File created: 1-Oct-91 14:10:29 **{PELE:MV:ENVOS}<LISPUSERS>MEDLEY>SFFONT.;2**

changes to: (VARS SFFONTCOMS)

previous date: 4-Feb-87 23:04:29 {PELE:MV:ENVOS}<LISPUSERS>MEDLEY>SFFONT.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

```
;;
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(RPAQQ SFFONTCOMS
       ((RECORDS SF.CHARACTER SF.CHARDESC SF.DERIVATIVE SF.FACE SF.FAMILY SF.FIDUCIAL SF.MADE-FROM SF.SPLINE
              SF.SPLINES SF.VERSION SF.WIDTH)
        (FNS READ.SPLINE.FONT SF.DERIVS.TO.BEZIER SF.PRINT SFDRAW SFDRAW.CLOSED.CURVE TEST VIEW.FONT.FILES
             \LOOKUPSPLINEFONT \SETSPLINEFONT ginit)
        (DECLARE%: EVAL@LOAD DONTCOPY (FILES (LOADCOMP)
                                      IRISSTREAM)
              (VARS TIMESROMANDFILES TRA TRB TRC TRFILES))
        (INITVARS (\SPLINEFONTSINCORE (LIST NIL)))
        (GLOBALVARS \SPLINEFONTSINCORE)
        (CONSTANTS (\CHARSEGMENTS.IRIS 10))))

(DECLARE%: EVAL@COMPILE

(RECORD SF.CHARACTER (CHARCODE))

[ASSOCRECORD SF.CHARDESC (FAMILY CHARACTER FACE WIDTH FIDUCIAL VERSION SPLINES)
       (ACCESSFNS (SF.WIDTH (FETCH WIDTH OF DATUM]

(RECORD SF.DERIVATIVE (XPRIME YPRIME XDPRIME YDPRIME XTPRIME YTPRIME))

(RECORD SF.FACE (WEIGHT SLOPE EXPANSION))

(RECORD SF.FAMILY (SFFAMILY))

(RECORD SF.FIDUCIAL (XFIDUCIAL YFIDUCIAL))

(RECORD SF.MADE-FROM (FILENAME XCHAR.ORIGIN YCHAR.ORIGIN XFIDUCIAL.ORIGIN YFIDUCIAL.ORIGIN))

(RECORD SF.SPLINE (%#OFKNOTS KNOTLIST WEIGHTLIST DERIVATIVELIST . OPTIONALSOLNMETHOD))

(RECORD SF.SPLINES (CLOSEDCURVELIST))

(RECORD SF.VERSION (VERSION DATE TIME))

(RECORD SF.WIDTH (XWIDTH YWIDTH))
)

(DEFINEQ
```

(READ.SPLINE.FONT

```
  [LAMBDA (FILES FAMILY CHARSET)                                    ; Edited  4-Feb-87 22:54 by gbn
```

;;; reads SF files and updates \SPLINEFONTSINCORE. \SPLINEFONTSINCORE looks like (((FAMILY1 CHARSET#) FONTARRAY1) ...)

;;; should learn about sd files

```
    (PROG (FONTARRAY FAM I CHAR)
          (PROG1 (RETURN (BIND INPUTSTREAM for F in (OR (LISTP FILES)
                                                        (LIST FILES))
                               collect (RESETLST
                                           (RESETSAVE NIL (LIST 'CLOSEF? INPUTSTREAM))
                                           (SETQ INPUTSTREAM (OPENSTREAM F 'INPUT))
                                           (SETQ CHAR (READ INPUTSTREAM FILERDTBL))
                                           [SETQ FAM (OR FAMILY (U-CASE (fetch SFFAMILY of (fetch FAMILY of CHAR]
                                                                ; the fontarray can already be here, since a single file need not
                                                                ; contain a whole character set.
                                           [if (NOT (SETQ FONTARRAY (\LOOKUPSPLINEFONT FAM CHARSET)))
                                               then (\SETSPLINEFONT FAM CHARSET (SETQ FONTARRAY (ARRAY (ADD1
                                                                                                       \MAXTHINCHAR
                                                                                                       ]
                                           (PROG1 (CONS FAM (bind C repeatwhile (NEQ 'STOP (SETQ CHAR (READ INPUTSTREAM
                                                                                                          FILERDTBL))
                                                                                )
                                                          collect (SETA FONTARRAY (SETQ C
                                                                                        (fetch CHARCODE
                                                                                           of (fetch CHARACTER
                                                                                                 of CHAR)))
                                                                                CHAR)
                                                                  (PRINTOUT PROMPTWINDOW (SETQ C (CHARACTER C)))
                                                                  C))
```

```
                                        (CLOSEF INPUTSTREAM)))])
```

