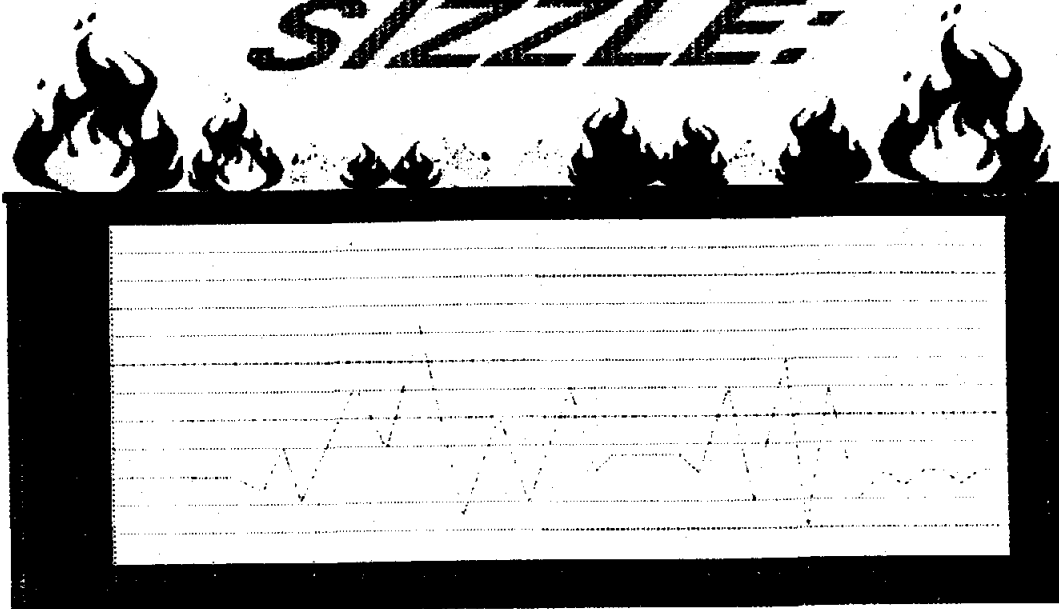


CHARTS THAT *SIZZLE*



SAS/QC®

PROC SHEWHART

Donald A. Rowe
National Steel/Midwest Division

*SAS, SAS/QC, SAS/GRAPH are registered
trademarks of SAS Institute Inc., Cary, NC, USA.*

IBM is a registered trademark and MVS/ESA
are trademarks of International Business
Machines Corporation

Zeta887 is a product of Bruning Computer
Graphics, A Division of AM International.

BASIC CONTROL CHART PROGRAM EXAMPLE (NON-GRAPHIC)

NOTE:

