

AD/A-002 861

**A STRUCTURAL WEIGHT ESTIMATION PROGRAM  
(SWEEP) FOR AIRCRAFT. VOLUME VI - WING  
AND EMPENNAGE MODULE. APPENDIX D:  
PROGRAM FLOW CHARTS, OVERLAY (18,0)**

**G. Hayase**

**Rockwell International Corporation**

**Prepared for:**

**Aeronautical Systems Division**

**June 1974**

**DISTRIBUTED BY:**

**NTIS**

**National Technical Information Service  
U. S. DEPARTMENT OF COMMERCE**

**Best  
Available  
Copy**

| REPORT DOCUMENTATION PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       | READ INSTRUCTIONS<br>BEFORE COMPLETING FORM                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------|
| 1. REPORT NUMBER<br>ASD/XR 74-10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. GOVT ACCESSION NO. | 3. RECIPIENT'S CATALOG NUMBER<br>AD/A-002861                                           |
| 4. TITLE (and Subtitle)<br>A Structural Weight Estimation Program (SWEEP)<br>for Aircraft - Volume VI - Wing and Empennage<br>Module                                                                                                                                                                                                                                                                                                                                                                                                                    |                       | 5. TYPE OF REPORT & PERIOD COVERED                                                     |
| 7. AUTHOR(s)<br>G. Hayase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       | 6. PERFORMING ORG. REPORT NUMBER                                                       |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS<br>Rockwell International Corp, L.A. Aircraft Div<br>Los Angeles International Airport<br>Los Angeles, California 90009                                                                                                                                                                                                                                                                                                                                                                                     |                       | 8. CONTRACT OR GRANT NUMBER(s)<br>F33615-71-C-1922                                     |
| 11. CONTROLLING OFFICE NAME AND ADDRESS<br>Deputy for Development Planning<br>Air Force Systems Command<br>Wright-Patterson Air Force Base, Ohio                                                                                                                                                                                                                                                                                                                                                                                                        |                       | 10. PROGRAM ELEMENT, PROJECT, TASK<br>AREA & WORK UNIT NUMBERS<br>FX2326-71-01876/C093 |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       | 12. REPORT DATE<br>June 1974                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       | 13. NUMBER OF PAGES<br>233                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       | 15. SECURITY CLASS. (of this report)<br>Unclassified                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       | 15a. DECLASSIFICATION/DOWNGRADING<br>SCHEDULE                                          |
| 16. DISTRIBUTION STATEMENT (of this Report)<br><br>Approved for public release; distribution unlimited.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                                                                                        |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)<br><br>D D C<br>JAN 6 1975<br>RECEIVED                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |                                                                                        |
| 18. SUPPLEMENTARY NOTES<br><br>Reproduced from<br>best available copy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                                                                                        |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)<br>weight estimation, structural weights, integrated computer programs,<br>preliminary weight estimation, first-order weight estimations, aircraft<br>structure weights, aircraft structural weight optimization, flutter<br>optimization program, structural synthesis                                                                                                                                                                                              |                       |                                                                                        |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Three computer programs were written with the objective of predicting<br>the structural weight of aircraft through analytical methods. The first<br>program, the structural weight estimation program (SWEEP), is a completely<br>integrated program including routines for airloads, loads spectra, skin<br>temperatures, material properties, flutter stiffness requirements, fatigue<br>life, structural sizing, and for weight estimation of each of the major |                       |                                                                                        |

**20. ABSTRACT (CONTINUED)**

aircraft structural components. The program produces first-order weight estimates and indicates trends when parameters are varied. Fighters, bombers, and cargo aircraft can be analyzed by the program. The program operates within 100,000 octal units on the Control Data Corporation 6600 computer. Two stand-alone programs operating within 100,000 octal units were also developed to provide optional data sources for SWEEP. These include (1) the flexible airloads program to assess the effects of flexibility on lifting surface airloads, and (2) the flutter optimization program to optimize the stiffness distribution required for lifting surface flutter prevention.

→ The final report is composed of 11 volumes. This volume (volume VI) contains the methods and program description for the wing and empennage module of SWEEP. Program listings and flow charts are included in the appendix to this volume.

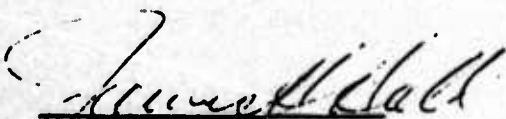


|                                 |                                                   |
|---------------------------------|---------------------------------------------------|
| ACCESSION FOR                   |                                                   |
| NTIS                            | White Section <input checked="" type="checkbox"/> |
| DDC                             | Bull Section <input type="checkbox"/>             |
| EXAMINANCES                     | <input type="checkbox"/>                          |
| JUSTIFICATION                   |                                                   |
| BY                              |                                                   |
| DISTRIBUTION/AVAILABILITY CODES |                                                   |
| Dist.                           | RETAIL, REG. OR SPECIAL                           |
| A                               |                                                   |

## NOTICES

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Publication of this technical report does not constitute Air Force approval of the report's findings or conclusions. It is published only for the exchange and stimulation of ideas.



**JAMES H. BALL, Colonel, USAF**  
Deputy for Development Planning

# TABLE OF CONTENTS

| Section                                                                                               | Page |
|-------------------------------------------------------------------------------------------------------|------|
| INTRODUCTION TO VOLUME VI                                                                             | 27   |
| <u>BOOK 1 - TECHNICAL DISCUSSION, SECTIONS I AND II</u>                                               | 29   |
| I MODULE DESCRIPTION                                                                                  | 31   |
| General Description                                                                                   | 31   |
| Analysis Description                                                                                  | 40   |
| Analysis Options                                                                                      | 49   |
| Surface Types                                                                                         | 49   |
| General Data Processing Option                                                                        | 49   |
| Torque-Box Design Option                                                                              | 52   |
| Design Data Generation Option for the<br>Flutter Optimization and Flexible Loads<br>Analysis Programs | 52   |
| Design Features                                                                                       | 54   |
| Surface Geometry                                                                                      | 54   |
| Nonlinear Planforms                                                                                   | 54   |
| Cross-Sections                                                                                        | 54   |
| Torque-Box Description                                                                                | 56   |
| Surface Configuration                                                                                 | 57   |
| Variable-Sweep Wing Designs                                                                           | 57   |
| T-Tail Empennage Designs                                                                              | 57   |
| Leading and Trailing Edge Structures                                                                  | 58   |
| Miscellaneous Structure and Deadweight<br>Mass Items                                                  | 59   |
| Secondary Structure                                                                                   | 59   |
| Tip Structure                                                                                         | 59   |
| Internal Fuel                                                                                         | 59   |
| External Concentrated Mass Items                                                                      | 60   |
| Miscellaneous Internal Contents                                                                       | 60   |
| Structural Design Data                                                                                | 61   |
| Deadweight                                                                                            | 61   |
| Torsional Flutter Requirements                                                                        | 61   |
| Design Loads                                                                                          | 62   |

| Section                                          | Page |
|--------------------------------------------------|------|
| Torque-box Design Synthesis                      | 63   |
| Construction Concepts                            | 63   |
| Torque-box Analysis Constants                    | 64   |
| Ultimate Allowable Stresses                      | 64   |
| Weight Calibration Factors                       | 65   |
| Torque-box Structure                             | 65   |
| Pivot Structure                                  | 65   |
| Center-Section Structure                         | 65   |
| Leading Edge Structure                           | 65   |
| Trailing Edge Structure                          | 66   |
| Tip Structure                                    | 66   |
| Secondary Structure                              | 66   |
| Module Structure                                 | 67   |
| Module Execution                                 | 67   |
| Execution of Metallic Torque-box Design Overlays | 67   |
| Module Storage Arrangement                       | 81   |
| Blank Common                                     | 81   |
| Module/Overlay Data Requirements                 | 81   |
| Blank Common Initialization                      | 81   |
| Input Data                                       | 83   |
| Output Data                                      | 83   |
| Mass Storage File Records                        | 83   |
| Module Core Maps                                 | 97   |
| Labeled Common Arrays                            | 97   |
| Blank Common Arrays                              | 97   |

# TABLE OF CONTENTS

| Section                                         | Page |
|-------------------------------------------------|------|
| VI METHODOLOGY                                  | 257  |
| Introduction                                    | 257  |
| Lifting Surface Geometry                        | 263  |
| Planform Geometry                               | 263  |
| Cross-Sectional Geometry                        | 268  |
| Lifting Surface Design Data                     | 274  |
| Leading and Trailing Edge Structures            | 274  |
| Nonstructural Wing Deadweight                   | 280  |
| Flutter Stiffness Requirements                  | 284  |
| Design Airloads                                 | 291  |
| Material Properties                             | 293  |
| Initial Inertia Loads and Couple Arm Estimation | 294  |
| Structural Synthesis                            | 297  |
| Cover Design Loads                              | 297  |
| Torque-Box Synthesis                            | 299  |
| Metallic Torque-Box Analysis                    | 300  |
| Cover Synthesis                                 | 307  |
| Intermediate Support Structure                  | 315  |
| Bending and Torsional Stiffness                 | 321  |
| Advanced Composite Torque-Box Analysis          | 322  |
| General Behavior of Composite Laminates         | 322  |
| Governing Relationships                         | 324  |
| Temperature Dependence of Properties            | 330  |
| Stability                                       | 331  |
| Stringer Columns                                | 337  |
| Full-Depth Honeycomb Sandwich                   | 340  |

| Section                                                   | Page |
|-----------------------------------------------------------|------|
| General Procedures                                        | 343  |
| Multispar Analysis                                        | 349  |
| Multirib Analysis                                         | 351  |
| Bending and Torsional Stiffness                           | 356  |
| Pivot Structure Synthesis                                 | 357  |
| Weight Analysis                                           | 358  |
| Torque-Box Weight Analysis                                | 358  |
| Leading and Trailing Edge Weight Analysis                 | 361  |
| Estimation Equation Form                                  | 362  |
| Fixed Leading Edge Structure                              | 365  |
| Leading Edge Control Devices                              | 366  |
| Fixed Trailing Edge Structure                             | 368  |
| Trailing Edge Control Devices                             | 369  |
| Basic Module Output                                       | 373  |
| Design Data Generation Option                             | 378  |
| General Description                                       | 378  |
| Program Description                                       | 378  |
| Mass Properties and Design Data                           |      |
| Processing Requirements                                   | 380  |
| Structural Synthesis/Weight Analysis                      |      |
| Reference System                                          | 383  |
| Data for Flexible Loads Analysis Program                  | 385  |
| Data for Flutter Optimization Program                     | 397  |
| <u>BOOK 2 - TECHNICAL DISCUSSION, SECTIONS III AND IV</u> | 415  |
| III INPUT DATA PROCESSING AND GEOMETRY ANALYSIS           | 417  |
| General Description                                       | 417  |
| Overlay (8,0) Input Data                                  | 417  |
| Overlay (8,0) Output Data                                 | 422  |
| Overlay Core Maps                                         | 424  |
| Variable Data Subarrays DLE, DTE, and DTC                 | 434  |
| TXV Array                                                 | 454  |
| YC and YTC Arrays, Overlay (8,0)                          | 486  |
| Output Data Arrays TD and TS                              | 492  |

| Section |                                                                                                    | Page |
|---------|----------------------------------------------------------------------------------------------------|------|
|         | Subroutine Descriptions                                                                            | 503  |
|         | Program ØLAY8                                                                                      | 503  |
|         | Subroutine CCNTL                                                                                   | 503  |
|         | Subroutine CASE                                                                                    | 510  |
|         | Subroutine GEØMW                                                                                   | 513  |
|         | Subroutine GEØMC                                                                                   | 521  |
|         | Subroutine VSGEØM                                                                                  | 524  |
|         | Subroutine TBWDC                                                                                   | 527  |
|         | Subroutine ABØXC                                                                                   | 534  |
|         | Subroutine DMAX                                                                                    | 537  |
|         | Subroutine CAERØ                                                                                   | 540  |
|         | Subroutine SWPXP                                                                                   | 542  |
|         | Subroutine PRTG                                                                                    | 545  |
|         | Subroutine GCØP                                                                                    | 550  |
| IV      | SUBROUTINE REFERENCE TABLES FOR OVERLAYS (9,0), (10,0), (14,0), (15,0), (16,0), (17,0), and (18,0) | 552  |
|         | <u>BOOK 3 - TECHNICAL DISCUSSION, SECTION V</u>                                                    | 767  |
| V       | CORE MAPS FOR OVERLAYS (9,0), (10,0), (14,0), (15,0), (16,0), (17,0), and (18,0)                   | 769  |
|         | REFERENCES                                                                                         | 1097 |

| Section                                                                                    | Page |
|--------------------------------------------------------------------------------------------|------|
| APPENDIX A - GENERAL INFORMATION FOR MODULE FLOW CHARTS AND LISTINGS                       | 1123 |
| General Description                                                                        | 1123 |
| Autoflow Description                                                                       | 1123 |
| Cross Reference List                                                                       | 1128 |
| Table of Diagnostics                                                                       | 1128 |
| Flow Charts                                                                                | 1129 |
| APPENDIX B - PROGRAM FLOW CHARTS, OVERLAYS (8,0), (14,0), (15,0), (16,0) AND (17,0)        | 1132 |
| Overlay (8,0) - Input Data Processing and Geometry Analysis                                | 1138 |
| Program Table of Contents and References, and Table of Diagnostics                         | 1139 |
| Program Flow Charts                                                                        | 1153 |
| Program ØLAY8                                                                              | 1154 |
| Subroutine CCNTL                                                                           | 1157 |
| Subroutine CASE                                                                            | 1166 |
| Subroutine GEØMW                                                                           | 1170 |
| Subroutine GEØMC                                                                           | 1180 |
| Subroutine VSGEØM                                                                          | 1187 |
| Subroutine TBWDC                                                                           | 1193 |
| Subroutine ABØXC                                                                           | 1199 |
| Subroutine DMAX                                                                            | 1203 |
| Subroutine CAERØ                                                                           | 1208 |
| Subroutine SWPXYT                                                                          | 1211 |
| Subroutine PRTG                                                                            | 1214 |
| Subroutine GCØMP                                                                           | 1219 |
| Overlay (14,0) - Leading and Trailing Edge Structures, Weight and Mass Properties Analysis | 1223 |
| Program Table of Contents and References, and Table of Diagnostics                         | 1225 |
| Program Flow Charts                                                                        | 1239 |
| Program ØLAY14                                                                             | 1240 |
| Subroutine WLETE                                                                           | 1243 |
| Subroutine GCNTL                                                                           | 1253 |