(SF.DERIVS.TO.BEZIER

```
[LAMBDA (KNOT XOFFSET YOFFSET SCALE DERIVATIVES)                (* gbn " 1-Aug-84 05:51")
```

(* * Compute the Bezier control points from the derivative coefficients.
Stolen from <cedar5.1>graphics>cgcubicimpl.mesa Returns an array of 4 xyz points suitable for handing to the iris draw curve function (IRIS.CURVE format))

```
    (PROG [[BEZ (create BEZIER
                        B0X _ (PLUS XOFFSET (TIMES SCALE (fetch XCOORD of KNOT)))
                        B0Y _ (PLUS YOFFSET (TIMES SCALE (fetch YCOORD of KNOT]
                 (DERIVS (for I from 1 to (LENGTH DERIVATIVES) collect (TIMES SCALE (QUOTIENT (CAR (NTH DERIVATIVES I))
                                                                                              (ELT \FACT.IRIS
                                                                                                   (IQUOTIENT (ADD1 I)
                                                                                                              2]
           (replace B1X of BEZ with (PLUS (fetch B0X of BEZ)
                                          (QUOTIENT (fetch XPRIME of DERIVS)
                                                    3)))
           (replace B1Y of BEZ with (PLUS (fetch B0Y of BEZ)
                                          (QUOTIENT (fetch YPRIME of DERIVS)
                                                    3)))
           (replace B2X of BEZ with (PLUS (fetch B1X of BEZ)
                                          (QUOTIENT (PLUS (fetch XPRIME of DERIVS)
                                                          (fetch XDPRIME of DERIVS))
                                                    3)))
           (replace B2Y of BEZ with (PLUS (fetch B1Y of BEZ)
                                          (QUOTIENT (PLUS (fetch YPRIME of DERIVS)
                                                          (fetch YDPRIME of DERIVS))
                                                    3)))
           (replace B3X of BEZ with (PLUS (fetch B0X of BEZ)
                                          (fetch XPRIME of DERIVS)
                                          (fetch XDPRIME of DERIVS)
                                          (fetch XTPRIME of DERIVS)))
           (replace B3Y of BEZ with (PLUS (fetch B0Y of BEZ)
                                          (fetch YPRIME of DERIVS)
                                          (fetch YDPRIME of DERIVS)
                                          (fetch YTPRIME of DERIVS)))
           (RETURN BEZ])
```

(SF.PRINT

```
[LAMBDA (STRING FONTFAMILY SCALE STREAM)                        ; Edited 16-Jan-87 16:22 by gbn
  (DECLARE%: (GLOBALVARS \SPLINEFONTSINCORE))
```

;;; Uses SFDRAW to draw a single char at a time to print out a string in the chosen font. Defaults to GACHA

```
    (PROG ((FONTARRAY (ASSOC (OR FONTFAMILY 'GACHA)
                             \SPLINEFONTSINCORE))
           CHAR CHARDESC)
           (if FONTARRAY
               then (SETQ FONTARRAY (CADR FONTARRAY))
             else (printout T "Spline font" %, FONTFAMILY %, "not in core.  Load it with READ.SPLINE.FONT")
                  (LISPERROR))
           (for I to (NCHARS STRING) do (SETQ CHAR (NTHCHARCODE STRING I))
                                        (SETQ CHARDESC (ELT FONTARRAY CHAR))
                                        (if CHARDESC
                                            then (SFDRAW CHARDESC NIL NIL NIL SCALE STREAM)
                                          else                          ; well, what to do?  ignore for now.  The char is not currently
                                                                        ; there
                                               ))
           (FLUSHOUTPUT STREAM)
           (RETURN STRING])
```

