### Hyphenation Exception Log

Below is a list of words that TEX fails to hyphenate properly. It last appeared in Volume 6, No. 3, on page 121. Everything listed there is repeated here.

The first column gives results from TEX's \showhyphens{...}; entries in the second column are suitable for inclusion in a \hyphenation{...} list.

In most instances, inflected forms are not shown for nouns and verbs; however, all forms should be specified in a **\hyphenation{...}** list if they might occur in your document.

academy al-ge-brais-che anal-yse anomaly anti-nomy(ies) ap-pendix asymp-totic at-mo-sphere ban-dleader Be-di-enung be-haviour bib-li-ographis-che bid-if-fer-en-tial bornolog-i-cal Brow-n-ian buz-zword cartwheel cholesteric database dat-a-p-ath de-mos dis-tribute Di-jk-stra dy-namis-che elec-trome-chan-i-cal elec-tromechanoa-cous-tic

En-glish equiv-ari-ant Eu-le-rian ex-traor-di-nary fermions flowchart funk-t-sional Gaus-sian ge-o-met-ric gnomon Greif-swald Grothendieck Grundlehren acad-e-my al-ge-brai-sche an-a-lyse anom-aly an-tin-o-my(ies) ap-pen-dix as-ymp-tot-ic at-mos-phere band-leader Be-die-nung be-hav-iour bib-li-o-gra-phi-sche bi-dif-fer-en-tial bor-no-log-i-cal Brown-ian buzz-word cart-wheel cho-les-teric data-base data-path demos dis-trib-ute Dijk-stra dy-na-mi-sche electro-mechan-i-cal electro-mechano-acoustic Eng-lish equi-vari-ant Euler-ian

ex-tra-or-di-nary

fermi-ons

flow-chart

Gauss-ian

gno-mon

geo-met-ric

Greifs-wald

Grothen-dieck

Grund-leh-ren

funk-tsional

Her-mi-tian hex-adec-i-mal holon-omy ho-mo-th-etic id-iosyn-crasy in-fras-truc-ture Japanese jeremi-ads Kadomt-sev Ko-rteweg Leg-en-dre Le-ices-ter Lip-s-chitz(ian) macroe-co-nomics manuscript marginal Marko-vian Mas-sachusetts met-a-lan-guage mi-croe-co-nomics mi-crofiche mis-ogamy mod-elling mo-noen-er-getic monopole monos-pline monos-trofic mul-ti-pli-ca-ble ne-ofields Noethe-rian none-mer-gency nonequiv-ari-ance noneu-clidean non-i-so-mor-phic nonpseu-do-com-pact non-s-mooth No-ord-wi-jk-er-hout parabolic parametrized paramil-i-tary phe-nomenon Poincare polyene poly-go-niza-tion porce-las-tic postam-ble Po-ten-tial-gle-ichung pream-ble pseu-dod-if-fer-en-tial

Hamil-to-nian

pseud-ofi-nite pseud-ofinitely pseud-o-forces Hamil-ton-ian Her-mit-ian hexa-dec-i-mal ho-lo-no-my ho-mo-thetic idio-syn-crasy in-fra-struc-ture Japan-ese je-re-mi-ads Kad-om-tsev Kor-te-weg Le-gendre Leices-ter Lip-schitz(-ian) macro-eco-nomics man-u-script mar-gin-al Mar-kov-ian Mass-a-chu-setts meta-lan-guage micro-eco-nomics mi-cro-fiche mi-sog-a-my mod-el-ling mono-en-er-getic mono-pole mono-spline mono-strofic mul-ti-plic-able neo-fields Noe-ther-ian non-emer-gency non-equi-vari-ance non-euclid-ean non-iso-mor-phic non-pseudo-com-pact non-smooth Noord-wijker-hout par-a-bol-ic pa-ram-e-trized para-mil-i-tary phe-nom-e-non Poin-care poly-ene polyg-on-i-za-tion poro-elas-tic post-am-ble Po-ten-tial-glei-chung pre-am-ble pseu-do-dif-fer-en-tial

pseu-do-fi-nite pseu-do-fi-nite-ly pseu-do-forces

pseu-do-word pseu-doword quadrat-ics qua-drat-ics qua-si-equiv-a-lence quasiequiv-a-lence quasi-hy-ponor-mal qua-si-hy-po-nor-mal quasir-ad-i-cal qua-si-rad-i-cal qua-si-resid-ual quasiresid-ual qua-si-smooth qua-sis-mooth qua-sis-ta-tion-ary qua-si-sta-tion-ary qua-si-tri-an-gu-lar qu-a-si-tri-an-gu-lar re-ar-range-ment re-arrange-ment Rie-mann-ian Rie-man-nian sched-ul-ing schedul-ing Schro-ding-er Schrodinger Schwarzschild Schwarz-schild semidef-i-nite semi-def-in-ite semi-ho-mo-thet-ic semi-ho-mo-th-etic ser-vo-mech-anism ser-vomech-a-nism setup set-up solenoid so-le-noid spher-oid spheroid sto-chas-tic stochas-tic Stokes-sche Stokess-che sub-scrib-er sub-scriber summable sum-ma-ble tech-ni-sche tech-nis-che ther-moe-las-tic ther-mo-elas-tic time-stamp times-tamp ver-all-ge-mein-erte ve-r-all-ge-mein-erte Ver-tei-lun-gen Verteilun-gen vspace vs-pace Wahrschein-lichkeit-s-the-o-rie Wahr-schein-lich-keits-the-o-rie wave-guide waveg-uide whitesided white-sided white-space whites-pace Yingy-ong Shuxue Jisuan Ying-yong Shu-xue Ji-suan

# Fonts

## Notes on Typeface Protection

Charles Bigelow Stanford University

## Preamble

The main question of typeface protection is: "Is there anything there worth protecting?" To that the answer must certainly be: "Yes." Typeface designs are a form of artistic and intellectual property." To understand this better, it is helpful to look at who designs type, and what the task requires.

## Who makes type designs?

Like other artistic forms, type is created by skilled artisans. They may be called type designers, lettering artists, punch-cutters, calligraphers, or related terms, depending on the milieu in which the designer works and the technology used for making the designs or for producing the type.

("Type designer" and "lettering artist" are self-explanatory terms. "Punch-cutter" refers to the traditional craft of cutting the master image of a typographic letter at the actual size on a blank of steel that is then used to make the matrix from which metal type is cast. Punchcutting is an obsolete though not quite extinct craft. Seeking a link to the tradition, modern makers of digital type sometimes use the anachronistic term "digital punch-cutter". "Calligrapher" means literally "one who makes beautiful marks". The particular marks are usually hand-written letters, though calligraphers may design type, and type designers may do calligraphy.)

It usually takes about seven years of study and practice to become a competent type designer. This seems to be true whether one has a Ph.D. in computer science, a high-school diploma, or no academic degree. The skill is acquired through study of the visual forms and practice in making them. As with geometry, there is no royal road.

The designing of a typeface can require several months to several years. A family of typefaces of four different styles, say roman, italic, bold roman, and bold italic, is a major investment of time and effort. Most type designers work as individuals. A few work in partnership (Times Roman<sup>(R)</sup>, Helvetica<sup>(R)</sup>, and Lucida<sup>(R)</sup> were all, in different ways, the result of design collaboration). In Japan, the large character sets required for a