```
(RPAQQ DSPSCALECOMS
       ((LOCALVARS . T)
        (* * SCALED ImageStream ImageOp Functions)
        (FNS INITSCALEDIMAGESTREAM OPENIMAGESTREAM.SCALED)
        (FNS \BACKCOLOR.SCALED \BITBLT.SCALED \BLTSHADE.SCALED \BOTTOMMARGIN.SCALED \BOUT.SCALED
            \CHARWIDTH.SCALED \CHARWIDTHY.SCALED \CLIPPINGREGION.SCALED \CLOSEFN.SCALED \COLOR.SCALED
            \DEFAULTSTATE.SCALED \DRAWARC.SCALED \DRAWCIRCLE.SCALED \DRAWCURVE.SCALED \DRAWELLIPSE.SCALED
            \DRAWLINE.SCALED \DRAWPOINT.SCALED \DRAWPOLYGON.SCALED \FILLCIRCLE.SCALED \FILLPOLYGON.SCALED
            \FONT.SCALED \LEFTMARGIN.SCALED \LINEFEED.SCALED \MOVETO.SCALED \NEWPAGE.SCALED \OPERATION.SCALED
            \POPSTATE.SCALED \PUSHSTATE.SCALED \RESET.SCALED \RIGHTMARGIN.SCALED \ROTATE.SCALED \SCALE.SCALED
            \SCALEDBITBLT.SCALED \SPACEFACTOR.SCALED \STRINGWIDTH.SCALED \TERPRI.SCALED \TOPMARGIN.SCALED
            \TRANSLATE.SCALED \XPOSITION.SCALED \YPOSITION.SCALED \OUTCHAR.SCALED)
        (* * Self Scaling DSP* Functions)
        (FNS CENTERPRINTINREGION! CHARWIDTH! CHARWIDTHY! CURSORPOSITION! BITBLT! BITMAPBIT! BLTSHADE! DSPBACKUP!
            DSPBOTTOMMARGIN! DSPCLIPPINGREGION! DRAWBETWEEN! DRAWARC! DRAWCIRCLE! DRAWCURVE! DRAWELLIPSE!
            DRAWLINE! DRAWPOINT! DRAWPOLYGON! DRAWTO! FILLCIRCLE! FILLPOLYGON! FONTPROP! DSPLEFTMARGIN!
            DSPLINEFEED! GETPOSITION! MOVETO! MOVETOUPPERLEFT! DSPRIGHTMARGIN! DSPSCALE! RELDRAWTO! RELMOVETO!
            SCALEDBITBLT! STRINGREGION! STRINGWIDTH! DSPSPACEFACTOR! DSPTRANSLATE! DSPTOPMARGIN! DSPUNITS!
            DSPXOFFSET! DSPXPOSITION! DSPYOFFSET! DSPYPOSITION!)
        (* * Low Level Scaling Functions)
        (FNS DSPSCALE.BRUSH DSPSCALE.DASHING DSPSCALE.POINTS DSPSCALE.REGION DSPSCALE.NUMBER DSPSCALE.POSITION
            DSPSCALE.XPOSITION DSPSCALE.YPOSITION DSPSCALE.WIDTH DSPUNSCALE.REGION DSPUNSCALE.POSITION
            DSPUNSCALE.NUMBER DSPUNSCALE.CHARACTER)
        (MACROS DSPUNSCALE.XPOSITION DSPUNSCALE.YPOSITION)
        (* * etc.)
        (DECLARE%: DONTCOPY (RECORDS SCALEDIMAGEDATA CONVERT))
        [ADDVARS (IMAGESTREAMTYPES (SCALED (OPENSTREAM OPENIMAGESTREAM.SCALED]
        (INITVARS \SCALEDIMAGEOPS \NULLFDEV)
        (GLOBALVARS \SCALEDIMAGEOPS \NULLFDEV)
        [INITVARS (DSPSCALE.SCRATCHBRUSH '(ROUND 1 NIL))
            (DSPSCALE.SCRATCHREGION (create REGION))
            (DSPSCALE.SCRATCHPOSITION (create POSITION))
            (DSPSCALE.SCRATCHLIST (to 10 collect))
            (DSPSCALE.SCRATCHDASHING (to 10 collect))
            (DSPSCALE.SCRATCHPOINTS (to 10 collect (create POSITION]
        (GLOBALVARS DSPSCALE.SCRATCHBRUSH DSPSCALE.SCRATCHREGION DSPSCALE.SCRATCHPOSITION DSPSCALE.SCRATCHLIST
            DSPSCALE.SCRATCHDASHING DSPSCALE.SCRATCHPOINTS)
        (P (MOVD? 'DSPUNITS! 'DSPUNITS)
            (INITSCALEDIMAGESTREAM))))

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(LOCALVARS . T)
)
```

(* * SCALED ImageStream ImageOp Functions)

```
(DEFINEQ

(INITSCALEDIMAGESTREAM
  [LAMBDA NIL                                              ; Edited 19-Jul-88 10:59 by cdl
    (DECLARE (GLOBALVARS \DISPLAYIMAGEOPS))
    [if (NULL \NULLFDEV)
        then (SETQ \NULLFDEV (create FDEV
                                    CLOSEFILE _ (FUNCTION NILL]
    (SETQ \SCALEDIMAGEOPS (create IMAGEOPS
                                  IMAGETYPE _ 'SCALED
                                  IMCLOSEFN _ (FUNCTION \CLOSEFN.SCALED)
                                  IMXPOSITION _ (FUNCTION \XPOSITION.SCALED)
                                  IMYPOSITION _ (FUNCTION \YPOSITION.SCALED)
                                  IMFONT _ (FUNCTION \FONT.SCALED)
                                  IMLEFTMARGIN _ (FUNCTION \LEFTMARGIN.SCALED)
                                  IMRIGHTMARGIN _ (FUNCTION \RIGHTMARGIN.SCALED)
                                  IMLINEFEED _ (FUNCTION \LINEFEED.SCALED)
                                  IMDRAWLINE _ (FUNCTION \DRAWLINE.SCALED)
                                  IMDRAWCURVE _ (FUNCTION \DRAWCURVE.SCALED)
                                  IMDRAWCIRCLE _ (FUNCTION \DRAWCIRCLE.SCALED)
                                  IMDRAWELLIPSE _ (FUNCTION \DRAWELLIPSE.SCALED)
                                  IMFILLCIRCLE _ (FUNCTION \FILLCIRCLE.SCALED)
                                  IMBLTSHADE _ (FUNCTION \BLTSHADE.SCALED)
```

```
                                    IMBITBLT _ (FUNCTION \BITBLT.SCALED)
                                    IMNEWPAGE _ (FUNCTION \NEWPAGE.SCALED)
                                    IMMOVETO _ (FUNCTION \MOVETO.SCALED)
                                    IMSCALE _ (FUNCTION \SCALE.SCALED)
                                    IMTERPRI _ (FUNCTION \TERPRI.SCALED)
                                    IMTOPMARGIN _ (FUNCTION \TOPMARGIN.SCALED)
                                    IMBOTTOMMARGIN _ (FUNCTION \BOTTOMMARGIN.SCALED)
                                    IMSPACEFACTOR _ (FUNCTION \SPACEFACTOR.SCALED)
                                    IMFONTCREATE _ 'DISPLAY
                                    IMOPERATION _ (FUNCTION \OPERATION.SCALED)
                                    IMCOLOR _ (FUNCTION \COLOR.SCALED)
                                    IMSTRINGWIDTH _ (FUNCTION \STRINGWIDTH.SCALED)
                                    IMCHARWIDTH _ (FUNCTION \CHARWIDTH.SCALED)
                                    IMCHARWIDTHY _ (FUNCTION \CHARWIDTHY.SCALED)
                                    IMBACKCOLOR _ (FUNCTION \BACKCOLOR.SCALED)
                                    IMCLIPPINGREGION _ (FUNCTION \CLIPPINGREGION.SCALED)
                                    IMRESET _ (FUNCTION \RESET.SCALED)
                                    IMDRAWPOLYGON _ (FUNCTION \DRAWPOLYGON.SCALED)
                                    IMFILLPOLYGON _ (FUNCTION \FILLPOLYGON.SCALED)
                                    IMSCALEDBITBLT _ (FUNCTION \SCALEDBITBLT.SCALED)
                                    IMROTATE _ (FUNCTION \ROTATE.SCALED)
                                    IMDRAWARC _ (FUNCTION \DRAWARC.SCALED)
                                    IMTRANSLATE _ (FUNCTION \TRANSLATE.SCALED)
                                    IMPUSHSTATE _ (FUNCTION \PUSHSTATE.SCALED)
                                    IMPOPSTATE _ (FUNCTION \POPSTATE.SCALED)
                                    IMDEFAULTSTATE _ (FUNCTION \DEFAULTSTATE.SCALED)
                                    IMDRAWPOINT _ (FUNCTION \DRAWPOINT.SCALED])
```

