plstmary: St. Mary's Road Font for Plain TEX
Version: 0.5c

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The plstmary package provides plain TeX support for the St. Mary's Road symbol font. After inputting the macro file `stmary.tex`, all the symbols in the tables below become defined. The two commands `\oast` and `\ocircle` require the AMS symbol font `msam`, so `stmary.tex` automatically inputs `amssym.tex`. (These symbols are the same as `\circledast` and `\circledcirc`, defined in `amssym.tex`. The point of defining them is to have matching '\o. . .' and '\varo. . .' pairs for all circles.)

All the command names are the same as those in the LaTeX package `stmaryrd.sty`. More details on the symbols and their usage may be found in the documentation of the LaTeX stmaryrd package.

Some command names defined in the `stmary.tex` overwrite command names in the `amssym.tex`. The original definitions are stored in alternative commands. The affected commands are `\bigtriangledown`, `\bigtriangleup` and `\boxdot`. The AMS versions are obtained with `\amsbigtriangledown`, `\amsbigtriangleup` and `\amsboxdot`.

The plstmary package allows minimal size changing. By default it produces symbols intended for ten point documents. It also supports eight, nine, eleven, and twelve point sizes. Use one of the following commands to change size:

  `\stmaryrdeightpoint`,   `\stmaryrdninepoint`,
  `\stmaryrdelevenpoint`, `\stmaryrdtwelvepoint`,
  `\stmaryrdtenpoint` (to restore the default if it has been changed).

These commands affect only the St. Mary Road symbols and, for convenience, the AMS fonts. They have no effect on the body text font nor on any other mathematical fonts. For changing the sizes of standard plain TeX fonts, you must either load a package for that purpose, of define your own macros.

In order to get actual error-free output from these commands, one needs to have the St. Mary Road fonts and the AMS fonts installed, but those are available in all the major free TeX distributions: TeX Live, MiKTeX and MacTeX.

Legal stuff

The St. Mary's Road metafont code is copyright ©1991-1994 by Jeremy Gibbons and Alan Jeffrey. The fonts in PS type1 format (i.e., `.afm` and `.pfb` files) are copyright ©1998 by Taco Hoekwater. All rights are reserved to the respective authors.

This plstmary distribution is placed in the public domain. Do with it as you wish.

While every effort has been made to make plstmary useful, it comes with no warranty, expressed or implied.

Acknowledgements

I am indebted to the creators of the fonts and of the stmaryrd LaTeX package. The file `stmary.tex` is largely a reduction to plain TeX macros and TeX primitives of the code in `stmaryrd.sty`.

Caveats

Some features of the LaTeX package have not been implemented in plstmary. For example, normally the symbol obtained with `\oplus` has thin strokes while `\varoplus` has thicker strokes. The LaTeX package can be loaded with the `heavycircles` option to reverse this for all the circled symbols. This is not implemented in plstmary. Also, the LaTeX package has the `only` option, allowing selected commands to be defined and no others. This is not implemented in plstmary.

Also, I have made the following corrections (or possibly mistakes). (1) In `stmaryrd.sty`, the commands `\lbag` and `\rbag` are defined as binary operations, but the documentation says they are delimiters. In `stmary.tex`, I have defined them as delimiters. (2) In `stmaryrd.sty`, the commands `\binampersand` and `\bindnasrepma` are defined as delimiters, but their names clearly imply that they are intended to be binary operations (and the stmaryrd package documentation does not list them among the delimiters). In

`stmary.tex`, I have defined them as binary operations. I have no idea if I have chosen the correct usages for these four commands, and I would be happy to change them back if someone would let me know.