# Section

## Page

|                                                                                                 |      |
|-------------------------------------------------------------------------------------------------|------|
| Subroutine LEWT                                                                                 | 1264 |
| Subroutine TEWT                                                                                 | 1274 |
| Subroutine TEDEV                                                                                | 1279 |
| Subroutine TEWTI                                                                                | 1286 |
| Subroutine LETEI                                                                                | 1295 |
| Subroutine CTØT1                                                                                | 1309 |
| Overlay (15,0) - Fuel, Contents and Concentrated<br>Masses, Weight and Mass Properties Analysis | 1315 |
| Program Table of Contents and References,<br>and Table of Diagnostics                           | 1317 |
| Program Flow Charts                                                                             | 1331 |
| Program ØLAY15                                                                                  | 1332 |
| Subroutine WCØNT                                                                                | 1335 |
| Subroutine MISCNT                                                                               | 1338 |
| Subroutine MISCIT                                                                               | 1349 |
| Subroutine CDL                                                                                  | 1361 |
| Subroutine FDIS                                                                                 | 1370 |
| Subroutine TBFWI1                                                                               | 1382 |
| Subroutine CTØT2                                                                                | 1392 |
| Subroutine PRIM                                                                                 | 1397 |
| Overlay (16,0) - Design Data for Torque-Box<br>Analysis                                         | 1403 |
| Program Table of Contents and References, and<br>Table of Diagnostics                           | 1405 |
| Program Flow Charts                                                                             | 1419 |
| Program ØLAY16                                                                                  | 1420 |
| Subroutine WDDATA                                                                               | 1423 |
| Subroutine MTLCW                                                                                | 1428 |
| Subroutine MTLFW                                                                                | 1432 |
| Subroutine MTLPW                                                                                | 1437 |
| Subroutine ALØAD                                                                                | 1440 |
| Subroutine GJCAL                                                                                | 1448 |
| Subroutine GJSI                                                                                 | 1457 |
| Subroutine GJTT                                                                                 | 1460 |
| Subroutine CNSTC                                                                                | 1465 |
| Subroutine ABDW                                                                                 | 1476 |
| Subroutine YBSET                                                                                | 1481 |
| Subroutine SS2                                                                                  | 1488 |
| Subroutine VLØAD1                                                                               | 1491 |



## Section

Page

Overlay (17,0) - Data Generation and Output  
Data Processing

1495

Program Table of Contents and References, and  
Table of Diagnostics  
Program Flow Charts

1497

1509

## Program ØLAY17

1510

## Subroutine WØDATA

1513

## Subroutine PRTD

1525

## Subroutine TBFWI

1537

## Subroutine WFLDD

1547

## Subroutine WFDD

1552

## Subroutine TPINT

1563

## Subroutine CTØT

1568

## Subroutine PINTØ

1573

## APPENDIX C - PROGRAM FLOW CHARTS, OVERLAYS (9,0) AND (10,0)

1603

Overlay (9,0) - Torque-Box Structural Synthesis/  
Weight Analysis for Metallic Designs - No. 1

1607

Program Table of Contents and References, and  
Table of Diagnostics  
Program Flow Charts

1609

1621

## Program ØLAY9

1622

## Subroutine PRØG

1625

## Subroutine DWYBA

1633

## Subroutine DEADW

1638

## Subroutine VLØAD

1642

## Subroutine TBØPT

1646

## Subroutine PIVØT

1660

## Subroutine TEE

1672

## Subroutine TEL

1676

## Subroutine CSECW

1680

## Subroutine DLPVT

1684

## Subroutine PRTA

1693

## Subroutine PRTH

1703

Overlay (10,0) - Torque-Box Structural Synthesis/  
Weight Analysis for Metallic Designs - No. 2

1709

Program Table of Contents and References, and  
Table of Diagnostics

1710

| Section                                                                                             | Page |
|-----------------------------------------------------------------------------------------------------|------|
| Program Flow Charts s                                                                               | 1733 |
| Program ØLAY10                                                                                      | 1734 |
| Subroutine CNSTR                                                                                    | 1737 |
| Subroutine SECTD                                                                                    | 1748 |
| Subroutine SFSCH                                                                                    | 1761 |
| Subroutine BØT                                                                                      | 1780 |
| Subroutine BØTC                                                                                     | 1791 |
| Subroutine TSCH                                                                                     | 1795 |
| Subroutine STBAR                                                                                    | 1811 |
| Subroutine STRG                                                                                     | 1817 |
| Subroutine STRGØ                                                                                    | 1833 |
| Subroutine STRIL                                                                                    | 1837 |
| Subroutine STRIB                                                                                    | 1842 |
| Subroutine SRPIB                                                                                    | 1848 |
| Subroutine STWEB                                                                                    | 1851 |
| Subroutine SKWEB                                                                                    | 1857 |
| Subroutine EIGJC                                                                                    | 1860 |
| Subroutine VFCAL                                                                                    | 1865 |
| Subroutine WTCAL                                                                                    | 1871 |
| Subroutine BHDJT                                                                                    | 1878 |
| Subroutine RTRIB                                                                                    | 1887 |
| Subroutine WTPIN                                                                                    | 1890 |
| Subroutine CG3P                                                                                     | 1894 |
| Subroutine SS                                                                                       | 1899 |
| Subroutine PRTB                                                                                     | 1902 |
| Subroutine PRTC                                                                                     | 1907 |
| Subroutine PRTBK                                                                                    | 1911 |
| APPENDIX D - PROGRAM FLOW CHARTS, OVERLAY (18,0)                                                    | 1939 |
| Overlay (18,0) - Torque-Box Structural Synthesis/<br>Weight Analysis for Advanced Composite Designs | 1941 |
| Program Table of Contents and References, and<br>Table of Diagnostics                               | 1943 |
| Program Flow Charts                                                                                 | 1969 |
| Program ØLAY18                                                                                      | 1970 |
| Subroutine ATBØPT                                                                                   | 1973 |
| Subroutine ACLØAD                                                                                   | 1982 |
| Subroutine TEMPC                                                                                    | 1990 |
| Subroutine AVLOAD                                                                                   | 1996 |
| Subroutine ACPRØG                                                                                   | 2000 |
| Subroutine CKSTAB                                                                                   | 2006 |

| Section                                                                             | Page |
|-------------------------------------------------------------------------------------|------|
| Subroutine ACWMS                                                                    | 2012 |
| Subroutine ACWFDH                                                                   | 2027 |
| Subroutine CKSFDH                                                                   | 2034 |
| Subroutine WEIGH1                                                                   | 2038 |
| Subroutine ACWRBS                                                                   | 2044 |
| Subroutine ACWSTR                                                                   | 2057 |
| Subroutine ACMRSK                                                                   | 2074 |
| Subroutine ACSTRG                                                                   | 2079 |
| Subroutine WEIGH2                                                                   | 2086 |
| Subroutine ASTIFF                                                                   | 2090 |
| Subroutine ACEIGJ                                                                   | 2096 |
| Subroutine ACNSTR                                                                   | 2100 |
| Subroutine ACPRTA                                                                   | 2111 |
| Function XN                                                                         | 2123 |
| Subroutine WTCAL                                                                    | 2126 |
| Subroutine BHDJT                                                                    | 2128 |
| Subroutine RTRIB                                                                    | 2130 |
| Subroutine WTPIN                                                                    | 2132 |
| Subroutine DWYBA                                                                    | 2134 |
| Subroutine DEADW                                                                    | 2136 |
| Subroutine CSECW                                                                    | 2138 |
| Subroutine PIVOT                                                                    | 2140 |
| Subroutine TEE                                                                      | 2142 |
| Subroutine TEL                                                                      | 2144 |
| Subroutine DLPVT                                                                    | 2146 |
| Subroutine PRTB                                                                     | 2148 |
| Subroutine PRTC                                                                     | 2150 |
| Subroutine PRTH                                                                     | 2152 |
| APPENDIX E - PROGRAM LISTINGS, OVERLAYS (8,0), (14,0), (15,0), (16,0)<br>AND (17,0) | 2179 |
| Overlay (8,0) - Input Data Processing and Geometry<br>Analysis                      | 2185 |
| Program ØLAY8                                                                       | 2186 |
| Subroutine CCNTL                                                                    | 2186 |
| Subroutine CASE                                                                     | 2193 |
| Subroutine GEØMW                                                                    | 2195 |
| Subroutine GEØMC                                                                    | 2203 |
| Subroutine VSGEØM                                                                   | 2207 |
| Subroutine TBWDC                                                                    | 2212 |
| Subroutine ABØXC                                                                    | 2216 |
| Subroutine DMAV                                                                     | 2218 |

| Section                                                                                         | Page |
|-------------------------------------------------------------------------------------------------|------|
| Subroutine CAERO                                                                                | 2220 |
| Subroutine SWPXYP                                                                               | 2220 |
| Subroutine PRTG                                                                                 | 2221 |
| Subroutine GCOMP                                                                                | 2224 |
| Overlay (14,0) - Leading and Trailing Edge Structures,<br>Weight and Mass Properties Analysis   | 2229 |
| Program ØLAY14                                                                                  | 2230 |
| Subroutine WLETE                                                                                | 2230 |
| Subroutine GCNTL                                                                                | 2234 |
| Subroutine LEWT                                                                                 | 2240 |
| Subroutine TEWT                                                                                 | 2246 |
| Subroutine TEDEV                                                                                | 2249 |
| Subroutine TEWTI                                                                                | 2253 |
| Subroutine LETEI                                                                                | 2259 |
| Subroutine CTØT1                                                                                | 2266 |
| Overlay (15,0) - Fuel, Contents and Concentrated<br>Masses, Weight and Mass Properties Analysis | 2269 |
| Program ØLAY15                                                                                  | 2270 |
| Subroutine WCØNT                                                                                | 2270 |
| Subroutine MISCNT                                                                               | 2271 |
| Subroutine MISCIT                                                                               | 2278 |
| Subroutine CDL                                                                                  | 2286 |
| Subroutine FDIS                                                                                 | 2291 |
| Subroutine TBFWI1                                                                               | 2299 |
| Subroutine CTØT2                                                                                | 2305 |
| Subroutine PRTM                                                                                 | 2307 |
| Overlay (16,0) - Design Data for Torque-Box<br>Analysis                                         | 2309 |
| Program ØLAY16                                                                                  | 2310 |
| Subroutine WDDATA                                                                               | 2310 |
| Subroutine MTLCW                                                                                | 2313 |
| Subroutine MTLFW                                                                                | 2315 |
| Subroutine MTLPW                                                                                | 2318 |
| Subroutine ALØAD                                                                                | 2319 |
| Subroutine GJCAL                                                                                | 2324 |
| Subroutine GJSI                                                                                 | 2330 |
| Subroutine GJTT                                                                                 | 2331 |
| Subroutine CNSTC                                                                                | 2333 |
| Subroutine ABDW                                                                                 | 2339 |