(**OPENIMAGESTREAM.SCALED**
```
  [LAMBDA (IMAGESTREAM OPTIONS)                                        (* cdl "26-Jan-87 09:23")
                                                                       (* DECLARATIONS%: (RECORD PAIR
                                                                       (KEY VALUE)))

    (LET (STREAM SCALE)
        [SETQ OPTIONS (for PAIR on OPTIONS by (CDDR PAIR) when (with PAIR PAIR (SELECTQ KEY
                                                                                    (SCALE (SETQ SCALE VALUE)
                                                                                          NIL)
                                                                                    T))
                              join (with PAIR PAIR (LIST KEY VALUE]
        (with STREAM (SETQ STREAM (create STREAM
                                            IMAGEDATA _ (create SCALEDIMAGEDATA
                                                            IMAGESTREAM _ IMAGESTREAM)
                                            IMAGEOPS _ (create IMAGEOPS
                                                            IMFONTCREATE _ (with IMAGEOPS (fetch (STREAM IMAGEOPS)
                                                                                              of IMAGESTREAM)
                                                                                IMFONTCREATE)
                                                            reusing \SCALEDIMAGEOPS)
                                            OUTCHARFN _ (FUNCTION \OUTCHAR.SCALED)
                                            ACCESS _ 'OUTPUT
                                            DEVICE _ \NULLFDEV))
                (SETQ STRMBOUTFN (FUNCTION \BOUT.SCALED)))
        (if SCALE
            then (DSPSCALE! SCALE IMAGESTREAM))
        STREAM])
```

)

(DEFINEQ

(**BACKCOLOR.SCALED**
```
  [LAMBDA (STREAM COLOR)                                               (* cdl "26-Jan-87 09:04")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
        (IMAGEOP 'IMBACKCOLOR IMAGESTREAM IMAGESTREAM COLOR])
```

(**BITBLT.SCALED**
```
  [LAMBDA (SOURCEBITMAP SOURCELEFT SOURCEBOTTOM STREAM DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT SOURCETYPE
                    OPERATION TEXTURE CLIPPINGREGION)                  (* cdl "26-Jan-87 10:37")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
        (BITBLT SOURCEBITMAP SOURCELEFT SOURCEBOTTOM IMAGESTREAM (DSPSCALE.XPOSITION DESTINATIONLEFT
                                                                                    IMAGESTREAM)
                (DSPSCALE.YPOSITION DESTINATIONBOTTOM IMAGESTREAM)
                WIDTH HEIGHT SOURCETYPE OPERATION TEXTURE (DSPSCALE.REGION CLIPPINGREGION IMAGESTREAM])
```

(**BLTSHADE.SCALED**
```
  [LAMBDA (TEXTURE STREAM DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT OPERATION CLIPPINGREGION)
                                                                       (* cdl "26-Jan-87 10:05")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
        (IMAGEOP 'IMBLTSHADE IMAGESTREAM TEXTURE IMAGESTREAM (DSPSCALE.XPOSITION DESTINATIONLEFT IMAGESTREAM)
                (DSPSCALE.YPOSITION DESTINATIONBOTTOM IMAGESTREAM)
                (DSPSCALE.NUMBER WIDTH IMAGESTREAM)
                (DSPSCALE.NUMBER HEIGHT IMAGESTREAM)
                OPERATION
                (DSPSCALE.REGION CLIPPINGREGION IMAGESTREAM])
```

(\BOTTOMMARGIN.SCALED
```
  [LAMBDA (STREAM YPOSITION)                                    (* cdl "26-Jan-87 08:55")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (DSPUNSCALE.YPOSITION (IMAGEOP 'IMBOTTOMMARGIN IMAGESTREAM IMAGESTREAM (if YPOSITION
                                                                            then (DSPSCALE.YPOSITION
                                                                                   YPOSITION IMAGESTREAM)
                                                                                 ))
                   IMAGESTREAM])
```

(\BOUT.SCALED
```
  [LAMBDA (STREAM BYTE)                                         (* cdl "26-Jan-87 08:49")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (BOUT IMAGESTREAM BYTE])
```

(\CHARWIDTH.SCALED
```
  [LAMBDA (STREAM CHARCODE)                                     (* cdl "26-Jan-87 09:50")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (DSPUNSCALE.CHARACTER (IMAGEOP 'IMCHARWIDTH IMAGESTREAM IMAGESTREAM CHARCODE)
                   (DSPFONT NIL IMAGESTREAM)
                   IMAGESTREAM])
```

(\CHARWIDTHY.SCALED
```
  [LAMBDA (STREAM CHARCODE)                                     (* cdl "26-Jan-87 10:17")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (DSPUNSCALE.CHARACTER (IMAGEOP 'IMCHARWIDTHY IMAGESTREAM IMAGESTREAM CHARCODE)
                   (DSPFONT NIL IMAGESTREAM)
                   IMAGESTREAM])
```

(\CLIPPINGREGION.SCALED
```
  [LAMBDA (STREAM REGION)                                       (* cdl "26-Jan-87 09:48")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (DSPUNSCALE.REGION (IMAGEOP 'IMCLIPPINGREGION IMAGESTREAM IMAGESTREAM (if REGION
                                                                            then (DSPSCALE.REGION
                                                                                   REGION IMAGESTREAM)))
                   IMAGESTREAM])
```

(\CLOSEFN.SCALED
```
  [LAMBDA (STREAM)                                              (* cdl "26-Jan-87 08:49")
     (with STREAM STREAM (PROG1 (CLOSEF (with SCALEDIMAGEDATA IMAGEDATA IMAGESTREAM))
                                (SETQ IMAGEDATA NIL])
```

(\COLOR.SCALED
```
  [LAMBDA (STREAM COLOR)                                        (* cdl "26-Jan-87 08:57")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (IMAGEOP 'IMCOLOR IMAGESTREAM IMAGESTREAM COLOR])
```