MAINFRAME FILE ALLOCATION STATEMENTS HAVE BEEN DELETED

```
OPTIONS DEVICE=IBM3287F /* LINE PRINTER */;
DATA CONTROL /* CONTROL LIMIT DATA */;
INFILE INPUT1;
INPUT IDENT $1-8 STDB 13-16 RB1 18-21 RB2 23-26 RB3 28-31;
N=_N_;

DATA NUMBERS /* DATA TO PLOT ON CHART */;
INFILE INPUT2 /* CURRENT MONTH DATA */;
INPUT IDENT $1-8 STDB 13-16 RB1 18-21 RB2 23-26 RB3 28-31;
N=_N_;

DATA DOTHIS1 /* FORMATS DATA FOR PROC SHEWHART */;
SET CONTROL /* AND CALCULATES DEVIATION FROM */;
KEEP N DIFF IDENT /* STANDARD */;
DIFF=RB1-STDB; OUTPUT;
DIFF=RB2-STDB; OUTPUT;
DIFF=RB3-STDB; OUTPUT;

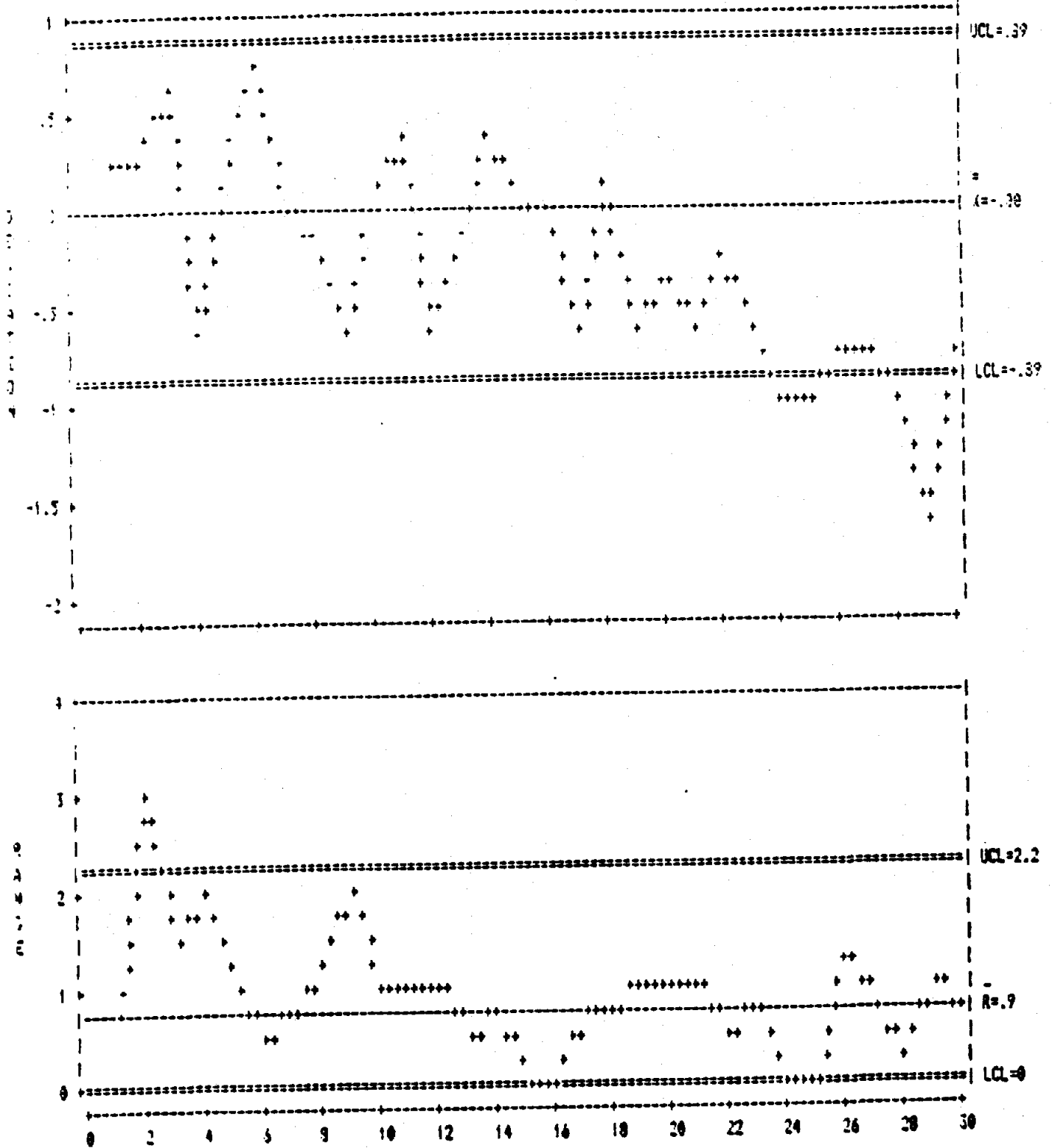
DATA DOTHIS2 /* SAME AS ABOVE BUT FOR CURRENT */;
SET NUMBERS /* MONTH */;
KEEP N DIFF IDENT;
DIFF=RB1-STDB; OUTPUT;
DIFF=RB2-STDB; OUTPUT;
DIFF=RB3-STDB; OUTPUT;

PROC SHEWHART DATA=DOTHIS1 /* CALCULATES AND SAVES PRIOR */;
XRCHART DIFF*N / /* MONTH'S CONTROL LIMITS */;
NOCHART
OUTLIMITS=TEMPL;

PROC SHEWHART DATA=DOTHIS2 LIMITS=TEMPL /* PRINTS CONTROL */;
XRCHART DIFF*N / /* CHART */;
READLIMITS
NOXLABEL
SPLIT='/';
LABEL N = ' '
DIFF='DEVIATION/RANGE';
TITLE1 'TEST EQUIPMENT EXAMPLE';
TITLE2 'STANDARDIZATION DEVIATION';
TITLE3 'FEBRUARY 1991';
```