(SFDRAW

```
[LAMBDA (CHARDESC PRECISION XOFFSET YOFFSET SCALE STREAM)       (* gbn "24-Oct-85 16:59")
```

(* * takes a character descriptor in SF format and draws it on STREAM)

```
    (PROG ((PRECISION (OR PRECISION \CHARSEGMENTS.IRIS))
           (X (OR XOFFSET (DSPXPOSITION NIL STREAM)))
           (Y (OR YOFFSET (DSPYPOSITION NIL STREAM)))
           (SCALE (OR SCALE 1.0))
           XWIDTH)
           (for CCURVE in (fetch SPLINES of CHARDESC) do (SFDRAW.CLOSED.CURVE CCURVE PRECISION X Y SCALE STREAM))
           (MOVETO [IPLUS X (SETQ XWIDTH (TIMES SCALE (fetch XWIDTH of (fetch SF.WIDTH of CHARDESC]
                  [IPLUS Y (TIMES SCALE (fetch YWIDTH of (fetch SF.WIDTH of CHARDESC]
                  STREAM)
           (RETURN XWIDTH])
```

(SFDRAW.CLOSED.CURVE

```
[LAMBDA (CCURVE PRECISION XOFFSET YOFFSET SCALE STREAM)         (* gbn "21-Jun-85 03:00")
```

(* * A closed curve looks like a list of splines. Each spline is described by the record SF.SPLINE)

```
(PROG ((STREAM (if (EQ (TYPENAME STREAM)
                       'WINDOW)
                   then (WINDOWPROP STREAM 'DSP)
                   else STREAM))
       (SCALE (OR SCALE 1.0))
       SPPOUTSTREAM)
      [for SPLINE in CCURVE
         do                                                    (* if necessary destructively change the knot list to be a list of
                                                               postions)
            [if [NOT (type? POSITION (CAR (fetch KNOTLIST of SPLINE]
                then (for KNOT in (fetch KNOTLIST of SPLINE) do (RPLACD KNOT (CADR KNOT]
                                                               (* draw a single spline, driven off the stream type)
            (SELECTQ (TYPENAME (fetch IMAGEDATA of STREAM))
                (IRISDATA

(* this is for the iris colour monitor, which is interested in Bezier control points.
Use the knots together with the derivative list to produce the Bezier points to send to the Iris)

                          (SETQ SPPOUTSTREAM (fetch SPPOUTSTREAM of (fetch IRISDATA of STREAM)))
                          (bind BEZIER for I to (SUB1 (fetch %#OFKNOTS of SPLINE)) as KNOT
                             in (fetch KNOTLIST of SPLINE) as DERIVS in (fetch DERIVATIVELIST of SPLINE)
                             do (SETQ BEZIER (SF.DERIVS.TO.BEZIER KNOT XOFFSET YOFFSET SCALE DERIVS))
                                                               (* get the bezier control points corresponding to the parametric
                                                               (derivative) definition)
                                (SELECTQ \IRIS.VERSION
                                    (GL2 (IRIS.CRV BEZIER SPPOUTSTREAM))
                                    (R1C (IRIS.CURVE PRECISION \BEZIERBASIS.IRIS BEZIER SPPOUTSTREAM))
                                    (ERROR))))
                (\DISPLAYDATA

(* since the display is interested in the control points in the derivative form as found here, just call the internal parametric
spline drawing routine for the display)
                                                               (* (GLOBALRESOURCE \BRUSHBBT
                                                               (PROG ((%#KNOTS (fetch %#OFKNOTS of SPLINE))
                                                               (BBT \BRUSHBBT) (RESULT)) (SETQ RESULT
                                                               (create SPLINE %#KNOTS _ %#KNOTS DX _
                                                               (ARRAY %#KNOTS 0 0.0) DDX _
                                                               (ARRAY %#KNOTS 0 0.0) DDDX _