(\DEFAULTSTATE.SCALED
```
  [LAMBDA (STREAM)                                              ; Edited 19-Jul-88 08:34 by cdl
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (IMAGEOP 'IMDEFAULTSTATE IMAGESTREAM IMAGESTREAM])
```

(\DRAWARC.SCALED
```
  [LAMBDA (STREAM CENTERX CENTERY RADIUS STARTANGLE NDEGREES BRUSH DASHING)
                                                               ; Edited 14-Sep-87 14:30 by cdl
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (IMAGEOP 'IMDRAWARC IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION CENTERX IMAGESTREAM)
                   (DSPSCALE.YPOSITION CENTERY IMAGESTREAM)
                   (DSPSCALE.NUMBER RADIUS IMAGESTREAM)
                   STARTANGLE NDEGREES (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                   (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\DRAWCIRCLE.SCALED
```
  [LAMBDA (STREAM CENTERX CENTERY RADIUS BRUSH DASHING)         (* cdl "26-Jan-87 09:03")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (IMAGEOP 'IMDRAWCIRCLE IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION CENTERX IMAGESTREAM)
                   (DSPSCALE.YPOSITION CENTERY IMAGESTREAM)
                   (DSPSCALE.NUMBER RADIUS IMAGESTREAM)
                   (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                   (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\DRAWCURVE.SCALED
```
  [LAMBDA (STREAM KNOTS CLOSED BRUSH DASHING)                   (* cdl "26-Jan-87 09:36")
     (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
           (IMAGEOP 'IMDRAWCURVE IMAGESTREAM IMAGESTREAM (DSPSCALE.POINTS KNOTS IMAGESTREAM)
                   CLOSED
                   (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                   (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\DRAWELLIPSE.SCALED
```
[LAMBDA (STREAM CENTERX CENTERY SEMIMINORRADIUS SEMIMAJORRADIUS ORIENTATION BRUSH DASHING)
                                                           (* cdl "26-Jan-87 09:26")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMDRAWELLIPSE IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION CENTERX IMAGESTREAM)
                 (DSPSCALE.YPOSITION CENTERY IMAGESTREAM)
                 (DSPSCALE.NUMBER SEMIMINORRADIUS IMAGESTREAM)
                 (DSPSCALE.NUMBER SEMIMAJORRADIUS IMAGESTREAM)
                 ORIENTATION
                 (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                 (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\DRAWLINE.SCALED
```
[LAMBDA (STREAM X1 Y1 X2 Y2 WIDTH OPERATION COLOR DASHING)        (* cdl "26-Jan-87 09:41")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMDRAWLINE IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION X1 IMAGESTREAM)
                 (DSPSCALE.YPOSITION Y1 IMAGESTREAM)
                 (DSPSCALE.XPOSITION X2 IMAGESTREAM)
                 (DSPSCALE.YPOSITION Y2 IMAGESTREAM)
                 (DSPSCALE.WIDTH WIDTH IMAGESTREAM)
                 OPERATION COLOR (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\DRAWPOINT.SCALED
```
[LAMBDA (STREAM X Y BRUSH OPERATION)                              ; Edited 14-Sep-87 14:30 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMDRAWPOINT IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION X IMAGESTREAM)
                 (DSPSCALE.YPOSITION Y IMAGESTREAM)
                 (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                 OPERATION])
```

(\DRAWPOLYGON.SCALED
```
[LAMBDA (STREAM KNOTS CLOSED BRUSH DASHING)                       (* cdl "26-Jan-87 09:37")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMDRAWPOLYGON IMAGESTREAM IMAGESTREAM (DSPSCALE.POINTS KNOTS IMAGESTREAM)
                 CLOSED
                 (DSPSCALE.BRUSH BRUSH IMAGESTREAM)
                 (DSPSCALE.DASHING DASHING IMAGESTREAM])
```

(\FILLCIRCLE.SCALED
```
[LAMBDA (STREAM CENTERX CENTERY RADIUS TEXTURE)                   (* cdl "26-Jan-87 08:59")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMFILLCIRCLE IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION CENTERX IMAGESTREAM)
                 (DSPSCALE.YPOSITION CENTERY IMAGESTREAM)
                 (DSPSCALE.NUMBER RADIUS IMAGESTREAM)
                 TEXTURE])
```

(\FILLPOLYGON.SCALED
```
[LAMBDA (STREAM KNOTS TEXTURE OPERATION WINDNUMBER)               ; Edited 19-Jul-88 10:30 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMFILLPOLYGON IMAGESTREAM IMAGESTREAM (DSPSCALE.POINTS KNOTS IMAGESTREAM)
                 TEXTURE OPERATION WINDNUMBER])
```

(\FONT.SCALED
```
[LAMBDA (STREAM FONT)                                             (* cdl "26-Jan-87 09:13")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMFONT IMAGESTREAM IMAGESTREAM FONT])
```

(\LEFTMARGIN.SCALED
```
[LAMBDA (STREAM XPOSITION)                                        (* cdl "26-Jan-87 08:50")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (DSPUNSCALE.XPOSITION (IMAGEOP 'IMLEFTMARGIN IMAGESTREAM IMAGESTREAM (if XPOSITION
                                                                               then (DSPSCALE.XPOSITION
                                                                                       XPOSITION
                                                                                       IMAGESTREAM)))
             IMAGESTREAM])
```

(\LINEFEED.SCALED
```
[LAMBDA (STREAM DELTAY)                                           (* cdl "26-Jan-87 09:28")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (DSPUNSCALE.NUMBER (IMAGEOP 'IMLINEFEED IMAGESTREAM IMAGESTREAM (if DELTAY
                                                                          then (DSPSCALE.NUMBER DELTAY
                                                                                  IMAGESTREAM)))
             IMAGESTREAM])
```

(\MOVETO.SCALED
```
[LAMBDA (STREAM X Y)                                              (* cdl "26-Jan-87 09:30")
```

