left_y(q) \leftarrow y_{\text{coord}}(s) \); end;

Page D289, lines 9 and 10 (11/1/91)

\( p \leftarrow \text{dep\_list}(p); \ r \leftarrow \text{inf\_val}; \)
\( \text{repeat if } \text{value}(\text{info}(p)) \geq \text{value}(r) \) then

Page D486, line 18 (11/1/91)

The \textit{label\_loc} and \textit{label\_char} arrays have been set up to record all the starting addresses; we have