                                                               (ARRAY %#KNOTS 0 0.0) DY _ (ARRAY %#KNOTS 0 0.0)
                                                               DDY _ (ARRAY %#KNOTS 0 0.0) DDDY _
                                                               (ARRAY %#KNOTS 0 0.0) X _ (ARRAY %#KNOTS 0 0.0) Y _
                                                               (ARRAY %#KNOTS 0 0.0))) (for I to
                                                               (SUB1 %#KNOTS) as KNOT in (fetch KNOTLIST of SPLINE) as
                          DERIVS in (fetch DERIVATIVELIST of SPLINE) do (SETA (fetch X of RESULT) I
                                                               (PLUS XOFFSET (TIMES SCALE
                                                               (fetch XCOORD of KNOT)))) (SETA
                                                               (fetch Y of RESULT) I (PLUS YOFFSET
                                                               (TIMES SCALE (fetch YCOORD of KNOT))))
                                                               (SETA (fetch (SPLINE DX) of RESULT) I
                                                               (TIMES SCALE (fetch XPRIME of DERIVS)))
                                                               (SETA (fetch DY of RESULT) I (TIMES SCALE
                                                               (fetch YPRIME of DERIVS))) (SETA
                                                               (fetch DDX of RESULT) I (TIMES SCALE
                                                               (fetch XDPRIME of DERIVS))) (SETA
                                                               (fetch DDY of RESULT) I (TIMES SCALE
                                                               (fetch YDPRIME of DERIVS))) (SETA
                                                               (fetch DDDX of RESULT) I (TIMES SCALE
                                                               (fetch XTPRIME of DERIVS))) (SETA
                                                               (fetch DDDY of RESULT) I (TIMES SCALE
                                                               (fetch YTPRIME of DERIVS))) finally
                                                               (\CURVE2 RESULT 1 NIL BBT STREAM)))))
                          )
                (PROGN

(* Don't know what kind of stream so just do it using the standard DSP fns.)

(* * "JUNK TO NOT TYPE AGAIN" (SETQ %#KNOTS (fetch %#OFKNOTS of SPLINE))
(replace %#KNOTS of RESULT with %#KNOTS) (replace DX OF RESULT WITH
(ARRAY %#KNOTS 0 0.0)) (replace DDX of RESULT with (ARRAY %#KNOTS 0 0.0))
(replace DDDX of RESULT with (ARRAY %#KNOTS 0 0.0)) (replace DY of RESULT with
(ARRAY %#KNOTS 0 0.0)) (replace DDY of RESULT with (ARRAY %#KNOTS 0 0.0))
(replace DDDY of RESULT with (ARRAY %#KNOTS 0 0.0)) (replace X of RESULT with
(ARRAY %#KNOTS 0 0.0)) (replace Y of RESULT with (ARRAY %#KNOTS 0 0.0)))

                          (if SCALE
                              then (printout T "SCALE specified for device which does not support it")
                                   (LISPERROR))
                          (DRAWCURVE (for KNOT in (fetch KNOTLIST of SPLINE)
                                        collect (create POSITION
                                                        XCOORD _ (PLUS (fetch XCOORD of KNOT)
                                                                       XOFFSET)
                                                        YCOORD _ (PLUS (fetch YCOORD of KNOT)