```
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMMOVETO IMAGESTREAM IMAGESTREAM (DSPSCALE.XPOSITION X IMAGESTREAM)
              (DSPSCALE.YPOSITION Y IMAGESTREAM])
```

(\NEWPAGE.SCALED
```
  [LAMBDA (STREAM)                                         (* cdl "26-Jan-87 09:10")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMNEWPAGE IMAGESTREAM IMAGESTREAM])
```

(\OPERATION.SCALED
```
  [LAMBDA (STREAM OPERATION)                               (* cdl "26-Jan-87 08:50")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMOPERATION IMAGESTREAM IMAGESTREAM OPERATION])
```

(\POPSTATE.SCALED
```
  [LAMBDA (STREAM)                                         ; Edited 19-Jul-88 08:32 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMPOPSTATE IMAGESTREAM IMAGESTREAM])
```

(\PUSHSTATE.SCALED
```
  [LAMBDA (STREAM)                                         ; Edited 19-Jul-88 08:31 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMPUSHSTATE IMAGESTREAM IMAGESTREAM])
```

(\RESET.SCALED
```
  [LAMBDA (STREAM)                                         (* cdl "26-Jan-87 09:09")
    (with STREAM STREAM (SETQ CHARPOSITION 0)
         (with SCALEDIMAGEDATA IMAGEDATA (IMAGEOP 'IMRESET IMAGESTREAM IMAGESTREAM])
```

(\RIGHTMARGIN.SCALED
```
  [LAMBDA (STREAM XPOSITION)                               (* cdl "26-Jan-87 08:50")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (DSPUNSCALE.XPOSITION (IMAGEOP 'IMRIGHTMARGIN IMAGESTREAM IMAGESTREAM (if XPOSITION
                                                                    then (DSPSCALE.XPOSITION
                                                                            XPOSITION IMAGESTREAM))
                            )
              IMAGESTREAM])
```

(\ROTATE.SCALED
```
  [LAMBDA (STREAM ROTATION)                                ; Edited 14-Sep-87 14:22 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (IMAGEOP 'IMROTATE IMAGESTREAM IMAGESTREAM ROTATION])
```

(\SCALE.SCALED
```
  [LAMBDA (STREAM SCALE)                                   (* cdl "26-Jan-87 09:34")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (if SCALE
              then (DSPSCALE! SCALE IMAGESTREAM)
            else (IMAGEOP 'IMSCALE IMAGESTREAM IMAGESTREAM])
```

(\SCALEDBITBLT.SCALED
```
  [LAMBDA (SOURCEBITMAP SOURCELEFT SOURCEBOTTOM STREAM DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT SOURCETYPE
                  OPERATION TEXTURE CLIPPINGREGION SCALE)        (* cdl "26-Jan-87 10:38")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (SCALEDBITBLT SOURCEBITMAP SOURCELEFT SOURCEBOTTOM IMAGESTREAM (DSPSCALE.XPOSITION DESTINATIONLEFT
                                                                              IMAGESTREAM)
              (DSPSCALE.YPOSITION DESTINATIONBOTTOM IMAGESTREAM)
              WIDTH HEIGHT SOURCETYPE OPERATION TEXTURE (DSPSCALE.REGION CLIPPINGREGION IMAGESTREAM)
              SCALE])
```

(\SPACEFACTOR.SCALED
```
  [LAMBDA (STREAM FACTOR)                                  (* cdl "26-Jan-87 09:46")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (DSPUNSCALE.NUMBER (IMAGEOP 'IMSPACEFACTOR IMAGESTREAM IMAGESTREAM (if FACTOR
                                                                    then (DSPSCALE.NUMBER FACTOR
                                                                            IMAGESTREAM)))
              IMAGESTREAM])
```

(\STRINGWIDTH.SCALED
```
  [LAMBDA (STREAM STRING RDTBL)                            (* cdl "26-Jan-87 09:45")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
         (DSPUNSCALE.CHARACTER (IMAGEOP 'IMSTRINGWIDTH IMAGESTREAM IMAGESTREAM STRING RDTBL)
              (DSPFONT NIL IMAGESTREAM)
              IMAGESTREAM])
```

(\TERPRI.SCALED
```
  [LAMBDA (STREAM)                                        (* cdl "26-Jan-87 09:06")
    (with STREAM STREAM (SETQ CHARPOSITION 0)
          (with SCALEDIMAGEDATA IMAGEDATA (IMAGEOP 'IMTERPRI IMAGESTREAM IMAGESTREAM])
```

(\TOPMARGIN.SCALED
```
  [LAMBDA (STREAM YPOSITION)                              (* cdl "26-Jan-87 08:54")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
          (DSPUNSCALE.YPOSITION (IMAGEOP 'IMTOPMARGIN IMAGESTREAM IMAGESTREAM (if YPOSITION
                                                                              then (DSPSCALE.YPOSITION
                                                                                     YPOSITION
                                                                                     IMAGESTREAM)))
                IMAGESTREAM])
```

(\TRANSLATE.SCALED
```
  [LAMBDA (STREAM Tx Ty)                                  ; Edited 19-Jul-88 13:32 by cdl
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
          (STREAMPROP IMAGESTREAM 'TRANSLATE (CREATEPOSITION (DSPSCALE.NUMBER Tx STREAM)
                                                             (DSPSCALE.NUMBER Ty STREAM])
```

(\XPOSITION.SCALED
```
  [LAMBDA (STREAM XPOSITION)                              (* cdl "26-Jan-87 08:51")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
          (DSPUNSCALE.XPOSITION (IMAGEOP 'IMXPOSITION IMAGESTREAM IMAGESTREAM (if XPOSITION
                                                                              then (DSPSCALE.XPOSITION