## Section

Page

|                   |      |
|-------------------|------|
| Subroutine YBSET  | 2341 |
| Subroutine SS2    | 2344 |
| Subroutine VLØAD1 | 2345 |

|                                                             |      |
|-------------------------------------------------------------|------|
| Overlay (17,0) - Data Generation and Output Data Processing | 2349 |
|-------------------------------------------------------------|------|

|                   |      |
|-------------------|------|
| Program ØLAY17    | 2350 |
| Subroutine WØDATA | 2350 |
| Subroutine PRTD   | 2359 |
| Subroutine TBFWI  | 2367 |
| Subroutine WFLDD  | 2373 |
| Subroutine WVFDD  | 2376 |
| Subroutine TPINT  | 2385 |
| Subroutine CTØT   | 2387 |
| Subroutine PINTØ  | 2389 |

|                                                                  |      |
|------------------------------------------------------------------|------|
| APPENDIX F - PROGRAM LISTINGS, OVERLAYS (9,0), (10,0) AND (18,0) | 2417 |
|------------------------------------------------------------------|------|

|                                                                                                  |      |
|--------------------------------------------------------------------------------------------------|------|
| Overlay (9,0) - Torque-Box Structural Synthesis/<br>Weight Analysis for Metallic Designs - No. 1 | 2423 |
|--------------------------------------------------------------------------------------------------|------|

|                  |      |
|------------------|------|
| Program ØLAY9    | 2424 |
| Subroutine PRØG  | 2424 |
| Subroutine DWYBA | 2429 |
| Subroutine DEADW | 2432 |
| Subroutine VLØAD | 2434 |
| Subroutine TBØPT | 2436 |
| Subroutine PIVØT | 2443 |
| Subroutine TEE   | 2450 |
| Subroutine TEL   | 2452 |
| Subroutine CSECW | 2453 |
| Subroutine DLPVT | 2455 |
| Subroutine PRTA  | 2461 |
| Subroutine PRTH  | 2466 |

|                                                                                                   |      |
|---------------------------------------------------------------------------------------------------|------|
| Overlay (10,0) - Torque-Box Structural Synthesis/<br>Weight Analysis for Metallic Designs - No. 2 | 2469 |
|---------------------------------------------------------------------------------------------------|------|

|                  |      |
|------------------|------|
| Program ØLAY10   | 2470 |
| Subroutine CNSTR | 2470 |
| Subroutine SECTD | 2477 |
| Subroutine SFSCH | 2485 |
| Subroutine BØT   | 2494 |
| Subroutine BØTC  | 2497 |

## Section

Page

|                  |      |
|------------------|------|
| Subroutine TSCH  | 2498 |
| Subroutine STBAR | 2507 |
| Subroutine STRG  | 2509 |
| Subroutine STRGØ | 2514 |
| Subroutine STRIL | 2516 |
| Subroutine STRIB | 2518 |
| Subroutine SRRIB | 2520 |
| Subroutine STWEB | 2521 |
| Subroutine SKWEB | 2523 |
| Subroutine EIGJC | 2524 |
| Subroutine VFCAL | 2528 |
| Subroutine WTCAL | 2531 |
| Subroutine BHDJT | 2537 |
| Subroutine RTRIB | 2541 |
| Subroutine WTPIN | 2542 |
| Subroutine CG3P  | 2544 |
| Subroutine SS    | 2545 |
| Subroutine PRTB  | 2546 |
| Subroutine PRTC  | 2548 |
| Subroutine PRTBK | 2550 |

|                                                                                                     |      |
|-----------------------------------------------------------------------------------------------------|------|
| Overlay (18,0) - Torque-Box Structural Synthesis/<br>Weight Analysis for Advanced Composite Designs | 2553 |
|-----------------------------------------------------------------------------------------------------|------|

|                   |      |
|-------------------|------|
| Program ØLAY18    | 2554 |
| Subroutine ATBØPT | 2554 |
| Subroutine ACLØAD | 2561 |
| Subroutine TEMPC  | 2566 |
| Subroutine AVLØAD | 2569 |
| Subroutine ACPRØG | 2572 |
| Subroutine CKSTAB | 2577 |
| Subroutine ACWMS  | 2580 |
| Subroutine ACWFDH | 2590 |
| Subroutine CKSFDH | 2594 |
| Subroutine WEIGH1 | 2595 |
| Subroutine ACWRBS | 2598 |
| Subroutine ACWSTR | 2606 |
| Subroutine ACMRSK | 2615 |
| Subroutine ACSTRG | 2619 |
| Subroutine WEIGH2 | 2622 |
| Subroutine ASTIFF | 2624 |
| Subroutine ACEIGJ | 2629 |
| Subroutine ACNSTR | 2632 |
| Subroutine ACPRTA | 2642 |
| Function XN       | 2650 |

# Section

# Page

|                  |      |
|------------------|------|
| Subroutine WTCAL | 2650 |
| Subroutine BNDJT | 2650 |
| Subroutine RTRIB | 2651 |
| Subroutine WTPIN | 2651 |
| Subroutine DWYBA | 2651 |
| Subroutine DFADW | 2651 |
| Subroutine CSECW | 2651 |
| Subroutine PIVØT | 2651 |
| Subroutine TFE   | 2652 |
| Subroutine TEL   | 2652 |
| Subroutine DLPVT | 2652 |
| Subroutine PRTB  | 2652 |
| Subroutine PRTC  | 2652 |
| Subroutine PRTH  | 2653 |



# LIST OF ILLUSTRATIONS

| Figure | Title                                                                                                    | Page |
|--------|----------------------------------------------------------------------------------------------------------|------|
| 1      | Wing and Empennage Module, Overlay Execution Flow Diagram.                                               | 33   |
| 2      | Overlay (8,0) - Input Data Processing and Geometry Analysis . . . . .                                    | 68   |
| 3      | Overlay (14,0) - Leading and Trailing Edge Structures, Weight and Mass Properties Analysis. . . . .      | 69   |
| 4      | Overlay (15,0) - Fuel, Contents and Concentrated Masses, Weight and Mass Properties Analysis. . . . .    | 70   |
| 5      | Overlay (16,0) - Design Data for Torque-box Analysis . . .                                               | 71   |
| 6      | Overlay (9,0) - Torque-box Structural Synthesis/Weight Analysis for Metallic Designs - No. 1. . . . .    | 72   |
| 7      | Overlay (10,0) - Torque-box Structural Synthesis/Weight Analysis for Metallic Designs - No. 2. . . . .   | 73   |
| 8      | Overlay (18,0) - Torque-box Structural Synthesis/Weight Analysis for Advanced Composite Designs. . . . . | 74   |
| 9      | Overlay (17,0) - Data Generation and Output Data Processing . . . . .                                    | 75   |
| 10     | Weight Summary, Wing Group . . . . .                                                                     | 84   |
| 11     | Weight Summary, Horizontal Tail Group. . . . .                                                           | 86   |
| 12     | Weight Summary, Vertical Tail Group. . . . .                                                             | 88   |
| 13     | General Program Functional Flow Diagram. . . . .                                                         | 259  |
| 14     | Logic and Execution Subroutine Flow Diagram for Lifting Surface Structural Weight Estimation Module. . . | 260  |
| 15     | Structural Synthesis/Weight Analysis Reference System and Weight Integration . . . . .                   | 261  |
| 16     | Idealized Lifting Surface Planform . . . . .                                                             | 264  |
| 17     | Blended Wing Planform. . . . .                                                                           | 267  |
| 18     | Idealized Box Section. . . . .                                                                           | 269  |
| 19     | Blended Wing Torque-Box Geometry . . . . .                                                               | 270  |
| 20     | Blended Wing Normalized Geometry . . . . .                                                               | 271  |
| 21     | Variable-Sweep Wing Geometry Idealization. . . . .                                                       | 273  |
| 22     | Mass Properties Integration Grid System. . . . .                                                         | 275  |
| 23     | Leading Edge Structure Weight Distribution . . . . .                                                     | 278  |
| 24     | Leading Edge Structure Chordwise Weight Distribution . . .                                               | 279  |
| 25     | Trailing Edge Structure Chordwise Weight Distribution. . .                                               | 281  |
| 26     | Wing Fuel Distribution . . . . .                                                                         | 282  |
| 27     | Contents Weight Distribution . . . . .                                                                   | 285  |
| 28     | Externally Mounted Component Description . . . . .                                                       | 286  |
| 29     | Loads Rotation and Translation . . . . .                                                                 | 292  |
| 30     | Typical Material Stress-Strain Curve and Evaluation Data . . . . .                                       | 295  |
| 31     | Effective Structural Width Idealization. . . . .                                                         | 298  |

| Figure |                                                                                                                 | Page |
|--------|-----------------------------------------------------------------------------------------------------------------|------|
| 32     | Multirib Stringer Design Options . . . . .                                                                      | 301  |
| 33     | Multispar Design Options . . . . .                                                                              | 302  |
| 34     | First Search Level, Multirib or Multispar Construction . .                                                      | 305  |
| 35     | Second Search Level, Multirib. . . . .                                                                          | 305  |
| 36     | Interpolation Scheme for Stress Level. . . . .                                                                  | 309  |
| 37     | Stringer-Column Geometry . . . . .                                                                              | 313  |
| 38     | Composite-Ply Orientations . . . . .                                                                            | 323  |
| 39     | Laminate Configuration . . . . .                                                                                | 324  |
| 40     | Advanced Composite Structures Checked for Stability. . .                                                        | 332  |
| 41     | Torque-Box Cross Section . . . . .                                                                              | 344  |
| 42     | Logic and Computational Flow Diagram for Total Multirib<br>Torque-Box Optimization, Subroutine ACWRBS . . . . . | 352  |
| 43     | Logic and Computational Flow Diagram for Synthesis of<br>Stringer Stiffened Covers, Subroutine ACWSTR . . . . . | 353  |
| 44     | Logic and Computational Flow Diagram for Skin/Stringer<br>Load and Skin Stability, Subroutine ACMRSK . . . . .  | 354  |
| 45     | Stringer Types for Multirib Torque-Box Covers. . . . .                                                          | 355  |
| 46     | Leading and Trailing Edge Control Geometry . . . . .                                                            | 363  |
| 47     | Geometry Description for Trailing Edge Device<br>No. 3, 4, and 5 - Trailing Edge Flaps. . . . .                 | 370  |
| 48     | Lifting Surface Component Weight Summary . . . . .                                                              | 374  |
| 49     | Torque-Box Weight Summary, Page 1. . . . .                                                                      | 375  |
| 50     | Torque-Box Weight Summary, Page 2, Pivot Type. . . . .                                                          | 376  |
| 51     | Flutter, Flexible Airloads, Weight Optimization Design<br>Loop (Stand-Alone Programs). . . . .                  | 379  |
| 52     | Flexible Loads Analysis Mass Distribution and<br>Integration Reference System . . . . .                         | 381  |
| 53     | Flutter Optimization Analysis Mass Distribution and<br>Integration Reference System . . . . .                   | 382  |
| 54     | Structural Synthesis/Weight Analysis Reference<br>System and Weight Integration. . . . .                        | 384  |
| 55     | Mass Properties Integration Grid System. . . . .                                                                | 386  |
| 56     | Overlay (8,0), Input Data Processing and Geometry<br>Analysis . . . . .                                         | 420  |
| 57     | Overlay (8,0), Logic Flow Diagram. . . . .                                                                      | 421  |
| 58     | Geometry Summary Data - Page 1 . . . . .                                                                        | 546  |
| 59     | Geometry Summary Data - Page 2 . . . . .                                                                        | 547  |
| 60     | Geometry Summary Data - Swept Platform Position. . . . .                                                        | 548  |

# LIST OF TABLES

| Table | Title                                                                                             | Page |
|-------|---------------------------------------------------------------------------------------------------|------|
| 1     | Subprogram List, Wing and Empennage Module . . . . .                                              | 34   |
| 2     | Wing and Empennage Module Overlay Subprogram List. . . . .                                        | 76   |
| 3     | Overlay Blank Common Requirements. . . . .                                                        | 82   |
| 4     | Mass Storage File 1 Records, Wing and Empennage Module . . .                                      | 90   |
| 5     | FDAT Array, Final Output Data. . . . .                                                            | 98   |
| 6     | XMISC Array. . . . .                                                                              | 100  |
| 7     | IP Array, Print Control Data . . . . .                                                            | 104  |
| 8     | D Array, Input Variable Data . . . . .                                                            | 109  |
| 9     | ND Array . . . . .                                                                                | 191  |
| 10    | DC Array, Miscellaneous Constants. . . . .                                                        | 202  |
| 11    | Array References, Array D. . . . .                                                                | 209  |
| 12    | D Array Variables Cross-Reference List . . . . .                                                  | 231  |
| 13    | Array References, Array ND . . . . .                                                              | 243  |
| 14    | Array References, Array DC . . . . .                                                              | 255  |
| 15    | Torque-Box Elements, Section Stiffness Calculations. . . . .                                      | 356  |
| 16    | Sample Wing Torque-Box Program Calibration and Weight<br>Index Coefficients . . . . .             | 359  |
| 17    | Flap-Type Indicator and Correlation Coefficients . . . . .                                        | 372  |
| 18    | Torque-Box Summary Page Line Item Definitions. . . . .                                            | 377  |
| 19    | External References, Overlay (8,0) Routines. . . . .                                              | 418  |
| 20    | WD Array, Wing and Empennage Variable Data,<br>Mass Storage File 1, Record 21 . . . . .           | 425  |
| 21    | SPAL Array, Wing and Empennage Flutter Analysis Data,<br>Mass Storage File 1, Record 38 . . . . . | 430  |
| 22    | DLE Array, Variable Data Subarray for Nonlinear<br>Leading Edges. . . . .                         | 436  |
| 23    | DTE Array, Variable Data Subarray for Nonlinear<br>Trailing Edges . . . . .                       | 438  |
| 24    | DTC Array, Variable Data Subarray for Nonlinear<br>Thickness Ratios . . . . .                     | 440  |
| 25    | DAF Array, Airfoil Cross-Section Data. . . . .                                                    | 442  |
| 26    | Polynomial Coefficients of Properties of<br>Normalized Airfoils. . . . .                          | 448  |
| 27    | Airfoil Ordinates. . . . .                                                                        | 449  |
| 28    | AFD Array. . . . .                                                                                | 450  |
| 29    | TAF Array, Airfoil Depth Data. . . . .                                                            | 451  |
| 30    | TXY Array, Geometry Data . . . . .                                                                | 455  |
| 31    | YTB Array, Torque-Box Geometry Data. . . . .                                                      | 460  |
| 32    | YLE Array, Leading Edge Geometry Data. . . . .                                                    | 462  |
| 33    | YTE Array, Trailing Edge Geometry Data . . . . .                                                  | 463  |
| 34    | T Array, Locations 1-200, 489-553. . . . .                                                        | 464  |
| 35    | TVS Array. . . . .                                                                                | 470  |