                                                                       YOFFSET)))
                                NIL NIL NIL STREAM]
      (RETURN])
```

```
(TEST
  [LAMBDA (STRING COLOR SCALE)                                    (* gbn " 1-Aug-84 02:45")

          (* * comment)

    (PROG NIL
          (IRIS.COLOR IRIS.BLACK)
          (IRIS.CLEAR)
          (IRIS.COLOR (OR COLOR IRIS.BLUE))
          (SF.PRINT (OR STRING "Greg")
                 NIL SCALE STR)
          (IRIS.GFLUSH)
          (RETURN])

(VIEW.FONT.FILES
  [LAMBDA (FILES)                                                 (* edited%: " 9-Aug-84 05:35")

          (* * comment)

    (PROG (FONTARRAY FAMILY I CHAR)
          (RETURN (for F in (OR (LISTP FILES)
                                (LIST FILES))
                     collect (SETQ I (OPENSTREAM F 'INPUT))
                             (SETQ CHAR (READ I))
                             (CONS FAMILY (bind C repeatwhile (NEQ 'STOP (SETQ CHAR (READ I)))
                                             collect [SETQ C (CHARACTER (fetch CHARCODE of (fetch CHARACTER
                                                                                              of CHAR]
                                                     (printout T C %,)
                                                     C
                                             finally (CLOSEF I])

(\LOOKUPSPLINEFONT
  [LAMBDA (FAMILY CHARSET)                                        (* gbn "22-Oct-85 12:09")

          (* * if there is a font array in core for this charset of this font family, this returns it, else nil)

    (LET ((ENTRY (SASSOC (LIST FAMILY CHARSET)
                         \SPLINEFONTSINCORE)))
         (AND ENTRY (CDR ENTRY])

(\SETSPLINEFONT
  [LAMBDA (FAMILY CHARSET ARRAY)                                  (* gbn "22-Oct-85 11:42")

          (* * installs a font array in \splinefontsincore for this family and charset)

    (PUTASSOC (LIST FAMILY CHARSET)
           ARRAY \SPLINEFONTSINCORE])

(ginit
  [LAMBDA NIL                                                     (* edited%: " 6-Aug-84 12:00")
    (if (MOUSECONFIRM "do you really want to ginit. You destroy font definitions which must be reloaded?" NIL
              (if (HASTTYWINDOWP)
                  then T
                else PROMPTWINDOW))
        then (IRIS.GINIT)
             (IRIS.CURSOFF)
             (IRIS.CLEAR)
             (makecolormap)
             (IRIS.SETCURSOR 0 1 255)
             (IRIS.COLOR IRIS.RED])

)

(DECLARE%: EVAL@LOAD DONTCOPY

(FILESLOAD (LOADCOMP)
       IRISSTREAM)

(RPAQQ TIMESROMANDFILES (TIMESROMAND.LC1-SF;1 TIMESROMAND.LC2-SF;1 TIMESROMAND.NUM-SF;1 TIMESROMAND.S1-SF;1
                                TIMESROMAND.S3-SF;1 TIMESROMAND.UC1-SF;1 TIMESROMAND.UC2-SF;1))

(RPAQQ TRA
       [(FAMILY TIMESROMAND)
        (CHARACTER 97)
        (FACE M R R)
        (WIDTH 237 0)
        (FIDUCIAL 385 385)
        (VERSION 0 29-SEP-77 |16:35:46|)
        (MADE-FROM NIL 121 130 62 40)
        (SPLINES ((2 ((200 . 153)
                      (200 . 45))
                     NIL
```

```
      ((0 -108.0 0 0 0 0))
      NATURAL)
   (4 ((200 . 45)
       (202 . 28)
       (214 . 23)
       (223 . 27))
      NIL
      ((-0.866666 -19.6 0 0 17.2 15.6)
       (7.733334 -11.8 17.2 15.6 -26.0 -6.000002)
       (11.93333 0.8000005 -8.8 9.599998 8.8 -9.599998))
      NATURAL)
   (2 ((223 . 27)
       (227 . 20))
      NIL
      ((4.0 -7.0 0 0 0 0))
      NATURAL)
   (7 ((227 . 20)
       (216 . 9)
       (197 . -1)
       (170 . -6)
       (144 . -2)
       (126 . 7)
       (117 . 23))
      NIL
      ((-9.420512 -11.06538 0 0 -9.476924 0.3923078)