                                                                                     XPOSITION
                                                                                     IMAGESTREAM)))
                IMAGESTREAM])
```

(\YPOSITION.SCALED
```
  [LAMBDA (STREAM YPOSITION)                              (* cdl "26-Jan-87 08:51")
    (with SCALEDIMAGEDATA (with STREAM STREAM IMAGEDATA)
          (DSPUNSCALE.YPOSITION (IMAGEOP 'IMYPOSITION IMAGESTREAM IMAGESTREAM (if YPOSITION
                                                                              then (DSPSCALE.YPOSITION
                                                                                     YPOSITION
                                                                                     IMAGESTREAM)))
                IMAGESTREAM])
```

(\OUTCHAR.SCALED
```
  [LAMBDA (STREAM CHARCODE)                               (* cdl "26-Jan-87 10:20")
    [if (EQ CHARCODE (CHARCODE EOL))
        then (with STREAM STREAM (SETQ CHARPOSITION 0))
      else (freplace CHARPOSITION of STREAM with (\LOLOC (\ADDBASE (ffetch CHARPOSITION of STREAM)
                                                                   1]
    (BOUT STREAM CHARCODE])
```

)

                (* * Self Scaling DSP* Functions)

(DEFINEQ

(CENTERPRINTINREGION!
```
  [LAMBDA (EXP REGION STREAM)                             (* cdl "29-Jul-85 12:09")
    (CENTERPRINTINREGION EXP (if REGION
                                then (DSPSCALE.REGION REGION STREAM))
            STREAM])
```

(CHARWIDTH!
```
  [LAMBDA (CHARCODE FONT STREAM)                          ; Edited 19-Jul-88 13:16 by cdl
    (DSPUNSCALE.CHARACTER (CHARWIDTH CHARCODE FONT)
            FONT
            (OR STREAM (IMAGESTREAMP FONT])
```

(CHARWIDTHY!
```
  [LAMBDA (CHARCODE FONT STREAM)                          ; Edited 19-Jul-88 13:16 by cdl
    (DSPUNSCALE.CHARACTER (CHARWIDTHY CHARCODE FONT)
            FONT
            (OR STREAM (IMAGESTREAMP FONT])
```

(CURSORPOSITION!
```
  [LAMBDA (NEWPOSITION STREAM OLDPOSITION)                (* cdl "30-Oct-85 08:15")
    (DSPUNSCALE.POSITION (CURSORPOSITION (if NEWPOSITION
                                            then (DSPSCALE.POSITION NEWPOSITION STREAM OLDPOSITION))
                              STREAM OLDPOSITION)
            STREAM OLDPOSITION])
```

⟨**BITBLT!**
```
[LAMBDA (SOURCE SOURCELEFT SOURCEBOTTOM DESTINATION DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT SOURCETYPE
                OPERATION TEXTURE CLIPPINGREGION)                      (* cdl "29-Jul-85 12:09")
    (BITBLT SOURCE SOURCELEFT SOURCEBOTTOM DESTINATION (DSPSCALE.XPOSITION DESTINATIONLEFT DESTINATION)
           (DSPSCALE.YPOSITION DESTINATIONBOTTOM DESTINATION)
           WIDTH HEIGHT SOURCETYPE OPERATION TEXTURE (DSPSCALE.REGION CLIPPINGREGION DESTINATION]
```

⟨**BITMAPBIT!**
```
[LAMBDA (STREAM X Y NEWVALUE)                                          (* cdl "29-Jul-85 12:01")
    (BITMAPBIT STREAM (DSPSCALE.XPOSITION X STREAM)
              (DSPSCALE.YPOSITION Y STREAM)
              NEWVALUE]
```

⟨**BLTSHADE!**
```
[LAMBDA (TEXTURE DESTINATION DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT OPERATION CLIPPINGREGION)
                                                                      (* cdl "29-Jul-85 12:02")
    (BLTSHADE TEXTURE DESTINATION (DSPSCALE.XPOSITION DESTINATIONLEFT DESTINATION)
             (DSPSCALE.YPOSITION DESTINATIONBOTTOM DESTINATION)
             (DSPSCALE.NUMBER WIDTH DESTINATION)
             (DSPSCALE.NUMBER HEIGHT DESTINATION)
             OPERATION
             (DSPSCALE.REGION CLIPPINGREGION DESTINATION]
```

⟨**DSPBACKUP!**
```
[LAMBDA (WIDTH DISPLAYSTREAM)                                          (* cdl "29-Jul-85 12:02")
    (DSPBACKUP (if WIDTH
                   then (DSPSCALE.XPOSITION WIDTH DISPLAYSTREAM))
              DISPLAYSTREAM]
```

⟨**DSPBOTTOMMARGIN!**
```
[LAMBDA (YPOSITION STREAM)                                            (* cdl "29-Jul-85 12:02")
    (DSPUNSCALE.YPOSITION (DSPBOTTOMMARGIN (if YPOSITION
                                              then (DSPSCALE.YPOSITION YPOSITION STREAM))
                                          STREAM)
                         STREAM]
```

⟨**DSPCLIPPINGREGION!**
```
[LAMBDA (REGION STREAM)                                               (* cdl "29-Jul-85 08:41")
    (DSPUNSCALE.REGION (DSPCLIPPINGREGION (if REGION
                                             then (DSPSCALE.REGION REGION STREAM))
                                         STREAM)
                      STREAM]
```

⟨**DRAWBETWEEN!**
```
[LAMBDA (PT1 PT2 WIDTH OPERATION STREAM COLOR DASHING)               (* cdl "29-Oct-85 15:30")
    (DRAWBETWEEN (DSPSCALE.POSITION PT1 STREAM (CAR DSPSCALE.SCRATCHPOINTS))
                (DSPSCALE.POSITION PT2 STREAM (CADR DSPSCALE.SCRATCHPOINTS))
                (DSPSCALE.WIDTH WIDTH STREAM)
                OPERATION STREAM COLOR (DSPSCALE.DASHING DASHING STREAM]
```

⟨**DRAWARC!**
```
[LAMBDA (CENTERX CENTERY RADIUS STARTANGLE NDEGREES BRUSH DASHING STREAM)
                                                                     ; Edited 14-Sep-87 14:34 by cdl