TEST EQUIPMENT EXAMPLE
STANDARDIZATION DEVIATION
FEBRUARY 1991

3 SIGMA
FOR N=3:



SUBGROUP SIZES: N=3

BASIC CONTROL CHART PROGRAM EXAMPLE (GRAPHICS)

NOTE:

MAINFRAME FILE ALLOCATION STATEMENTS HAVE BEEN DELETED

GOPTIONS DEVICE=ZETA887 NODISPLAY GSFMODE=APPEND GSFNAME=GRAFOUT
NOTEXT82 ROTATE;

```
DATA CONTROL                      /* CONTROL LIMIT DATA */;
INFILE INPUT1;
INPUT IDENT $1-8 STDB 13-16 RB1 18-21 RB2 23-26 RB3 28-31;
N=_N_;

DATA NUMBERS                      /* DATA TO PLOT ON CHART */;
INFILE INPUT2                    /* CURRENT MONTH DATA */;
INPUT IDENT $1-8 STDB 13-16 RB1 18-21 RB2 23-26 RB3 28-31;
N=_N_;

DATA DOTHIS1                      /* FORMATS DATA FOR PROC SHEWHART */;
SET CONTROL                      /* AND CALCULATES DEVIATION FROM */;
KEEP N DIFF IDENT               /* STANDARD */;
DIFF=RB1-STDB; OUTPUT;
DIFF=RB2-STDB; OUTPUT;
DIFF=RB3-STDB; OUTPUT;

DATA DOTHIS2                      /* SAME AS ABOVE BUT FOR CURRENT */;
SET NUMBERS                     /* MONTH */;
KEEP N DIFF IDENT;
DIFF=RB1-STDB; OUTPUT;
DIFF=RB2-STDB; OUTPUT;
DIFF=RB3-STDB; OUTPUT;

PROC SHEWHART DATA=DOTHIS1      /* CALCULATES AND SAVES PRIOR */;
XRCHART DIFF*N /                 /* MONTH'S CONTROL LIMITS */;
NOCHART
OUTLIMITS=TEMPL;

PROC SHEWHART DATA=DOTHIS2;     /* CALCULATES VALUES FOR */;
XRCHART DIFF*N /                 /* CURRENT MONTH FOR */;
NOCHART                          /* ANNOTATE PROC */;
OUTHISTORY=TEMPH;
```

```

DATA LABELS1 (KEEP = X Y XSYS YSYS TEXT POSITION STYLE ANGLE);
  SET DOTHIS2;
    XSYS='2'; YSYS='2';
    POSITION = '6';
    WHEN     = 'A';
    STYLE     = 'SIMPLEX';
    X=N;
    Y=.9; ANGLE=90; TEXT= LEFT(PUT(IDENT,F8.0)); OUTPUT;

DATA LABELS2 (KEEP = X Y XSYS YSYS TEXT POSITION STYLE ANGLE);
  SET TEMPH;
    XSYS='2'; YSYS='2';
    POSITION = '2';
    WHEN     = 'A';
    STYLE     = 'SIMPLEX';
    X=N;
    Y=(DIFFX); TEXT= LEFT(PUT(DIFFX,F4.1)); OUTPUT;

DATA LABELS;
  SET LABELS1 LABELS2;

DATA RLABELS (KEEP=X Y XSYS YSYS TEXT POSITION STYLE);
  SET TEMPH;
    XSYS= '2'; YSYS = '2';
    POSITION = '2';
    STYLE = 'SIMPLEX';
    X=N; Y=DIFFR; TEXT = LEFT(PUT(DIFFR,F3.1)); OUTPUT;

PROC SHEWHART DATA=DOTHIS2 LIMITS=TEMPL GRAPHICS;
  XRCHART DIFF*N /
    READLIMITS
    NOXLABEL
    CCONNECT = GREEN
    CLIMITS  = RED
    CAXES    = BLACK
    COUT     = ORANGE
    ANNO     = LABELS
    ANNO2    = RLABELS
    SPLIT='//';
  SYMBOL V=STAR C=GREEN;
  LABEL N = ' '
    DIFF='DEVIATION/RANGE';
  TITLE1 C=BLACK F=TRIPLEX H=2 'TEST EQUIPMENT EXAMPLE';
  TITLE2 C=BLUE F=TRIPLEX H=2 'STANDARDIZATION DEVIATION';
  TITLE3 C=RED F=TRIPLEX H=2 'FEBRUARY 1991';

```

TEST EQUIPMENT EXAMPLE STANDARDIZATION DEVIATION FEBRUARY 1991