       (-14.15898 -10.86923 -9.476924 0.3923078 -0.6153832 4.038461)
       (-23.94359 -8.457692 -10.09231 4.430769 11.93846 7.453844)
       (-28.06666 -0.2999992 1.846154 11.88461 6.861538 -9.853844)
       (-22.78974 6.657692 8.707692 2.030769 2.615385 7.961536)
       (-12.77436 12.66923 11.32308 9.992306 -11.32308 -9.992306))
      NATURAL)
   (10 ((117 . 23)
        (89 . 4)
        (62 . -3)
        (37 . 3)
        (18 . 25)
        (18 . 52)
        (32 . 77)
        (60 . 98)
        (92 . 113)
        (118 . 125))
       NIL
       ((-28.15654 -21.56226 0 0 0.9392528 15.37358)
        (-27.68691 -13.87547 0.9392528 15.37358 1.303736 -4.867924)
        (-26.0958 -0.9358488 2.242989 10.50566 -0.1541991 10.09811)
        (-23.9299 14.61887 2.08879 20.60377 23.31306 -17.52453)
        (-10.18458 26.46038 25.40185 3.079245 -15.09804 -6.0)
        (7.668246 26.53962 10.30381 -2.920755 7.079094 -0.4754715)
        (21.51161 23.38113 17.3829 -3.396226 -13.21835 -4.098113)
        (32.28533 17.93585 4.164558 -7.494339 -14.20569 4.867924)
        (29.34705 12.87547 -10.04114 -2.626415 10.04114 2.626415))
       NATURAL)
   (2 ((118 . 125)
       (118 . 166))
      NIL
      ((0 41.0 0 0 0 0))
      NATURAL)
   (17 ((118 . 166)
        (110 . 187)
        (91 . 189)
        (88 . 171)
        (98 . 152)
        (85 . 130)
        (59 . 124)
        (32 . 132)
        (21 . 154)
        (31 . 182)
        (55 . 198)
        (86 . 205)
        (118 . 208)
        (148 . 205)
        (175 . 196)
        (195 . 177)
        (200 . 153))
       NIL
       ((-4.255993 24.64079 0 0 -22.46404 -21.84477)
        (-15.48801 13.71841 -22.46404 -21.84477 46.32022 -4.776135)
        (-14.79195 -10.51443 23.85617 -26.62091 -0.8168106 34.94932)
        (8.655816 -19.66068 23.03936 8.328413 -61.05298 -21.02116)
        (1.168687 -21.84285 -38.01361 -12.69275 29.0287 37.13531)
        (-22.33057 -15.96793 -8.984904 24.44257 4.938131 -13.52012)
        (-28.8464 1.714581 -4.046773 10.92245 23.21877 4.945154)
        (-21.2838 15.10961 19.172 15.86761 4.186775 -6.260496)
        (-0.01840973 27.84697 23.35877 9.607112 -9.965858 -27.90316)
        (18.35743 23.5025 13.39291 -18.29605 -6.323341 9.873148)
        (28.58868 10.14302 7.069574 -8.422904 -6.740779 6.410579)
        (32.28786 4.925408 0.3287937 -2.012324 -2.713542 -5.515475)
```

```
                      (31.25988 0.1553465 -2.384749 -7.527798 -0.4050512 3.651317)
                      (28.67261 -5.546795 -2.7898 -3.876482 -1.666252 -9.089788)
                      (25.04968 -13.96817 -4.456052 -12.96627 -16.92993 8.707838)
                      (12.12866 -22.58052 -21.38599 -4.258433 21.38599 4.258433))
                     NATURAL))
               ((2 ((118 . 108)
                    (118 . 58))
                   NIL
                   ((0 -50.0 0 0 0 0))
                   NATURAL)
                (9 ((118 . 58)
                    (118 . 49)
                    (111 . 38)
                    (97 . 39)
                    (90 . 49)
                    (88 . 66)
                    (93 . 83)
                    (104 . 99)
                    (118 . 108))
                   NIL
                   ((1.256443 -7.739323 0 0 -7.53866 -7.564064)
                    (-2.512887 -11.52136 -7.53866 -7.564064 -4.3067 25.82032)
                    (-12.2049 -6.175257 -11.84536 18.25626 24.76546 -11.71723)
                    (-11.66752 6.222386 12.9201 6.539029 -10.75515 3.048599)
                    (-4.124999 14.28571 2.164949 9.587628 6.255152 -12.47717)
                    (1.167526 17.63475 8.420102 -2.889543 -2.265462 4.860088)