    (DRAWARC (DSPSCALE.XPOSITION CENTERX STREAM)
            (DSPSCALE.YPOSITION CENTERY STREAM)
            (DSPSCALE.NUMBER RADIUS STREAM)
            STARTANGLE NDEGREES (DSPSCALE.BRUSH BRUSH STREAM)
            (DSPSCALE.DASHING DASHING STREAM)
            STREAM]
```

⟨**DRAWCIRCLE!**
```
[LAMBDA (CENTERX CENTERY RADIUS BRUSH DASHING STREAM)                (* cdl "29-Jul-85 12:03")
    (DRAWCIRCLE (DSPSCALE.XPOSITION CENTERX STREAM)
               (DSPSCALE.YPOSITION CENTERY STREAM)
               (DSPSCALE.NUMBER RADIUS STREAM)
               (DSPSCALE.BRUSH BRUSH STREAM)
               (DSPSCALE.DASHING DASHING STREAM)
               STREAM]
```

⟨**DRAWCURVE!**
```
[LAMBDA (KNOTS CLOSED BRUSH DASHING STREAM)                          (* cdl "29-Jul-85 10:04")
    (DRAWCURVE (DSPSCALE.POINTS KNOTS STREAM)
              CLOSED
              (DSPSCALE.BRUSH BRUSH STREAM)
              (DSPSCALE.DASHING DASHING STREAM)
              STREAM]
```

⟨**DRAWELLIPSE!**
　[LAMBDA (CENTERX CENTERY SEMIMINORRADIUS SEMIMAJORRADIUS ORIENTATION BRUSH DASHING STREAM)
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　(* cdl "29-Jul-85 12:03")
　　　　(DRAWELLIPSE (**DSPSCALE.XPOSITION** CENTERX STREAM)
　　　　　　　　(**DSPSCALE.YPOSITION** CENTERY STREAM)
　　　　　　　　(**DSPSCALE.NUMBER** SEMIMINORRADIUS STREAM)
　　　　　　　　(**DSPSCALE.NUMBER** SEMIMAJORRADIUS STREAM)
　　　　　　　　ORIENTATION
　　　　　　　　(**DSPSCALE.BRUSH** BRUSH STREAM)
　　　　　　　　(**DSPSCALE.DASHING** DASHING STREAM)
　　　　　　　　STREAM])

⟨**DRAWLINE!**
　[LAMBDA (X1 Y1 X2 Y2 WIDTH OPERATION STREAM COLOR DASHING)　　(* cdl "29-Oct-85 15:28")
　　　　(DRAWLINE (**DSPSCALE.XPOSITION** X1 STREAM)
　　　　　　　(**DSPSCALE.YPOSITION** Y1 STREAM)
　　　　　　　(**DSPSCALE.XPOSITION** X2 STREAM)
　　　　　　　(**DSPSCALE.YPOSITION** Y2 STREAM)
　　　　　　　(**DSPSCALE.WIDTH** WIDTH STREAM)
　　　　　　　OPERATION STREAM COLOR (**DSPSCALE.DASHING** DASHING STREAM])

⟨**DRAWPOINT!**
　[LAMBDA (X Y BRUSH STREAM OPERATION)　　　　　　　　　　　　; Edited 14-Sep-87 14:36 by cdl
　　　　(DRAWPOINT (**DSPSCALE.XPOSITION** X STREAM)
　　　　　　　(**DSPSCALE.YPOSITION** Y STREAM)
　　　　　　　(**DSPSCALE.BRUSH** BRUSH STREAM)
　　　　　　　STREAM OPERATION])

⟨**DRAWPOLYGON!**
　[LAMBDA (POINTS CLOSED BRUSH DASHING STREAM)　　　　　　　(* cdl "29-Jul-85 10:05")
　　　　(DRAWPOLYGON (**DSPSCALE.POINTS** POINTS STREAM)
　　　　　　　CLOSED
　　　　　　　(**DSPSCALE.BRUSH** BRUSH STREAM)
　　　　　　　(**DSPSCALE.DASHING** DASHING STREAM)
　　　　　　　STREAM])

⟨**DRAWTO!**
　[LAMBDA (X Y WIDTH OPERATION STREAM COLOR DASHING)　　　　(* cdl "29-Oct-85 15:31")
　　　　(DRAWTO (**DSPSCALE.XPOSITION** X STREAM)
　　　　　　　(**DSPSCALE.YPOSITION** Y STREAM)
　　　　　　　(**DSPSCALE.WIDTH** WIDTH STREAM)
　　　　　　　OPERATION STREAM COLOR (**DSPSCALE.DASHING** DASHING STREAM])

⟨**FILLCIRCLE!**
　[LAMBDA (CENTERX CENTERY RADIUS TEXTURE STREAM)　　　　　(* cdl " 7-Feb-86 15:02")
　　　　(FILLCIRCLE (**DSPSCALE.XPOSITION** CENTERX STREAM)
　　　　　　　(**DSPSCALE.YPOSITION** CENTERY STREAM)
　　　　　　　(**DSPSCALE.NUMBER** RADIUS STREAM)
　　　　　　　TEXTURE STREAM])

⟨**FILLPOLYGON!**
　[LAMBDA (KNOTS TEXTURE STREAM)　　　　　　　　　　　　(* cdl "30-Oct-85 07:44")
　　　　(FILLPOLYGON (**DSPSCALE.POINTS** KNOTS STREAM)
　　　　　　　TEXTURE STREAM])

⟨**FONTPROP!**
　[LAMBDA (FONT PROP STREAM)　　　　　　　　　　　　　　; Edited 19-Jul-88 13:18 by cdl
　　　　(SELECTQ PROP
　　　　　　((ASCENT DESCENT HEIGHT)
　　　　　　　　(**DSPUNSCALE.CHARACTER** (FONTPROP FONT PROP)
　　　　　　　　　　　FONT
　　　　　　　　　　　(OR STREAM (IMAGESTREAMP FONT))))
　　　　　　(FONTPROP FONT PROP])

⟨**DSPLEFTMARGIN!**
　[LAMBDA (XPOSITION STREAM)　　　　　　　　　　　　　(* cdl "29-Jul-85 12:05")
　　　　(DSPUNSCALE.XPOSITION (DSPLEFTMARGIN (**if** XPOSITION
　　　　　　　　　　　　　　　　then (**DSPSCALE.XPOSITION** XPOSITION STREAM))
　　　　　　　　　　　　STREAM)
　　　　　　　STREAM])

⟨**DSPLINEFEED!**
　[LAMBDA (DELTAY STREAM)　　　　　　　　　　　　　　(* cdl "29-Jul-85 11:11")
　　　　(**DSPUNSCALE.NUMBER** (DSPLINEFEED (**if** DELTAY
　　　　　　　　　　　　　　　　then (**DSPSCALE.NUMBER** DELTAY STREAM))
　　　　　　　　　　　　STREAM)
　　　　　　　STREAM])

(**GETPOSITION!**
```
  [LAMBDA (STREAM CURSOR)                                    (* cdl "30-Oct-85 08:03")
    (DSPUNSCALE.POSITION (GETPOSITION STREAM CURSOR)
          STREAM])
```

(**MOVETO!**
```
  [LAMBDA (X Y STREAM)                                       (* cdl "29-Jul-85 12:06")
    (MOVETO (DSPSCALE.XPOSITION X STREAM)
            (DSPSCALE.YPOSITION Y STREAM)
            STREAM])
```

(**MOVETOUPPERLEFT!**
```
  [LAMBDA (WINDOW REGION)                                    (* cdl "29-Jul-85 12:10")
    (MOVETOUPPERLEFT WINDOW (if REGION
                                then (DSPSCALE.REGION REGION WINDOW]))
```

(**DSPRIGHTMARGIN!**
```
  [LAMBDA (XPOSITION STREAM)                                 (* cdl "16-Oct-85 16:11")
    (DSPUNSCALE.XPOSITION (DSPRIGHTMARGIN (if XPOSITION
                                              then (DSPSCALE.XPOSITION XPOSITION STREAM))
                              STREAM)
          STREAM])
```

(**DSPSCALE!**
```
  [LAMBDA (SCALE STREAM)                                     (* cdl "23-Apr-86 09:40")
    (if (NOT (type? STREAM STREAM))
        then (SETQ STREAM (GETSTREAM STREAM)))
    (PROG1 (OR (STREAMPROP STREAM 'SCALE)
               (DSPSCALE NIL STREAM))
        [if SCALE
            then (STREAMPROP STREAM 'SCALE SCALE)
                 (STREAMPROP STREAM 'SCALED T)
                 (LET [(RATIO (STREAMPROP STREAM 'RATIO]
                      [if (NULL RATIO)
                          then (STREAMPROP STREAM 'RATIO (SETQ RATIO (create CONVERT
                                                                             SOURCE _ 1]