| Table | Title                                                                      | Page |
|-------|----------------------------------------------------------------------------|------|
| 36    | TGJ Array, Flutter Analysis Data . . . . .                                 | 482  |
| 37    | TFRDK Array, Geometry Array for Mass Properties<br>Calculations . . . . .  | 485  |
| 38    | YC Array, Overlay (8,0). . . . .                                           | 487  |
| 39    | YTC Array. . . . .                                                         | 490  |
| 40    | TD Array, Printed Output Geometry Data . . . . .                           | 493  |
| 41    | TS Array . . . . .                                                         | 500  |
| 42    | Data Source Matrix for Adjustment of Variable<br>Data, Array D. . . . .    | 505  |
| 43    | Variable References, Subroutine CCNTL. . . . .                             | 509  |
| 44    | Variable References, Subroutine CASE . . . . .                             | 512  |
| 45    | TT Array, GEOMW. . . . .                                                   | 516  |
| 46    | Variable References, Subroutine GEOMW. . . . .                             | 518  |
| 47    | Variable References, Subroutine GEOMC. . . . .                             | 523  |
| 48    | Variable References, Subroutine VSGEOM . . . . .                           | 526  |
| 49    | Variable References, Subroutine TBWDC. . . . .                             | 530  |
| 50    | TR Array, TBWDC. . . . .                                                   | 531  |
| 51    | TT Array, TBWDC and AB0XC. . . . .                                         | 532  |
| 52    | Variable References, Subroutine AB0XC. . . . .                             | 536  |
| 53    | Variable References, Subroutine DMAX . . . . .                             | 539  |
| 54    | Variable References, Subroutine CALER0. . . . .                            | 541  |
| 55    | Variable References, Subroutine SNPXYP . . . . .                           | 544  |
| 56    | Variable References, Subroutine PRTG . . . . .                             | 549  |
| 57    | Variable References, Subroutine GC0MP. . . . .                             | 551  |
| 58    | Cross-Reference List for Subroutine Variable<br>Reference Tables . . . . . | 553  |
| 59    | External References, Overlay (14,0) Routines . . . . .                     | 556  |
| 60    | External References, Overlay (15,0) Routines . . . . .                     | 557  |
| 61    | External References, Overlay (16,0) Routines . . . . .                     | 558  |
| 62    | External References, Overlay (9,0) Routines . . . . .                      | 560  |
| 63    | External References, Overlay (10,0) Routines . . . . .                     | 562  |
| 64    | External References, Overlay (18,0) Routines . . . . .                     | 565  |
| 65    | External References, Overlay (17,0) Routines . . . . .                     | 569  |
| 66    | Variable References, Subroutine WLETE. . . . .                             | 570  |
| 67    | Variable References, Subroutine GCNTL. . . . .                             | 571  |
| 68    | Variable References, Subroutine LEWT . . . . .                             | 572  |
| 69    | Variable References, Subroutine TEWT . . . . .                             | 574  |
| 70    | Variable References, Subroutine TEWTI. . . . .                             | 575  |
| 71    | Variable References, Subroutine TEDEV. . . . .                             | 576  |
| 72    | Variable References, Subroutine LETEI. . . . .                             | 577  |
| 73    | Variable References, Subroutine WC0NT. . . . .                             | 579  |
| 74    | Variable References, Subroutine MISCNT . . . . .                           | 580  |
| 75    | Variable References, Subroutine MISCIT . . . . .                           | 582  |
| 76    | Variable References, Subroutine CDL. . . . .                               | 584  |
| 77    | Variable References, Subroutine FDIS . . . . .                             | 586  |
| 78    | Variable References, Subroutine PRIM . . . . .                             | 588  |

| Table | Title                                           | Page |
|-------|-------------------------------------------------|------|
| 79    | Variable References, Subroutine WDDATA. . . . . | 589  |
| 80    | Variable References, Subroutine MTLCW . . . . . | 592  |
| 81    | Variable References, Subroutine MTLFW . . . . . | 593  |
| 82    | Variable References, Subroutine MTLPW . . . . . | 594  |
| 83    | Variable References, Subroutine ALQAD . . . . . | 595  |
| 84    | Variable References, Subroutine GJCAL . . . . . | 598  |
| 85    | Variable References, Subroutine GJSI. . . . .   | 601  |
| 86    | Variable References, Subroutine GJTT. . . . .   | 602  |
| 87    | Variable References, Subroutine CNSTC . . . . . | 605  |
| 88    | Variable References, Subroutine ABDW . . . . .  | 608  |
| 89    | Variable References, Subroutine YBSET . . . . . | 611  |
| 90    | Variable References, Subroutine PRQG . . . . .  | 613  |
| 91    | Variable References, Subroutine DEADW . . . . . | 617  |
| 92    | Variable References, Subroutine DWYBA . . . . . | 619  |
| 93    | Variable References, Subroutine VLQAD . . . . . | 621  |
| 94    | Variable References, Subroutine TBQPT . . . . . | 624  |
| 95    | Variable References, Subroutine CSECW . . . . . | 626  |
| 96    | Variable References, Subroutine PIVQT . . . . . | 627  |
| 97    | Variable References, Subroutine TEE . . . . .   | 631  |
| 98    | Variable References, Subroutine TEL . . . . .   | 632  |
| 99    | Variable References, Subroutine DLPVT . . . . . | 633  |
| 100   | Variable References, Subroutine PRTA. . . . .   | 635  |
| 101   | Variable References, Subroutine PRTH. . . . .   | 637  |
| 102   | Variable References, Subroutine CNSTR . . . . . | 638  |
| 103   | Variable References, Subroutine SECTD . . . . . | 641  |
| 104   | Variable References, Subroutine SFSCH . . . . . | 644  |
| 105   | Variable References, Subroutine BQT . . . . .   | 646  |
| 106   | Variable References, Subroutine BQTC. . . . .   | 647  |
| 107   | Variable References, Subroutine TSCH. . . . .   | 648  |
| 108   | Variable References, Subroutine STBAR . . . . . | 650  |
| 109   | Variable References, Subroutine STRG. . . . .   | 651  |
| 110   | Variable References, Subroutine STRQØ . . . . . | 652  |
| 111   | Variable References, Subroutine STRIL . . . . . | 653  |
| 112   | Variable References, Subroutine STRIB . . . . . | 654  |
| 113   | Variable References, Subroutine SRRIB . . . . . | 655  |
| 114   | Variable References, Subroutine STWEB . . . . . | 656  |
| 115   | Variable References, Subroutine SKWEB . . . . . | 657  |
| 116   | Variable References, Subroutine VFCAL . . . . . | 658  |
| 117   | Variable References, Subroutine EIGJC . . . . . | 659  |
| 118   | Variable References, Subroutine WTCAL . . . . . | 660  |
| 119   | Variable References, Subroutine BHDJT . . . . . | 662  |
| 120   | Variable References, Subroutine RTRIB . . . . . | 663  |
| 121   | Variable References, Subroutine WTPIN . . . . . | 664  |
| 122   | Variable References, Subroutine SS. . . . .     | 665  |
| 123   | Variable References, Subroutine CG3P. . . . .   | 666  |
| 124   | Variable References, Subroutine PRTB. . . . .   | 666  |

| Table | Title                                                                                             | Page |
|-------|---------------------------------------------------------------------------------------------------|------|
| 125   | Variable References, Subroutine PRTBK . . . . .                                                   | 668  |
| 126   | Variable References, Subroutine PRTC. . . . .                                                     | 669  |
| 127   | Variable References, Subroutine ACPRG. . . . .                                                    | 670  |
| 128   | Variable References, Subroutine ACLAD. . . . .                                                    | 674  |
| 129   | Variable References, Subroutine TEMPC . . . . .                                                   | 676  |
| 130   | Variable References, Subroutine AVLAD. . . . .                                                    | 678  |
| 131   | Variable References, Subroutine ATBPT. . . . .                                                    | 681  |
| 132   | Variable References, Subroutine ACNSTR. . . . .                                                   | 685  |
| 133   | Variable References, Subroutine ACWMS . . . . .                                                   | 689  |
| 134   | Variable References, Subroutine CKSTAB. . . . .                                                   | 693  |
| 135   | Variable References, Subroutine WEIGH1. . . . .                                                   | 696  |
| 136   | Variable References, Subroutine ACWFDH. . . . .                                                   | 698  |
| 137   | Variable References, Subroutine CKSFDH. . . . .                                                   | 700  |
| 138   | Variable References, Subroutine ACWRBS. . . . .                                                   | 702  |
| 139   | Variable References, Subroutine ACWSTR. . . . .                                                   | 706  |
| 140   | Variable References, Subroutine ACMRSK. . . . .                                                   | 712  |
| 141   | Variable References, Subroutine ACSTRG. . . . .                                                   | 716  |
| 142   | Variable References, Subroutine WEIGH2. . . . .                                                   | 718  |
| 143   | Variable References, Subroutine ASTIFF. . . . .                                                   | 720  |
| 144   | Variable References, Subroutine ACEIGJ. . . . .                                                   | 723  |
| 145   | Variable References, Function XN . . . . .                                                        | 724  |
| 146   | Variable References, Subroutine ACPRTA. . . . .                                                   | 725  |
| 147   | Variable References, Subroutine WDATA. . . . .                                                    | 729  |
| 148   | Variable References, Subroutine PRTD. . . . .                                                     | 732  |
| 149   | Variable References, Subroutine TBFWI . . . . .                                                   | 734  |
| 150   | Variable References, Subroutine WFLDD . . . . .                                                   | 735  |
| 151   | Variable References, Subroutine WVFDD . . . . .                                                   | 737  |
| 152   | Variable References, Subroutine TPINT . . . . .                                                   | 740  |
| 153   | Variable References, Subroutine PINTO . . . . .                                                   | 741  |
| 154   | Variable References, Subroutine CTOT . . . . .                                                    | 742  |
| 155   | Cross-Reference List for Array Core Maps. . . . .                                                 | 770  |
| 156   | DLE Array, Variable Data Subarray for Fixed Leading<br>Edge Structures . . . . .                  | 774  |
| 157   | DTE Array, Variable Data Subarray for Fixed Trailing Edge<br>Structures. . . . .                  | 776  |
| 158   | DLED1 Array, Variable Data Subarray for Leading Edge Control<br>Surfaces. . . . .                 | 778  |
| 159   | DLEDK Array, Variable Data Subarray, Leading Edge Control<br>Surface Analysis Constants . . . . . | 781  |
| 160   | DTED1 Array, Variable Data Subarray for Trailing Edge Control<br>Surfaces, Spoilers. . . . .      | 783  |