                    (8.454898 17.17526 6.154639 1.970545 -3.193299 -12.96318)
                    (13.01289 12.66421 2.96134 -10.99263 -2.96134 10.99263))
                   NATURAL])

(RPAQQ TRB
       [(FAMILY TIMESROMAND)
        (CHARACTER 99)
        (FACE M R R)
        (WIDTH 211 0)
        (FIDUCIAL 385 385)
        (VERSION 0 29-SEP-77 |16:50:06|)
        (MADE-FROM NIL 118 130 57 78)
        (SPLINES ((2 ((181 . 46)
                      (189 . 37))
                     NIL
                     ((8.0 -9.0 0 0 0 0))
                     NATURAL)
                  (32 ((189 . 37)
                       (166 . 14)
                       (135 . -1)
                       (92 . -4)
                       (59 . 7)
                       (33 . 30)
                       (16 . 66)
                       (12 . 101)
                       (17 . 136)
                       (30 . 166)
                       (51 . 189)
                       (86 . 204)
                       (125 . 206)
                       (154 . 202)
                       (180 . 189)
                       (196 . 168)
                       (196 . 143)
                       (178 . 127)
                       (155 . 124)
                       (138 . 134)
                       (130 . 155)
                       (130 . 176)
                       (124 . 189)
                       (111 . 184)
                       (96 . 160)
                       (91 . 129)
                       (93 . 95)
                       (102 . 63)
                       (117 . 42)
                       (144 . 33)
                       (167 . 39)
                       (181 . 46))
                      NIL
                      ((-21.8826 -24.50792 0 0 -6.704422 9.047542)
                       (-25.23481 -19.98415 -6.704422 9.047542 -14.47789 2.762293)
                       (-39.17817 -9.555464 -21.18231 11.80983 40.61599 3.903284)
                       (-40.05249 4.206011 19.43367 15.71312 -15.98606 -6.375422)
                       (-28.61185 16.73142 3.447612 9.337696 5.328262 9.5984)
                       (-22.50011 30.86831 8.775874 18.9361 6.673012 -26.01818)
                       (-10.38772 36.79532 15.44889 -7.082087 -8.020304 10.47433)
                       (1.051008 34.95039 7.428581 3.392247 1.408212 -9.879148)
                       (9.183696 33.40307 8.836792 -6.486902 -3.612545 -0.9577408)
                       (16.21421 26.4373 5.224247 -7.444641 13.04197 1.710107)
                       (27.95945 19.84771 18.26621 -5.734535 -12.55532 -11.88268)
```

```
                      (39.948 8.171835 5.710896 -17.61722 -22.82069 15.82064)
                      (34.24855 -1.535063 -17.1098 -1.796579 19.83808 -9.399882)
                      (27.05779 -8.031584 2.728286 -11.19646 -14.53163 3.778893)
                      (22.52026 -17.3386 -11.80335 -7.417568 -3.711554 0.2843065)
                      (8.861142 -24.61401 -15.5149 -7.133261 -6.622156 19.08388)
                      (-9.964836 -22.20533 -22.13706 11.95062 18.20018 1.380173)
                      (-23.0018 -9.564632 -3.936874 13.33079 11.82142 -0.6045686)
                      (-21.02796 3.463873 7.884551 12.72622 0.5141201 1.038099)
                      (-12.88635 16.70915 8.39867 13.76432 4.122093 -15.54783)
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(CONSTANTS (\CHARSEGMENTS.IRIS 10))
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(PUTPROPS SFFONT COPYRIGHT ("Venue" 1991))
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FUNCTION INDEX

RECORD INDEX

VARIABLE INDEX

CONSTANT INDEX