                      (with CONVERT RATIO (SETQ DESTINATION (TIMES SCALE (DSPSCALE NIL STREAM]])])
```

(**RELDRAWTO!**
```
  [LAMBDA (DX DY WIDTH OPERATION STREAM COLOR DASHING)       (* cdl "29-Oct-85 15:31")
    (RELDRAWTO (DSPSCALE.NUMBER DX STREAM)
               (DSPSCALE.NUMBER DY STREAM)
               (DSPSCALE.WIDTH WIDTH STREAM)
               OPERATION STREAM COLOR (DSPSCALE.DASHING DASHING STREAM])
```

(**RELMOVETO!**
```
  [LAMBDA (DX DY STREAM)                                     (* cdl "30-Oct-85 07:43")
    (RELMOVETO (DSPSCALE.NUMBER DX STREAM)
               (DSPSCALE.NUMBER DY STREAM)
               STREAM])
```

(**SCALEDBITBLT!**
```
  [LAMBDA (SOURCE SOURCELEFT SOURCEBOTTOM DESTINATION DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT SOURCETYPE
                  OPERATION TEXTURE CLIPPINGREGION SCALE)    (* cdl "29-Jul-85 12:13")
    (SCALEDBITBLT SOURCELEFT SOURCEBOTTOM DESTINATION (DSPSCALE.XPOSITION DESTINATIONLEFT DESTINATION)
                  (DSPSCALE.YPOSITION DESTINATIONBOTTOM DESTINATION)
                  WIDTH HEIGHT SOURCETYPE OPERATION TEXTURE (DSPSCALE.REGION CLIPPINGREGION DESTINATION)
                  SCALE])
```

(**STRINGREGION!**
```
  [LAMBDA (STR STREAM PRIN2FLG RDTBL)                        (* cdl " 2-May-86 14:05")
    (LET ((REGION (STRINGREGION STR STREAM PRIN2FLG RDTBL)))
         (DSPUNSCALE.REGION REGION STREAM REGION])
```

(**STRINGWIDTH!**
```
  [LAMBDA (STR FONT FLG RDTBL STREAM)                        ; Edited 19-Jul-88 13:18 by cdl
    (DSPUNSCALE.CHARACTER (STRINGWIDTH STR FONT FLG RDTBL)
          FONT
          (OR STREAM (IMAGESTREAMP FONT])
```

(**DSPSPACEFACTOR!**
```
  [LAMBDA (FACTOR STREAM)                                    (* cdl "29-Jul-85 11:12")
    (DSPUNSCALE.NUMBER (DSPSPACEFACTOR (if FACTOR
                                          then (DSPSCALE.NUMBER FACTOR STREAM))
                              STREAM)
          STREAM])
```

(**DSPTRANSLATE!**
```
  [LAMBDA (Tx.OR.POSITION Ty.OR.STREAM STREAM.OR.NIL)                    ; Edited 19-Jul-88 09:03 by cdl
    (if (POSITIONP Tx.OR.POSITION)
        then                                                  (* Koto Compatibility)
              (STREAMPROP (GETSTREAM Ty.OR.STREAM)
                   'TRANSLATE Tx.OR.POSITION)
      else (STREAMPROP (GETSTREAM STREAM.OR.NIL)
                   'TRANSLATE
                   (CREATEPOSITION Tx.OR.POSITION Ty.OR.STREAM])
```

(**DSPTOPMARGIN!**
```
  [LAMBDA (YPOSITION STREAM)                                  (* cdl "29-Jul-85 12:00")
    (DSPUNSCALE.YPOSITION (DSPTOPMARGIN (if YPOSITION
                                           then (DSPSCALE.YPOSITION YPOSITION STREAM))
                                        STREAM)
          STREAM])
```

(**DSPUNITS!**
```
  [LAMBDA (UNITS STREAM)                                      (* cdl "23-Apr-86 09:40")
    (if (NOT (type? STREAM STREAM))
        then (SETQ STREAM (GETSTREAM STREAM)))
    (PROG1 (STREAMPROP STREAM 'UNITS)
         [if UNITS
             then (STREAMPROP STREAM 'UNITS UNITS)
                  (STREAMPROP STREAM 'SCALED T)
                  (LET [(RATIO (STREAMPROP STREAM 'RATIO]
                       [if (NULL RATIO)
                           then (STREAMPROP STREAM 'RATIO (SETQ RATIO (create CONVERT
                                                                         DESTINATION _ 1]
                       (with CONVERT RATIO (SETQ SOURCE UNITS])])
```

(**DSPXOFFSET!**
```
  [LAMBDA (XOFFSET DISPLAYSTREAM)                             (* cdl "29-Jul-85 11:12")
    (DSPUNSCALE.NUMBER (DSPXOFFSET (if XOFFSET
                                      then (DSPSCALE.NUMBER XOFFSET DISPLAYSTREAM))
                                   DISPLAYSTREAM)
          DISPLAYSTREAM])
```

(**DSPXPOSITION!**
```
  [LAMBDA (XPOSITION STREAM)                                  (* cdl "29-Jul-85 12:00")
    (DSPUNSCALE.XPOSITION (DSPXPOSITION (if XPOSITION
                                           then (DSPSCALE.XPOSITION XPOSITION STREAM))
                                        STREAM)
          STREAM])
```

(**DSPYOFFSET!**
```
  [LAMBDA (YOFFSET DISPLAYSTREAM)                             (* cdl "29-Jul-85 11:59")
    (DSPUNSCALE.NUMBER (DSPYOFFSET (if YOFFSET
                                      then (DSPSCALE.NUMBER YOFFSET DISPLAYSTREAM))
                                   DISPLAYSTREAM)
          DISPLAYSTREAM])
```

(**DSPYPOSITION!**
```
  [LAMBDA (YPOSITION STREAM)                                  (* cdl "29-Jul-85 11:59")
    (DSPUNSCALE.YPOSITION (DSPYPOSITION (if YPOSITION
                                           then (DSPSCALE.YPOSITION YPOSITION STREAM))
                                        STREAM)
          STREAM])
```
)

          (* * Low Level Scaling Functions)

(DEFINEQ

(**DSPSCALE.BRUSH**
```
  [LAMBDA (BRUSH STREAM)                                      (* cdl "29-Oct-85 15:29")
    (if (NULL BRUSH)
        then (create BRUSH
                   BRUSHSHAPE _ 'ROUND
                   BRUSHSIZE _ (DSPSCALE.WIDTH 1 STREAM) smashing DSPSCALE.SCRATCHBRUSH)
      elseif (LISTP BRUSH)
        then (with BRUSH BRUSH (create BRUSH
                                     BRUSHCOLOR _ BRUSHCOLOR
                                     BRUSHSHAPE _ BRUSHSHAPE
                                     BRUSHSIZE _ (DSPSCALE.WIDTH BRUSHSIZE STREAM) smashing
                                                                DSPSCALE.SCRATCHBRUSH)
              )
```