| Table | Title                                                                                                                  | Page |
|-------|------------------------------------------------------------------------------------------------------------------------|------|
| 161   | DTED2 Array, Variable Data Subarray for Trailing Edge<br>Flap-Type Control Surfaces . . . . .                          | 786  |
| 162   | DSPDK Array, Variable Data Subarray, Spoiler Control<br>Surface Analysis . . . . .                                     | 793  |
| 163   | DFLPK Array, Variable Data Subarray, Trailing Edge Flap<br>Control Surface Analysis . . . . .                          | 794  |
| 164   | DAILK Array, Variable Data Subarray, Aileron, Elevator,<br>and Rudder Control Surface Analysis. . . . .                | 795  |
| 165   | DFSP Array, Variable Data Subarray, TE Flap-Type Control<br>Surface Support Structure Distribution Constants . . . . . | 797  |
| 166   | TG Array . . . . .                                                                                                     | 799  |
| 167   | TGA Array . . . . .                                                                                                    | 802  |
| 168   | YC Array, Overlays (14,0), (15,0), and (17,0). . . . .                                                                 | 804  |
| 169   | TWG Array . . . . .                                                                                                    | 807  |
| 170   | CCW Array . . . . .                                                                                                    | 814  |
| 171   | CCI, CCL, and CCT Arrays, Overlay (14,0) . . . . .                                                                     | 818  |
| 172   | TCS Array, Overlay (14,0). . . . .                                                                                     | 823  |
| 173   | CKD Array, Subroutine LETEI . . . . .                                                                                  | 826  |
| 174   | CLEI and CTEI Arrays . . . . .                                                                                         | 827  |
| 175   | CIØY Array . . . . .                                                                                                   | 829  |
| 176   | TGR Array, Subroutine LEWT . . . . .                                                                                   | 831  |
| 177   | TST Array, Subroutine LEWT . . . . .                                                                                   | 834  |
| 178   | TTED Array . . . . .                                                                                                   | 836  |
| 179   | TST Array, Subroutine TEWTI and TEDEV. . . . .                                                                         | 839  |
| 180   | TGR Array, Subroutine TEWT and TEWTI . . . . .                                                                         | 845  |
| 181   | TGR Array, Subroutine LETEI. . . . .                                                                                   | 849  |
| 182   | TST Array, Subroutine LETEI. . . . .                                                                                   | 852  |
| 183   | TE Array . . . . .                                                                                                     | 855  |
| 184   | TST Array, Subroutine WLETE. . . . .                                                                                   | 857  |
| 185   | CMII Array . . . . .                                                                                                   | 859  |
| 186   | CCDLI Array, Overlays (15,0), (16,0), and (17,0) . . . . .                                                             | 862  |
| 187   | CFL1I and CFL2I Arrays . . . . .                                                                                       | 868  |
| 188   | CKD Array, Overlay (15,0). . . . .                                                                                     | 870  |
| 189   | TVMT Array . . . . .                                                                                                   | 873  |
| 190   | T Array, Locations 201-900 . . . . .                                                                                   | 876  |
| 191   | Subroutine References for T(201)-T(900) Variables. . . . .                                                             | 884  |
| 192   | TVF Array . . . . .                                                                                                    | 891  |
| 193   | CTBW Array . . . . .                                                                                                   | 898  |
| 194   | CTBI Array . . . . .                                                                                                   | 901  |
| 195   | WCG Array . . . . .                                                                                                    | 904  |
| 196   | ACL Array . . . . .                                                                                                    | 905  |
| 197   | ACLT Array . . . . .                                                                                                   | 908  |
| 198   | ACVMT and V Arrays . . . . .                                                                                           | 909  |
| 199   | TEIGJ Array. . . . .                                                                                                   | 911  |
| 200   | ENQ Array . . . . .                                                                                                    | 912  |



| Table | Title                                                                                                                                      | Page |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------|------|
| 201   | ENQC Array . . . . .                                                                                                                       | 914  |
| 202   | CNT Array. . . . .                                                                                                                         | 916  |
| 203   | STRESS Array . . . . .                                                                                                                     | 920  |
| 204   | ENX Array. . . . .                                                                                                                         | 922  |
| 205   | EL Array . . . . .                                                                                                                         | 924  |
| 206   | IEL Array. . . . .                                                                                                                         | 927  |
| 207   | SPB Array. . . . .                                                                                                                         | 929  |
| 208   | SPN Array. . . . .                                                                                                                         | 931  |
| 209   | TF Array . . . . .                                                                                                                         | 932  |
| 210   | W Array, Subroutine WEIGH1 . . . . .                                                                                                       | 935  |
| 211   | TX Array . . . . .                                                                                                                         | 937  |
| 212   | TXS Array. . . . .                                                                                                                         | 943  |
| 213   | STRING Array . . . . .                                                                                                                     | 946  |
| 214   | W Array, Subroutine WEIGH2 . . . . .                                                                                                       | 949  |
| 215   | TSF Array. . . . .                                                                                                                         | 951  |
| 216   | TA Array . . . . .                                                                                                                         | 955  |
| 217   | CD Array, Locations 1-400, Stiffness Data Arrays . . . . .                                                                                 | 957  |
| 218   | TDC Array, Overlay (18,0). . . . .                                                                                                         | 961  |
| 219   | DDUC and DDLC Arrays . . . . .                                                                                                             | 968  |
| 220   | DDIS Array . . . . .                                                                                                                       | 970  |
| 221   | DDFS and DURS Arrays . . . . .                                                                                                             | 972  |
| 222   | DDSTR Array. . . . .                                                                                                                       | 974  |
| 223   | DSPLØ Array, Analysis Constants. . . . .                                                                                                   | 977  |
| 224   | TDC Array, Overlays (9,0) and (10,0) . . . . .                                                                                             | 978  |
| 225   | TSC Array. . . . .                                                                                                                         | 990  |
| 226   | TSEC Array . . . . .                                                                                                                       | 998  |
| 227   | TSS Array, Subroutines SFSCH and TSCH. . . . .                                                                                             | 1036 |
| 228   | TSS Array, Subroutine STRIB. . . . .                                                                                                       | 1014 |
| 229   | TSS Array, Subroutine STWEB. . . . .                                                                                                       | 1017 |
| 230   | TWT Array, Locations 1-330, Weight Analysis Data and<br>Constants. . . . .                                                                 | 1020 |
| 231   | TWT Array, Locations 331-400, Section Weight Per<br>Inch Data, Subroutine WTPIN. . . . .                                                   | 1047 |
| 232   | TWT Array, Locations 331-400, Center-Section Weight<br>Data, Subroutine CSECW . . . . .                                                    | 1053 |
| 233   | TWT Array, Locations 1 Through 50 and 331 Through<br>400, Torque-Box Weight Increment Data for Pivot<br>Designs, Subroutine DLPVT. . . . . | 1057 |
| 234   | PT Array, Subroutine PIVØT . . . . .                                                                                                       | 1065 |
| 235   | S Array, Subroutine PIVØT. . . . .                                                                                                         | 1075 |
| 236   | TSS Array, Total Weight Summary Data, Subroutines<br>TBØPT and ATBØPT . . . . .                                                            | 1083 |
| 237   | TØ Array, Subroutines TBØPT and ATBØPT . . . . .                                                                                           | 1094 |



| Table | Title                                                                                                                  | Page |
|-------|------------------------------------------------------------------------------------------------------------------------|------|
| 161   | DTED2 Array, Variable Data Subarray for Trailing Edge<br>Flap-Type Control Surfaces . . . . .                          | 786  |
| 162   | DSPDK Array, Variable Data Subarray, Spoiler Control<br>Surface Analysis . . . . .                                     | 793  |
| 163   | DFLPK Array, Variable Data Subarray, Trailing Edge Flap<br>Control Surface Analysis . . . . .                          | 794  |
| 164   | DAILK Array, Variable Data Subarray, Aileron, Elevator,<br>and Rudder Control Surface Analysis. . . . .                | 795  |
| 165   | DFSP Array, Variable Data Subarray, TE Flap-Type Control<br>Surface Support Structure Distribution Constants . . . . . | 797  |
| 166   | TG Array . . . . .                                                                                                     | 799  |
| 167   | TGA Array . . . . .                                                                                                    | 802  |
| 168   | YC Array, Overlays (14,0), (15,0), and (17,0). . . . .                                                                 | 804  |
| 169   | TWG Array . . . . .                                                                                                    | 807  |
| 170   | CCW Array . . . . .                                                                                                    | 814  |
| 171   | CCI, CCL, and CCT Arrays, Overlay (14,0) . . . . .                                                                     | 818  |
| 172   | TCS Array, Overlay (14,0). . . . .                                                                                     | 823  |
| 173   | CKD Array, Subroutine LETEI . . . . .                                                                                  | 826  |
| 174   | CLEI and CTEI Arrays . . . . .                                                                                         | 827  |
| 175   | CIØY Array . . . . .                                                                                                   | 829  |
| 176   | TGR Array, Subroutine LEWT . . . . .                                                                                   | 831  |
| 177   | TST Array, Subroutine LEWT . . . . .                                                                                   | 834  |
| 178   | TTED Array . . . . .                                                                                                   | 836  |
| 179   | TST Array, Subroutine TEWTI and TEDEV. . . . .                                                                         | 839  |
| 180   | TGR Array, Subroutine TEWT and TEWTI . . . . .                                                                         | 845  |
| 181   | TGR Array, Subroutine LETEI. . . . .                                                                                   | 849  |
| 182   | TST Array, Subroutine LETEI. . . . .                                                                                   | 852  |
| 183   | TE Array . . . . .                                                                                                     | 855  |
| 184   | TST Array, Subroutine WLETE. . . . .                                                                                   | 857  |
| 185   | CMII Array . . . . .                                                                                                   | 859  |
| 186   | CCDLI Array, Overlays (15,0), (16,0), and (17,0) . . . . .                                                             | 862  |
| 187   | CFL1I and CFL2I Arrays . . . . .                                                                                       | 868  |
| 188   | CKD Array, Overlay (15,0). . . . .                                                                                     | 870  |
| 189   | TVMT Array . . . . .                                                                                                   | 873  |
| 190   | T Array, Locations 201-900 . . . . .                                                                                   | 876  |
| 191   | Subroutine References for T(201)-T(900) Variables. . . . .                                                             | 884  |
| 192   | TVF Array . . . . .                                                                                                    | 891  |
| 193   | CTBW Array . . . . .                                                                                                   | 898  |
| 194   | CTBI Array . . . . .                                                                                                   | 901  |
| 195   | WCG Array . . . . .                                                                                                    | 904  |
| 196   | ACL Array . . . . .                                                                                                    | 905  |
| 197   | ACLT Array . . . . .                                                                                                   | 908  |
| 198   | ACVMT and V Arrays . . . . .                                                                                           | 909  |
| 199   | TEIGJ Array. . . . .                                                                                                   | 911  |
| 200   | ENQ Array . . . . .                                                                                                    | 912  |

| Table | Title                                                                                                                                      | Page |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------|------|
| 201   | ENQC Array . . . . .                                                                                                                       | 914  |
| 202   | CNT Array. . . . .                                                                                                                         | 916  |
| 203   | STRESS Array . . . . .                                                                                                                     | 920  |
| 204   | ENX Array. . . . .                                                                                                                         | 922  |
| 205   | EL Array . . . . .                                                                                                                         | 924  |
| 206   | IEL Array. . . . .                                                                                                                         | 927  |
| 207   | SPB Array. . . . .                                                                                                                         | 929  |
| 208   | SPN Array. . . . .                                                                                                                         | 931  |
| 209   | TF Array . . . . .                                                                                                                         | 932  |
| 210   | W Array, Subroutine WEIGH1 . . . . .                                                                                                       | 935  |
| 211   | TX Array . . . . .                                                                                                                         | 937  |
| 212   | TXS Array. . . . .                                                                                                                         | 943  |
| 213   | STRING Array . . . . .                                                                                                                     | 946  |
| 214   | W Array, Subroutine WEIGH2 . . . . .                                                                                                       | 949  |
| 215   | TSF Array. . . . .                                                                                                                         | 951  |
| 216   | TA Array . . . . .                                                                                                                         | 955  |
| 217   | CD Array, Locations 1-400, Stiffness Data Arrays . . . . .                                                                                 | 957  |
| 218   | TDC Array, Overlay (18,0). . . . .                                                                                                         | 961  |
| 219   | DDUC and DDLC Arrays . . . . .                                                                                                             | 968  |
| 220   | DDIS Array . . . . .                                                                                                                       | 970  |
| 221   | DDFS and DDRS Arrays . . . . .                                                                                                             | 972  |
| 222   | DDSTR Array. . . . .                                                                                                                       | 974  |
| 223   | DSPLØ Array, Analysis Constants. . . . .                                                                                                   | 977  |
| 224   | TDC Array, Overlays (9,0) and (10,0) . . . . .                                                                                             | 978  |
| 225   | TSC Array. . . . .                                                                                                                         | 990  |
| 226   | TSEC Array . . . . .                                                                                                                       | 998  |
| 227   | TSS Array, Subroutines SFSCH and TSCH. . . . .                                                                                             | 1006 |
| 228   | TSS Array, Subroutine STRIB. . . . .                                                                                                       | 1014 |
| 229   | TSS Array, Subroutine SIWEB. . . . .                                                                                                       | 1017 |
| 230   | TWT Array, Locations 1-330, Weight Analysis Data and<br>Constants. . . . .                                                                 | 1020 |
| 231   | TWT Array, Locations 331-400, Section Weight Per<br>Inch Data, Subroutine WTPIN. . . . .                                                   | 1047 |
| 232   | TWT Array, Locations 331-400, Center-Section Weight<br>Data, Subroutine CSECN . . . . .                                                    | 1053 |
| 233   | TWT Array, Locations 1 Through 50 and 331 Through<br>400, Torque-Box Weight Increment Data for Pivot<br>Designs, Subroutine DLPVT. . . . . | 1057 |
| 234   | PT Array, Subroutine PIVØT . . . . .                                                                                                       | 1065 |
| 235   | S Array, Subroutine PIVØT. . . . .                                                                                                         | 1075 |
| 236   | TSS Array, Total Weight Summary Data, Subroutines<br>TBØPT and ATBØPT . . . . .                                                            | 1083 |
| 237   | TØ Array, Subroutines TBØPT and ATBØPT . . . . .                                                                                           | 1094 |