Binary operations

\Yup	⅄	\Ydown	Y
\Yleft	≺	\Yright	≻
\binampersand	&	\bindnasrepma	⅋
\varcurlyvee	⋎	\varcurlywedge	⋏
\minuso	⊖	\baro	⌽
\sslash	⫽	\bbslash	⫻
\moo	⊻	\merge	⋀
\nplus	⊞	\boxbar	⊟
\boxdot	⊡	\amsboxdot	⊡
\boxslash	⊘	\boxbslash	⧅
\boxcircle	⊚	\boxbox	⊡
\boxempty	□	\boxast	⊛
\vartimes	⋋	\fatsemi	⨟
\fatslash	⫽	\fatbslash	⫻
\varbigcirc	◯	\leftslice	⊲
\rightslice	⊳	\varotimes	⊗
\oast	⊛	\varoast	⊛
\obar	⊖	\varobar	⊖
\obslash	⦸	\varobslash	⦸
\ocircle	⊚	\varocircle	⊚
\varoplus	⊕	\varominus	⊖
\olessthan	⧀	\varolessthan	⧀
\ogreaterthan	⧁	\varogreaterthan	⧁
\ovee	⊚	\varovee	⊚
\owedge	⊚	\varowedge	⊚
\varoslash	⊘	\varodot	⊙
\oblong	□	\talloblong	⫾
\interleave	⫴		

Relations

\inplus	⋳	\niplus	⋻
\subsetplus	⪿	\supsetplus	⫀
\subsetpluseq	⫁	\supsetpluseq	⫂
\shortuparrow	↑	\shortdownarrow	↓
\nnwarrow	↖	\nnearrow	↗
\sswarrow	↙	\ssearrow	↘
\curlywedgeuparrow	⋏	\curlywedgedownarrow	⋏
\curlyveedownarrow	⋎	\curlyveeuparrow	⋎
\trianghlelefteqslant	⊴	\trianglerighteqslant	⊵
\ntrianglelefteqslant	⋬	\ntrianglerighteqslant	⋭

Arrows

\leftrightarroweq	⇔	\shortrightarrow	→
\shortleftarrow	←	\rightarrowtriangle	⇾
\leftarrowtriangle	⇽	\leftrightarrowtriangle	⬌
\Mapsto	⇸	\Longmapsto	⟼
\mapsfrom	↤	\Mapsfrom	⇐
\longmapsfrom	⟻	\Longmapsfrom	⟽

The commands `\arrownot` and `\Arrownot` can be placed in front of horizontal arrows to negate them: `\arrownot\rightarrow` produces ↛ and `\Arrownot\Rightarrow` produces ⇏. For long arrows, there are `\longarrownot\longrightarrow`: ⟼̸ and `\Longarrownot\Longrightarrow`: ⟹̸.

Big operators

\bigtriangledown	▽	\bigtriangleup	△
\amsbigtriangledown	▽	\amsbigtriangleup	△
\bigcurlyvee	⋎	\bigcurlywedge	⋏
\bigsqcap	⊓	\bigbox	□
\bigparallel	‖	\biginterleave	⫴
\bignplus	⊞		

Delimiters

\lbag	⟅	\rbag	⟆
\Lbag	⟅	\Rbag	⟆
\llparenthesis	⦅	\rrparenthesis	⦆
\llfloor	⌊	\rrfloor	⌋
\llceil	⌈	\rrceil	⌉

Expandable delimiters

\llbracket	⟦	\rrbracket	⟧

Examples of expanded double brackets: $\llbracket a \rrbracket$ $\begin{bmatrix} a \\ b \end{bmatrix}$ $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$ $\begin{bmatrix} a \\ b \\ c \\ d \end{bmatrix}$ $\begin{bmatrix} a \\ b \\ c \\ d \\ e \end{bmatrix}$ $\begin{bmatrix} a \\ b \\ c \\ d \\ e \\ f \end{bmatrix}$

Miscellaneous

\lightning	↯	\varcopyright	©

Size changing

8pt: $\llbracket x \in a \rrbracket \, \Box \, b$. 9pt: $\llbracket x \in a \rrbracket \, \Box \, b$. 10pt: $\llbracket x \in a \rrbracket \, \Box \, b$. 11pt: $\llbracket x \in a \rrbracket \, \Box \, b$. 12pt: $\llbracket x \in a \rrbracket \, \Box \, b$.

Version history

0.5 — 2013/05/09   Autoloading AMS symbols. Size changing for AMS, saving AMS definitions.
0.4 — 2013/04/16   Corrected `\lbag`, `\Lbag`, `\binampersand` and `\bindnasrepma`
0.3 — 2013/03/28   Reorganized internal macros
0.2 — 2010/12/05   Typos corrected
0.1 — 2007/04/02   Initial version