```
          elseif (NUMBERP BRUSH)
            then (DSPSCALE.WIDTH BRUSH STREAM)
          else BRUSH])
```

(**DSPSCALE.DASHING**
```
   [LAMBDA (DASHING STREAM)                                      ; Edited 19-Jul-88 10:21 by cdl
     (if (LISTP DASHING)
         then [SCRATCHLIST DSPSCALE.SCRATCHDASHING (for WIDTH in DASHING do (ADDTOSCRATCHLIST (DSPSCALE.WIDTH
                                                                                                WIDTH STREAM]
          elseif (NUMBERP DASHING)
            then (DSPSCALE.WIDTH DASHING STREAM)
          else DASHING])
```

(**DSPSCALE.POINTS**
```
   [LAMBDA (KNOTS STREAM)                                        ; Edited 19-Jul-88 09:52 by cdl
     (SCRATCHLIST DSPSCALE.SCRATCHLIST (bind (KNOTSLST _ DSPSCALE.SCRATCHPOINTS) for KNOT in KNOTS
                                        do (ADDTOSCRATCHLIST (DSPSCALE.POSITION
                                              KNOT STREAM (if KNOTSLST
                                                              then (pop KNOTSLST)
                                                            else (push DSPSCALE.SCRATCHPOINTS
                                                                       (create POSITION))
                                                                 (CAR DSPSCALE.SCRATCHPOINTS])
```

(**DSPSCALE.REGION**
```
   [LAMBDA (REGION STREAM SMASH)                                 (* cdl "28-Oct-85 09:00")
     (if (type? REGION REGION)
         then (with REGION REGION (create REGION
                                      LEFT _ (DSPSCALE.XPOSITION LEFT STREAM)
                                      BOTTOM _ (DSPSCALE.YPOSITION BOTTOM STREAM)
                                      WIDTH _ (DSPSCALE.NUMBER WIDTH STREAM)
                                      HEIGHT _ (DSPSCALE.NUMBER HEIGHT STREAM) smashing (OR SMASH
                                                                                           DSPSCALE.SCRATCHREGION
                                                                                           )))
          else REGION])
```

(**DSPSCALE.NUMBER**
```
   [LAMBDA (VALUE STREAM)                                        (* cdl "23-Apr-86 09:10")
     (if (NUMBERP VALUE)
         then (if (NOT (type? STREAM STREAM))
                  then (SETQ STREAM (GETSTREAM STREAM)))
              (if [FLOATP (SETQ VALUE (if (GETSTREAMPROP STREAM 'SCALED)
                                          then (with CONVERT (GETSTREAMPROP STREAM 'RATIO)
                                                    (QUOTIENT (TIMES VALUE DESTINATION)
                                                              SOURCE))
                                        else (TIMES (IMAGEOP 'IMSCALE STREAM STREAM)
                                                    VALUE]
                  then (FIXR VALUE)
                else VALUE)
          else VALUE])
```

(**DSPSCALE.POSITION**
```
   [LAMBDA (POSITION STREAM SMASH)                               (* cdl "29-Jul-85 11:57")
     (with POSITION POSITION (create POSITION
                                 XCOORD _ (DSPSCALE.XPOSITION XCOORD STREAM)
                                 YCOORD _ (DSPSCALE.YPOSITION YCOORD STREAM) smashing (OR SMASH
                                                                                        DSPSCALE.SCRATCHPOSITION
                                                                                        ])
```

(**DSPSCALE.XPOSITION**
```
   [LAMBDA (VALUE STREAM)                                        (* cdl " 1-Nov-85 08:47")
     (if (NUMBERP VALUE)
         then (if (NOT (type? STREAM STREAM))
                  then (SETQ STREAM (GETSTREAM STREAM)))
              [LET [(TRANSLATE (GETSTREAMPROP STREAM 'TRANSLATE]
                   (if TRANSLATE
                       then (with POSITION TRANSLATE (add VALUE XCOORD]
              (DSPSCALE.NUMBER VALUE STREAM)
          else VALUE])
```

(**DSPSCALE.YPOSITION**
```
   [LAMBDA (VALUE STREAM)                                        (* cdl " 1-Nov-85 08:47")
     (if (NUMBERP VALUE)
         then (if (NOT (type? STREAM STREAM))
                  then (SETQ STREAM (GETSTREAM STREAM)))
              [LET [(TRANSLATE (GETSTREAMPROP STREAM 'TRANSLATE]
                   (if TRANSLATE
                       then (with POSITION TRANSLATE (add VALUE YCOORD]
              (DSPSCALE.NUMBER VALUE STREAM)
          else VALUE])
```

(**DSPSCALE.WIDTH**
  [LAMBDA (WIDTH STREAM)   (* cdl "29-Oct-85 15:27")
    (**if** (ZEROP (SETQ WIDTH (**DSPSCALE.NUMBER** WIDTH STREAM)))
        then 1
      else WIDTH])

(**DSPUNSCALE.REGION**
  [LAMBDA (REGION STREAM SMASH)   (* cdl " 2-May-86 14:04")
    (**if** (**type?** REGION REGION)
        then (**with** REGION REGION (**create** REGION
                                 LEFT _ (DSPUNSCALE.XPOSITION LEFT STREAM)
                                 BOTTOM _ (DSPUNSCALE.YPOSITION BOTTOM STREAM)
                                 WIDTH _ (**DSPUNSCALE.NUMBER** WIDTH STREAM)
                                 HEIGHT _ (**DSPUNSCALE.NUMBER** HEIGHT STREAM) **smashing** (OR SMASH
                                                                          DSPSCALE.SCRATCHREGION
                                                                          )))
      else REGION])

(**DSPUNSCALE.POSITION**
  [LAMBDA (POSITION STREAM SMASH)   (* cdl "17-Sep-85 14:21")
    (**with** POSITION POSITION (**create** POSITION
                              XCOORD _ (DSPUNSCALE.XPOSITION XCOORD STREAM)
                              YCOORD _ (DSPUNSCALE.YPOSITION YCOORD STREAM) **smashing** (OR SMASH
                                                                       DSPSCALE.SCRATCHPOSITION
                                                                       ])

(**DSPUNSCALE.NUMBER**
  [LAMBDA (VALUE STREAM OFFSET)   (* cdl "27-Jan-87 11:32")
    (**if** (NUMBERP VALUE)
        then (**if** (NOT (**type?** STREAM STREAM))
                 then (SETQ STREAM (GETSTREAM STREAM)))
             [SETQ VALUE (**if** (GETSTREAMPROP STREAM 'SCALED)
                            then (**with** CONVERT (GETSTREAMPROP STREAM 'RATIO)
                                     (QUOTIENT (TIMES VALUE SOURCE)
                                              DESTINATION))
                          else (QUOTIENT VALUE (IMAGEOP 'IMSCALE STREAM STREAM]
             [**if** OFFSET
                 then (LET [(TRANSLATE (GETSTREAMPROP STREAM 'TRANSLATE]
                           (**if** TRANSLATE
                               then (**with** POSITION TRANSLATE (SELECTQ OFFSET
                                                       (X (SETQ VALUE (DIFFERENCE VALUE XCOORD)))
                                                       (Y (SETQ VALUE (DIFFERENCE VALUE YCOORD)))
                                                       NIL]
             (**if** (FLOATP VALUE)
                 then (FIXR VALUE)
               else VALUE)
      else VALUE])

(**DSPUNSCALE.CHARACTER**
  [LAMBDA (WIDTH FONT STREAM)   (* cdl "23-Apr-86 09:11")
    (LET (CONVERT VALUE)
         (**if** (NUMBERP WIDTH)
             then (**if** [FLOATP (SETQ VALUE (**if** (AND STREAM (OR (**type?** STREAM STREAM)
                                                           (SETQ STREAM (GETSTREAM STREAM)))
                                                  (GETSTREAMPROP STREAM 'SCALED))
                                             then (**with** CONVERT (GETSTREAMPROP STREAM 'RATIO)
                                                      (QUOTIENT (TIMES WIDTH SOURCE)
                                                               DESTINATION))
                                           else (QUOTIENT WIDTH (OR (**with** FONTDESCRIPTOR FONT FONTSCALE)
                                                             (IMAGEOP 'IMSCALE STREAM STREAM]
                          then (FIXR VALUE)
                        else VALUE)
           else WIDTH])
)

(DECLARE%: EVAL@COMPILE

(PUTPROPS **DSPUNSCALE.XPOSITION MACRO** ((VALUE STREAM)
                                        (**DSPUNSCALE.NUMBER** VALUE STREAM 'X)))

(PUTPROPS **DSPUNSCALE.YPOSITION MACRO** ((VALUE STREAM)
                                        (**DSPUNSCALE.NUMBER** VALUE STREAM 'Y)))
)

          (* * etc.)

(DECLARE%: DONTCOPY

(DECLARE%: EVAL@COMPILE

(RECORD SCALEDIMAGEDATA (IMAGESTREAM))

(RECORD CONVERT (SOURCE . DESTINATION))
)
)

(ADDTOVAR **IMAGESTREAMTYPES** (SCALED (OPENSTREAM OPENIMAGESTREAM.SCALED)))

(RPAQ? **\SCALEDIMAGEOPS** NIL)

(RPAQ? **\NULLFDEV** NIL)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS \SCALEDIMAGEOPS \NULLFDEV)
)

(RPAQ? **DSPSCALE.SCRATCHBRUSH** '(ROUND 1 NIL))

(RPAQ? **DSPSCALE.SCRATCHREGION** (create REGION))

(RPAQ? **DSPSCALE.SCRATCHPOSITION** (create POSITION))

(RPAQ? **DSPSCALE.SCRATCHLIST** (to 10 collect))

(RPAQ? **DSPSCALE.SCRATCHDASHING** (to 10 collect))

(RPAQ? **DSPSCALE.SCRATCHPOINTS** (to 10 collect (create POSITION)))

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS DSPSCALE.SCRATCHBRUSH DSPSCALE.SCRATCHREGION DSPSCALE.SCRATCHPOSITION DSPSCALE.SCRATCHLIST
       DSPSCALE.SCRATCHDASHING DSPSCALE.SCRATCHPOINTS)
)

(MOVD? 'DSPUNITS! 'DSPUNITS)

(**INITSCALEDIMAGESTREAM**)

FUNCTION INDEX

VARIABLE INDEX

RECORD INDEX

MACRO INDEX