# LIST OF TABLES

| Table | Title                                                           | Page |
|-------|-----------------------------------------------------------------|------|
| A-1   | Appendix References for Wing and Empennage Module Routines. . . | 1124 |
| B-1   | Appendix References for Overlay (8,0) Routines. . . . .         | 1133 |
| B-2   | Appendix References for Overlay (14,0) Routines . . . . .       | 1134 |
| B-3   | Appendix References for Overlay (15,0) Routines . . . . .       | 1135 |
| B-4   | Appendix References for Overlay (16,0) Routines . . . . .       | 1136 |
| B-5   | Appendix References for Overlay (17,0) Routines . . . . .       | 1137 |
| C-1   | Appendix References for Overlay (9,0) Routines. . . . .         | 1604 |
| C-2   | Appendix References for Overlay (10,0) Routines . . . . .       | 1605 |
| D-1   | Appendix References for Overlay (18,0) Routines . . . . .       | 1940 |
| E-1   | Appendix References for Overlay (9,0) Routines. . . . .         | 2180 |
| E-2   | Appendix References for Overlay (14,0) Routines . . . . .       | 2181 |
| E-3   | Appendix References for Overlay (15,0) Routines . . . . .       | 2182 |
| E-4   | Appendix References for Overlay (16,0) Routines . . . . .       | 2183 |
| E-5   | Appendix References for Overlay (17,0) Routines . . . . .       | 2184 |
| F-1   | Appendix References for Overlay (9,0) Routines. . . . .         | 2419 |
| F-2   | Appendix References for Overlay (10,0) Routines . . . . .       | 2420 |
| F-3   | Appendix References for Overlay (18,0) Routines . . . . .       | 2421 |

APPENDIX D

PROGRAM FLOW CHARTS, OVERLAY

(18,0)

TABLE D-1. APPENDIX REFERENCES FOR  
OVERLAY (18,0) ROUTINES

| Routine | Appendix Reference Pages |                     |
|---------|--------------------------|---------------------|
|         | Program<br>Flow Charts   | Program<br>Listings |
| ØLAY18  | 1970                     | 2554                |
| ACEIGJ  | 2096                     | 2629                |
| ACLØAD  | 1982                     | 2561                |
| ACMRSK  | 2074                     | 2615                |
| ACNSTR  | 2100                     | 2632                |
| ACPRØG  | 2000                     | 2572                |
| ACPRTA  | 2111                     | 2642                |
| ACSTRG  | 2079                     | 2619                |
| ACWFDH  | 2027                     | 2590                |
| ACWMS   | 2012                     | 2580                |
| ACWRBS  | 2044                     | 2598                |
| ACWSTR  | 2057                     | 2606                |
| ASTIFF  | 2090                     | 2624                |
| ATBØPT  | 1973                     | 2554                |
| AVLØAD  | 1996                     | 2569                |
| BHDJT   | 2128/1734                | 2650/2470           |
| CKSFDH  | 2034                     | 2594                |
| CKSTAB  | 2006                     | 2577                |
| CSECW   | 2138/1680                | 2651/2453           |
| DEADW   | 2136/1638                | 2651/2432           |
| DLPVT   | 2146/1684                | 2652/2455           |
| DWYBA   | 2134/1633                | 2651/2429           |
| PIVØT   | 2140/1660                | 2651/2443           |
| PRTB    | 2148/1902                | 2652/2546           |
| PRTC    | 2150/1907                | 2652/2548           |
| PRTH    | 2152/1703                | 2653/2466           |
| RTRIB   | 2130/1887                | 2651/2541           |
| TEE     | 2142/1672                | 2652/2450           |
| TEL     | 2144/1676                | 2652/2452           |
| TEMPC   | 1990                     | 2566                |
| WEIGH1  | 2038                     | 2595                |
| WEIGH2  | 2086                     | 2622                |
| WTCAL   | 2126/1871                | 2650/2531           |
| WTPIN   | 2132/1890                | 2651/2542           |
| XN      | 2123                     | 2650                |

OVERLAY (18,0)

TORQUE-BOX STRUCTURAL SYNTHESIS/WEIGHT ANALYSIS  
FOR ADVANCED COMPOSITE DESIGNS

**PROGRAM TABLE OF CONTENTS AND REFERENCES,  
AND TABLE OF DIAGNOSTICS**

FORTRAN MODULE MIMO AND EXPERIENCE MODULE -

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - PROCEDURES

|          |      |    |          |      |          |      |
|----------|------|----|----------|------|----------|------|
| (000019) | 2.04 | 18 | (000017) | 2.03 | (000017) | 2.03 |
| (000027) | 2.08 | 20 | (000025) | 2.07 | (000025) | 2.07 |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE AUTOPT

|          |      |        |          |         |
|----------|------|--------|----------|---------|
| (000030) | 5.01 | AUTOPT | (001509) | 35.11-X |
| (000121) | 5.04 | 300    | (000117) | 5.03    |
| (000122) | 5.05 | 301    |          |         |
| (000123) | 5.06 | 302    |          |         |
| (000124) | 5.07 | 304    | (000121) | 5.04    |
| (000125) | 5.08 | 305    |          |         |
| (000131) | 5.09 | 306    | (000117) | 5.03    |
| (000132) | 5.10 | 307    |          |         |
| (000133) | 5.11 | 310    | (000131) | 5.09    |
| (000137) | 5.12 | 312    |          |         |
| (000138) | 5.13 | 314    |          |         |
| (000141) | 5.01 | 316    | (000136) | 5.11    |
| (000142) | 5.02 | 318    |          |         |
| (000150) | 5.03 | 400    | (000122) | 5.05    |
|          |      |        | (000130) | 5.13    |
|          |      |        | (000141) | 5.01    |
| (000150) | 5.04 |        | (000160) | 5.05    |
| (000160) | 5.05 | 4000   |          |         |
| (000170) | 5.06 | 401    |          |         |
| (000174) | 5.11 | 402    |          |         |
| (000175) | 5.12 | 403    | (000171) | 5.08    |
| (000177) | 5.14 | 404    | (000173) | 5.10    |
| (000178) | 5.15 | 405    |          |         |
| (000180) | 5.17 | 406    | (000176) | 5.13    |
| (000182) | 5.18 | 407    | (000178) | 5.15    |
| (000184) | 5.21 | 408    |          |         |
| (000188) | 5.22 | 409    | (000181) | 5.18    |
| (000189) | 5.24 | 4090   | (000183) | 5.20    |
| (000204) | 5.25 | 410    |          |         |
| (000207) | 5.26 | 411    | (000195) | 5.23    |
| (000208) | 5.29 | 412    |          |         |
| (000211) | 5.31 | 413    | (000206) | 5.27    |
| (000212) | 5.32 | 4130   |          |         |
| (000218) | 5.33 | 414    | (000210) | 5.30    |
| (000223) | 7.01 | 415    | (000195) | 5.23    |
| (000226) | 7.03 | 4150   | (000218) | 5.33    |
| (000227) | 7.04 | 4151   |          |         |
| (000229) | 7.05 | 4152   | (000225) | 7.02    |
| (000230) | 7.07 | 4153   |          |         |
| (000246) | 7.10 | 416    | (000228) | 7.05    |
| (000247) | 7.12 | 4160   | (000218) | 5.33    |
| (000250) | 7.13 | 417    |          |         |
| (000252) | 7.14 | 418    | (000246) | 7.11    |
| (000263) | 7.15 | 420    |          |         |
| (000264) | 7.16 | 421    |          |         |
| (000265) | 7.17 | 422    |          |         |
| (000268) | 7.18 | 423    | (000264) | 7.15    |
| (000270) | 7.20 |        | (000272) | 7.22    |
| (000271) | 7.21 | 424    |          |         |
| (000272) | 7.22 | 425    | (000270) | 7.20    |
| (000273) | 7.23 | 426    |          |         |
| (000278) | 7.26 | 427    | (000277) | 7.24    |
| (000281) | 7.28 | 428    |          |         |
| (000285) | 7.30 | 429    | (000280) | 7.27    |
| (000286) | 7.31 | 430    |          |         |
| (000287) | 7.32 | 431    | (000285) | 7.30    |



| 00/14/74 |           | TABLE OF CONTENTS AND REFERENCES |            | AUTOFLOW CHART SET - SHEET |              |               |          | PAGE 2 |          |      |          |      |
|----------|-----------|----------------------------------|------------|----------------------------|--------------|---------------|----------|--------|----------|------|----------|------|
| CARD ID  | PAGE/BOOK | NAME                             | REFERENCES | ISOLATE                    | SEQUENCE NO. | AND PAGE/BOOK |          |        |          |      |          |      |
| (000200) | 7.33      | 432                              |            |                            |              |               |          |        |          |      |          |      |
| (000200) | 7.34      | 433                              | (000207)   | 7.32                       |              |               |          |        |          |      |          |      |
| (000200) | 7.35      | 434                              |            |                            |              |               |          |        |          |      |          |      |
| (000301) | 7.36      | 440                              | (000301)   | 8.25                       | (000312)     | 7.14          | (000303) | 7.15   | (000264) | 7.16 | (000265) | 7.17 |
|          |           |                                  | (000303)   | 7.34                       |              |               |          |        |          |      |          |      |
| (000302) | 7.37      |                                  | (000303)   | 7.30                       |              |               |          |        |          |      |          |      |
| (000303) | 7.38      | 441                              |            |                            |              |               |          |        |          |      |          |      |
| (000306) | 8.02      | 442                              |            |                            |              |               |          |        |          |      |          |      |
| (000310) | 8.04      | 443                              |            |                            |              |               |          |        |          |      |          |      |
| (000311) | 8.05      |                                  | (000314)   | 8.08                       |              |               |          |        |          |      |          |      |
| (000313) | 8.07      | 444                              |            |                            |              |               |          |        |          |      |          |      |
| (000314) | 8.08      | 445                              | (000312)   | 8.06                       |              |               |          |        |          |      |          |      |
| (000320) | 8.09      | 450                              | (000305)   | 8.01                       | (000309)     | 8.03          |          |        |          |      |          |      |
| (000321) | 8.10      | 451                              |            |                            |              |               |          |        |          |      |          |      |
| (000326) | 8.12      | 460                              | (000320)   | 8.09                       |              |               |          |        |          |      |          |      |
| (000328) | 8.13      | 500                              | (000323)   | 8.11                       |              |               |          |        |          |      |          |      |
| (000333) | 8.14      | 8900                             |            |                            |              |               |          |        |          |      |          |      |
| (000336) | 8.16      |                                  | (000330)   | 8.17                       |              |               |          |        |          |      |          |      |
| (000338) | 8.17      | 8901                             |            |                            |              |               |          |        |          |      |          |      |
| (000350) | 8.20      | 796                              |            |                            |              |               |          |        |          |      |          |      |
| (000305) | 8.01      | 700                              | (000301)   | 8.20                       |              |               |          |        |          |      |          |      |
| (000306) | 8.02      | 7000                             |            |                            |              |               |          |        |          |      |          |      |
| (000307) | 8.03      |                                  | (000309)   | 8.04                       |              |               |          |        |          |      |          |      |
| (000309) | 8.04      | 7001                             |            |                            |              |               |          |        |          |      |          |      |
| (000309) | 8.06      | 701                              | (000305)   | 8.01                       |              |               |          |        |          |      |          |      |
| (000400) | 9.07      |                                  | (000401)   | 9.00                       |              |               |          |        |          |      |          |      |
| (000401) | 9.08      | 7010                             |            |                            |              |               |          |        |          |      |          |      |
| (000405) | 9.10      |                                  | (000406)   | 9.11                       |              |               |          |        |          |      |          |      |
| (000406) | 9.11      | 702                              |            |                            |              |               |          |        |          |      |          |      |
| (000413) | 9.12      | 710                              |            |                            |              |               |          |        |          |      |          |      |
| (000417) | 9.14      |                                  | (000421)   | 9.16                       |              |               |          |        |          |      |          |      |
| (000421) | 9.16      | 711                              |            |                            |              |               |          |        |          |      |          |      |
| (000420) | 9.19      | 712                              | (000425)   | 9.18                       |              |               |          |        |          |      |          |      |
| (000430) | 9.20      | 713                              |            |                            |              |               |          |        |          |      |          |      |
| (000430) | 9.22      | 714                              | (000425)   | 9.18                       | (000420)     | 9.10          |          |        |          |      |          |      |
| (000442) | 9.24      | 715                              |            |                            |              |               |          |        |          |      |          |      |
| (000446) | 10.01     | 716                              | (000441)   | 9.23                       |              |               |          |        |          |      |          |      |
| (000452) | 10.02     | 720                              | (000444)   | 9.24                       |              |               |          |        |          |      |          |      |
| (000457) | 10.04     |                                  | (000450)   | 10.05                      |              |               |          |        |          |      |          |      |
| (000450) | 10.05     | 721                              |            |                            |              |               |          |        |          |      |          |      |
| (000450) | 10.06     | 750                              |            |                            |              |               |          |        |          |      |          |      |
| (000470) | 10.07     |                                  | (000470)   | 10.12                      |              |               |          |        |          |      |          |      |
| (000472) | 10.09     | 751                              |            |                            |              |               |          |        |          |      |          |      |
| (000474) | 10.11     | 752                              |            |                            |              |               |          |        |          |      |          |      |
| (000476) | 10.12     | 753                              | (000471)   | 10.00                      | (000473)     | 10.10         |          |        |          |      |          |      |
| (000483) | 10.15     | 754                              |            |                            |              |               |          |        |          |      |          |      |
| (000484) | 10.16     |                                  | (000486)   | 10.17                      |              |               |          |        |          |      |          |      |
| (000486) | 10.17     | 755                              |            |                            |              |               |          |        |          |      |          |      |
| (000491) | 10.19     | 756                              | (000480)   | 10.10                      |              |               |          |        |          |      |          |      |
| (000496) | 10.22     |                                  | (000497)   | 10.23                      |              |               |          |        |          |      |          |      |
| (000497) | 10.23     | 761                              |            |                            |              |               |          |        |          |      |          |      |
| (000502) | 10.24     | 770                              | (000480)   | 10.10                      |              |               |          |        |          |      |          |      |
| (000503) | 10.25     |                                  | (000505)   | 10.26                      |              |               |          |        |          |      |          |      |
| (000505) | 10.26     | 771                              |            |                            |              |               |          |        |          |      |          |      |
| (000512) | 10.30     | 780                              |            |                            |              |               |          |        |          |      |          |      |
| (000514) | 10.32     | 781                              |            |                            |              |               |          |        |          |      |          |      |
| (000515) | 10.33     | 782                              |            |                            |              |               |          |        |          |      |          |      |
| (000519) | 10.34     | 783                              | (000513)   | 10.31                      | (000514)     | 10.32         |          |        |          |      |          |      |
| (000520) | 10.35     |                                  | (000521)   | 10.36                      |              |               |          |        |          |      |          |      |
| (000521) | 10.36     | 784                              |            |                            |              |               |          |        |          |      |          |      |
| (000526) | 10.38     | 785                              |            |                            |              |               |          |        |          |      |          |      |
| (000532) | 11.01     | 790                              | (000301)   | 8.20                       |              |               |          |        |          |      |          |      |
| (000533) | 11.02     | 791                              | (000527)   | 10.37                      |              |               |          |        |          |      |          |      |
| (000538) | 11.03     | 799                              | (000529)   | 10.39                      | (000532)     | 11.01         |          |        |          |      |          |      |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACLOAD

(000540) 14.01 ACLOAD (001453) 32.23-X

CHART TITLE - SUBROUTINE ACROD

|          |       |       |          |         |
|----------|-------|-------|----------|---------|
| (001150) | 20.01 | ACROD | (001150) | 20.07-X |
| (001177) | 20.01 | 100   |          |         |
| (001179) | 20.03 | 100   |          |         |
| (001181) | 20.05 | 100   | (001170) | 20.02   |
| (001182) | 20.06 | 100   | (001180) | 20.04   |
| (001183) | 20.07 | 100   | (001180) | 20.04   |
| (001193) | 20.11 | 100   | (001182) | 20.06   |
| (001193) | 20.12 |       | (001243) | 20.30   |
| (001207) | 20.14 | 101   | (001203) | 20.13   |
| (001211) | 20.16 | 102   | (001203) | 20.13   |
| (001227) | 20.24 | 103   |          |         |
| (001243) | 20.30 | 103   | (001226) | 20.23   |
| (001245) | 20.31 | 150   |          |         |
| (001257) | 20.02 | 1500  |          |         |
| (001259) | 20.03 | 1501  | (001256) | 20.01   |
| (001259) | 20.04 | 1502  | (001257) | 20.02   |
| (001261) | 20.05 | 1503  | (001258) | 20.03   |
| (001262) | 20.06 |       | (001263) | 20.07   |
| (001263) | 20.07 | 151   |          |         |
| (001265) | 20.09 |       | (001311) | 20.32   |
| (001268) | 20.11 |       | (001270) | 20.12   |
| (001270) | 20.12 | 152   |          |         |
| (001273) | 20.14 |       | (001295) | 20.17   |
| (001295) | 20.17 | 153   |          |         |
| (001298) | 20.19 |       | (001292) | 20.21   |
| (001292) | 20.21 | 154   |          |         |
| (001298) | 20.23 | 155   |          |         |
| (001303) | 20.26 |       | (001306) | 20.29   |
| (001306) | 20.29 | 156   |          |         |
| (001311) | 20.32 | 159   | (001295) | 20.22   |
| (001315) | 20.33 | 199   |          |         |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACPR00

|          |       |        |          |        |
|----------|-------|--------|----------|--------|
| (001325) | 32.01 | ACPR00 | (000019) | 2.04-X |
| (001403) | 32.01 | 500    |          |        |
| (001406) | 32.03 |        | (001409) | 32.04  |
| (001409) | 32.04 | 501    |          |        |
| (001429) | 32.06 | 503    |          |        |
| (001430) | 32.07 |        | (001431) | 32.08  |
| (001431) | 32.08 | 5030   |          |        |
| (001434) | 32.11 | 5031   |          |        |
| (001435) | 32.12 | 5032   | (001433) | 32.10  |
| (001436) | 32.13 | 5033   |          |        |
| (001441) | 32.14 | 5035   | (001435) | 32.12  |
| (001442) | 32.15 | 5036   |          |        |
| (001443) | 32.16 | 5037   |          |        |
| (001445) | 32.18 | 5038   |          |        |
| (001446) | 32.19 | 5039   | (001442) | 32.15  |
| (001447) | 32.20 | 5040   | (001444) | 32.17  |
| (001449) | 32.22 | 5041   |          |        |
| (001453) | 32.23 | 505    | (001441) | 32.14  |
| (001462) | 33.01 |        | (001446) | 32.19  |
| (001463) | 33.02 | 506    | (001440) | 32.21  |
| (001463) | 33.02 | 506    |          |        |
| (001470) | 33.06 |        | (001471) | 33.06  |
| (001471) | 33.06 | 507    |          |        |
| (001480) | 33.09 | 100    |          |        |
| (001482) | 33.11 | 101    |          |        |
| (001486) | 33.13 | 102    | (001481) | 33.10  |
| (001487) | 33.14 |        | (001489) | 33.16  |
| (001490) | 33.16 | 103    |          |        |
| (001492) | 33.17 | 150    |          |        |
| (001493) | 33.18 |        | (001496) | 33.19  |
| (001495) | 33.19 | 151    |          |        |
| (001499) | 33.20 | 200    |          |        |
| (001504) | 33.22 | 2000   | (001501) | 33.21  |

| 05/14-74 |            | TABLE OF CONTENTS AND REFERENCES |            | AUTOFLOW CHART SET - 5-DEEP       |       |           |       | PAGE 3    |       |
|----------|------------|----------------------------------|------------|-----------------------------------|-------|-----------|-------|-----------|-------|
| CARD NO  | PAGE/BOX   | REF                              | REFERENCES | ISOLATE SEQUENCE NO. AND PAGE/BOX |       |           |       |           |       |
| (000001) | 14.01 370  |                                  |            |                                   |       |           |       |           |       |
| (000002) | 14.02      | (000007)                         | 14.03      |                                   |       |           |       |           |       |
| (000003) | 14.03 301  |                                  |            |                                   |       |           |       |           |       |
| (000004) | 14.05      | (000008)                         | 14.06      |                                   |       |           |       |           |       |
| (000005) | 14.06 302  |                                  |            |                                   |       |           |       |           |       |
| (000006) | 14.08 310  | (000009)                         | 14.07      |                                   |       |           |       |           |       |
| (000007) | 14.09      | (000010)                         | 14.11      |                                   |       |           |       |           |       |
| (000008) | 14.11 311  |                                  |            |                                   |       |           |       |           |       |
| (000009) | 14.14      | (000012)                         | 14.16      |                                   |       |           |       |           |       |
| (000010) | 14.16 312  |                                  |            |                                   |       |           |       |           |       |
| (000011) | 14.19 320  | (000004)                         | 14.07      |                                   |       |           |       |           |       |
| (000012) | 14.21 3240 |                                  |            |                                   |       |           |       |           |       |
| (000013) | 15.01 3525 | (000040)                         | 14.20      |                                   |       |           |       |           |       |
| (000014) | 15.02 3530 | (000051)                         | 14.21      |                                   |       |           |       |           |       |
| (000015) | 15.04      | (000017)                         | 15.11      |                                   |       |           |       |           |       |
| (000016) | 15.06 3600 |                                  |            |                                   |       |           |       |           |       |
| (000017) | 15.07 3505 |                                  |            |                                   |       |           |       |           |       |
| (000018) | 15.08 3503 | (000056)                         | 15.05      | (000007)                          | 15.06 |           |       |           |       |
| (000019) | 15.09 321  |                                  |            |                                   |       |           |       |           |       |
| (000020) | 15.13 3211 |                                  |            |                                   |       |           |       |           |       |
| (000021) | 15.14 3210 | (000057)                         | 15.12      |                                   |       |           |       |           |       |
| (000022) | 15.16 322  |                                  |            |                                   |       |           |       |           |       |
| (000023) | 15.17 323  | (000070)                         | 15.15      |                                   |       |           |       |           |       |
| (000024) | 15.18      | (000075)                         | 15.19      |                                   |       |           |       |           |       |
| (000025) | 15.19 324  |                                  |            |                                   |       |           |       |           |       |
| (000026) | 15.21 3605 |                                  |            |                                   |       |           |       |           |       |
| (000027) | 16.01 3510 |                                  |            |                                   |       |           |       |           |       |
| (000028) | 16.03      | (000087)                         | 16.08      |                                   |       |           |       |           |       |
| (000029) | 16.08 325  | (000078)                         | 15.15      | (000077)                          | 15.20 | (000070)  | 15.21 | (000083)  | 16.02 |
| (000030) | 16.10      | (0000713)                        | 16.19      | (000016)                          | 17.10 |           |       | (000085)  | 16.04 |
| (000031) | 16.10      | (000090)                         | 16.12      |                                   |       |           |       |           |       |
| (000032) | 16.12 3250 |                                  |            |                                   |       |           |       |           |       |
| (000033) | 16.15 3252 | (000084)                         | 16.03      | (000711)                          | 16.10 |           |       |           |       |
| (000034) | 16.16 3251 | (000090)                         | 16.14      |                                   |       |           |       |           |       |
| (000035) | 16.17 3250 |                                  |            |                                   |       |           |       |           |       |
| (000036) | 16.20 3615 | (000070)                         | 16.16      |                                   |       |           |       |           |       |
| (000037) | 16.25 326  |                                  |            |                                   |       |           |       |           |       |
| (000038) | 16.27 327  |                                  |            |                                   |       |           |       |           |       |
| (000039) | 17.01 328  | (000080)                         | 16.24      |                                   |       |           |       |           |       |
| (000040) | 17.02 329  | (000020)                         | 16.24      | (0000730)                         | 16.26 | (0000732) | 16.27 |           |       |
| (000041) | 17.05 330  |                                  |            |                                   |       |           |       |           |       |
| (000042) | 17.07 331  |                                  |            |                                   |       |           |       |           |       |
| (000043) | 17.09 370  | (000040)                         | 17.04      | (000045)                          | 17.06 | (000051)  | 17.11 | (000054)  | 16.01 |
|          |            | (0000771)                        | 16.12      |                                   |       |           |       | (0000790) | 16.05 |
| (000045) | 17.10 337  | (0000750)                        | 17.08      |                                   |       |           |       |           |       |
| (000046) | 17.11 338  | (0000705)                        | 16.06      |                                   |       |           |       |           |       |
| (000047) | 17.12 370  | (000084)                         | 17.09      |                                   |       |           |       |           |       |
| (000048) | 17.13 3600 |                                  |            |                                   |       |           |       |           |       |
| (000049) | 17.14 3605 |                                  |            |                                   |       |           |       |           |       |
| (000050) | 17.16 3702 |                                  |            |                                   |       |           |       |           |       |
| (000051) | 17.17      | (000015)                         | 17.10      |                                   |       |           |       |           |       |
| (000052) | 17.18 3701 |                                  |            |                                   |       |           |       |           |       |
| (000053) | 18.01 333  | (000051)                         | 17.11      |                                   |       |           |       |           |       |
| (000054) | 18.02 334  |                                  |            |                                   |       |           |       |           |       |
| (000055) | 18.04 335  |                                  |            |                                   |       |           |       |           |       |
| (000056) | 18.05 336  | (000086)                         | 18.03      | (000090)                          | 18.04 | (000053)  | 18.06 |           |       |
| (000057) | 18.06 336  | (000062)                         | 17.10      | (0000707)                         | 19.01 | (0000700) | 19.02 |           |       |
| (000058) | 18.07 336  |                                  |            |                                   |       |           |       |           |       |
| (000059) | 18.09 341  | (000067)                         | 18.08      |                                   |       |           |       |           |       |
| (000060) | 18.11 342  |                                  |            |                                   |       |           |       |           |       |
| (000061) | 18.12 340  | (000067)                         | 18.08      | (000076)                          | 18.10 | (0000777) | 18.11 | (000074)  | 18.16 |
| (000062) | 18.13 343  | (0000777)                        | 18.11      |                                   |       |           |       |           |       |
| (000063) | 18.15 344  |                                  |            |                                   |       |           |       |           |       |
| (000064) | 18.16 345  | (000061)                         | 18.14      | (000077)                          | 19.08 | (0000799) | 19.09 |           |       |
| (000065) | 18.01 346  | (000062)                         | 17.10      |                                   |       |           |       |           |       |
| (000066) | 18.02 347  |                                  |            |                                   |       |           |       |           |       |
| (000067) | 18.03 348  |                                  |            |                                   |       |           |       |           |       |
| (000068) | 18.05 349  |                                  |            |                                   |       |           |       |           |       |
| (000069) | 18.07 350  |                                  |            |                                   |       |           |       |           |       |
| (000070) | 18.09 351  |                                  |            |                                   |       |           |       |           |       |
| (000071) | 18.10 3700 | (000059)                         | 15.08      | (000062)                          | 16.15 | (000066)  | 17.12 | (000007)  | 17.13 |
| (000072) | 18.12 360  | (000033)                         | 14.10      | (000004)                          | 17.09 | (000010)  | 17.15 |           |       |
| (000073) | 18.14      | (000070)                         | 19.15      |                                   |       |           |       |           |       |

| 06/14/74 | TABLE OF CONTENTS AND REFERENCES |      | AUTOFLOW CHART SET - SHEEP |        |                          | PAGE  |
|----------|----------------------------------|------|----------------------------|--------|--------------------------|-------|
| CARD NO  | PAGE/PC                          | NAME | REFERENCES                 | SOURCE | SEQUENCE NO. AND PAGE(S) |       |
| 1000005  | 19.15                            | 301  |                            |        |                          |       |
| 1000032  | 19.17                            | 302  |                            |        |                          |       |
| 1000041  | 19.21                            |      | 1000041                    | 19.23  |                          |       |
| 1000044  | 19.23                            | 303  |                            |        |                          |       |
| 1000048  | 19.25                            | 304  |                            |        |                          |       |
| 1000050  | 19.27                            |      | 1000050                    | 19.29  |                          |       |
| 1000056  | 19.30                            | 305  |                            |        |                          |       |
| 1000059  | 19.31                            | 306  | 1000051                    | 19.16  | 1000071                  | 19.24 |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE TEMPC

|         |       |       |         |         |
|---------|-------|-------|---------|---------|
| 1000071 | 22.01 | TEMPC | 1001453 | 22.25-X |
| 1000087 | 22.03 |       | 1002075 | 22.01   |
| 1000090 | 22.03 | 200   |         |         |
| 1000101 | 22.04 | 201   | 1002170 | 22.03   |
| 1000110 | 22.07 | 200   | 1002120 | 22.03   |
| 1000202 | 22.09 |       | 1002087 | 23.08   |
| 1000227 | 22.11 | 7     |         |         |
| 1000227 | 22.11 |       | 1002087 | 22.12   |
| 1000229 | 22.13 | 6     | 1002082 | 22.03   |
| 1000235 | 22.16 | 1     |         |         |
| 1000236 | 22.16 |       | 1002030 | 22.17   |
| 1000236 | 22.16 | 8     | 1002073 | 22.12   |
| 1000265 | 23.04 | 201   |         |         |
| 1000267 | 23.06 | 2     | 1000004 | 23.03   |
| 1000275 | 23.09 | 3     |         |         |
| 1000277 | 23.10 | 4     | 1000074 | 23.08   |
| 1000278 | 23.11 | 5     | 1000076 | 23.09   |
| 1000282 | 23.13 | 230   |         |         |
| 1000289 | 23.15 |       | 1000000 | 23.17   |
| 1000290 | 23.17 | 233   |         |         |
| 1000295 | 23.18 | 240   |         |         |
| 1001007 | 23.19 | 100   | 1002081 | 23.12   |
| 1001008 | 23.20 |       | 1001004 | 23.05   |
| 1001008 | 23.21 |       | 1001010 | 23.02   |
| 1001010 | 23.22 | 1000  |         |         |
| 1001013 | 23.24 |       | 1001014 | 23.25   |
| 1001014 | 23.25 | 101   |         |         |
| 1001017 | 23.27 | 102   |         |         |
| 1001020 | 24.01 | 103   | 1001017 | 23.27   |
| 1001025 | 24.03 |       | 1001026 | 24.04   |
| 1001026 | 24.04 | 104   |         |         |
| 1001029 | 24.06 | 105   | 1001017 | 23.27   |
| 1001047 | 24.11 | 2400  | 1001044 | 24.10   |
| 1001048 | 24.12 | 245   |         |         |
| 1001050 | 24.14 | 240   | 1001047 | 24.11   |
| 1001057 | 24.15 | 243   |         |         |
| 1001062 | 25.01 | 247   | 1001047 | 24.11   |
| 1001061 | 25.03 | 250   | 1001050 | 24.14   |
| 1001064 | 25.05 | 109   | 1001016 | 23.26   |
| 1001068 | 25.07 | 255   | 1001044 | 24.10   |
| 1001069 | 25.08 |       | 1001050 | 24.13   |
| 1001073 | 25.10 | 261   | 1001050 | 24.16   |
| 1001077 | 25.12 | 262   | 1001054 | 25.02   |
| 1001082 | 25.14 |       |         |         |
| 1001083 | 25.15 | 263   | 1001083 | 25.15   |
| 1001085 | 25.16 | 264   | 1001076 | 25.11   |
| 1001088 | 25.17 | 269   | 1001072 | 25.09   |
| 1001088 | 25.20 |       | 1001086 | 25.02   |
| 1001088 | 25.22 | 2692  |         |         |
| 1001089 | 25.23 | 2695  | 1001087 | 25.08   |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

| 06/14/74 | TABLE OF CONTENTS AND REFERENCES |      | AUTOFLOW CHART SET - SIZEP |                                    | PAGE 6                        |
|----------|----------------------------------|------|----------------------------|------------------------------------|-------------------------------|
| CARD ID  | PAGE/BOX                         | NAME | REFERENCES                 | (SOURCE SEQUENCE NO. AND PAGE/BOX) |                               |
| 10015001 | 33.24                            | 2001 | 10015051                   | 33.23                              |                               |
| 10015121 | 34.01                            | 201  | 10016401                   | 35.35                              |                               |
| 10015161 | 34.03                            | 202  | 10015131                   | 34.02                              | 10016401 35.35                |
| 10015181 | 34.05                            | 203  | 10015131                   | 34.02                              |                               |
| 10015211 | 34.06                            | 210  | 10115011                   | 33.21                              | 10015051 33.23 10015091 33.45 |
| 10015281 | 34.08                            | 211  |                            |                                    |                               |
| 10015341 | 34.11                            |      | 10015401                   | 35.01                              |                               |
| 10016441 | 34.14                            | 400  | 10015021                   | 33.25                              | 10015171 34.04 10016401 35.35 |
| 10016451 | 34.15                            |      | 10016471                   | 34.16                              |                               |
| 10016471 | 34.16                            | 401  |                            |                                    |                               |
| 10016481 | 35.01                            | 2110 |                            |                                    |                               |
| 10016441 | 35.02                            | 220  | 10015071                   | 35.10                              |                               |
| 10016491 | 35.05                            | 223  |                            |                                    |                               |
| 10016501 | 35.07                            | 230  | 10016481                   | 35.04                              |                               |
| 10016641 | 35.09                            |      | 10015651                   | 35.10                              |                               |
| 10016651 | 35.10                            | 231  |                            |                                    |                               |
| 10016691 | 35.11                            | 240  |                            |                                    |                               |
| 10016731 | 35.12                            | 250  |                            |                                    |                               |
| 10016741 | 35.13                            |      | 10015771                   | 35.14                              |                               |
| 10016771 | 35.14                            | 251  |                            |                                    |                               |
| 10016811 | 35.15                            | 260  |                            |                                    |                               |
| 10016851 | 35.17                            | 270  |                            |                                    |                               |
| 10016901 | 35.18                            | 280  | 10015071                   | 35.10                              |                               |
| 10016941 | 35.21                            |      | 10015961                   | 35.22                              |                               |
| 10016961 | 35.22                            | 291  |                            |                                    |                               |
| 10016121 | 35.24                            |      | 10016251                   | 35.26                              |                               |
| 10016221 | 35.26                            | 292  |                            |                                    |                               |
| 10016251 | 35.29                            | 293  | 10016211                   | 35.27                              |                               |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE CKSTAB(R,D,L,M,N,NOP,NOT,FACT,FCNC,FCRS,LCASE,TEMP1)

|          |       |        |          |         |          |         |          |         |          |         |          |         |
|----------|-------|--------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|
| 10016051 | 38.01 | CKSTAB | 10020221 | 49.07-X | 10025551 | 50.00-X | 10023231 | 51.20-X | 10023311 | 51.24-X | 10023941 | 52.09-X |
|          |       |        | 10023521 | 52.13-X | 10023941 | 52.23-X | 10023321 | 52.28-X | 10024901 | 55.21-X | 10024501 | 56.26-X |
|          |       |        | 10035211 | 61.06-X | 10035291 | 61.13-X | 10041501 | 67.23-X | 10041601 | 67.27-X |          |         |
| 10016081 | 38.04 |        | 10016071 | 38.02   |          |         |          |         |          |         |          |         |
| 10017171 | 38.11 | 1      | 10017131 | 38.10   |          |         |          |         |          |         |          |         |
| 10017271 | 38.15 |        | 10017261 | 38.13   |          |         |          |         |          |         |          |         |
| 10017301 | 38.17 |        | 10017271 | 38.15   |          |         |          |         |          |         |          |         |
| 10017371 | 38.01 | 2      | 10017131 | 38.10   |          |         |          |         |          |         |          |         |
| 10017431 | 38.03 | 3      | 10017361 | 38.10   |          |         |          |         |          |         |          |         |
| 10017451 | 38.05 | 4      |          |         |          |         |          |         |          |         |          |         |
| 10017471 | 38.05 | 5      | 10017441 | 38.04   |          |         |          |         |          |         |          |         |
| 10017541 | 38.07 | 7      | 10016081 | 38.04   |          |         |          |         |          |         |          |         |
| 10017701 | 38.16 | 8      |          |         |          |         |          |         |          |         |          |         |
| 10018101 | 40.01 | 15     | 10018071 | 40.04   |          |         |          |         |          |         |          |         |
| 10018051 | 40.03 | 14     | 10018021 | 40.10   |          |         |          |         |          |         |          |         |
| 10018071 | 40.04 | 13     | 10018041 | 40.08   |          |         |          |         |          |         |          |         |
| 10018091 | 40.05 | 10     | 10018121 | 40.02   |          |         |          |         |          |         |          |         |
| 10018031 | 40.06 | 12     |          |         |          |         |          |         |          |         |          |         |
| 10017011 | 40.07 | 9      | 10017701 | 38.15   |          |         |          |         |          |         |          |         |
| 10017621 | 40.08 | 16     | 10017001 | 38.10   |          |         |          |         |          |         |          |         |
| 10017971 | 40.12 | 17     | 10018091 | 40.05   |          |         |          |         |          |         |          |         |
| 10017901 | 40.13 | 11     |          |         |          |         |          |         |          |         |          |         |
| 10018141 | 40.17 | 16     | 10018101 | 40.01   | 10017051 | 40.06   |          |         |          |         |          |         |
| 10018171 | 40.20 |        | 10018151 | 40.10   |          |         |          |         |          |         |          |         |
| 10018231 | 40.22 |        | 10018191 | 40.20   |          |         |          |         |          |         |          |         |
| 10018241 | 40.22 | 00     | 10017401 | 38.05   | 10017401 | 38.08   |          |         |          |         |          |         |
| 10018351 | 40.25 | 290    |          |         |          |         |          |         |          |         |          |         |
| 10018371 | 41.01 | 294    | 10018301 | 40.25   |          |         |          |         |          |         |          |         |
| 10018401 | 41.05 | 299    | 10018351 | 40.25   |          |         |          |         |          |         |          |         |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACWIS

|          |       |       |         |        |
|----------|-------|-------|---------|--------|
| 10018351 | 44.01 | ACWIS | 1003261 | 0.12-X |
|----------|-------|-------|---------|--------|

06/14/74  
TABLE OF CONTENTS AND REFERENCES  
CARD NO PAGE/DOX NAME

AUTOFLOW, PART SET - SHEEP  
REFERENCES (SOURCE SER/RIKE NO. AND PAGE/DOX)

PAGE 7

|          |       |      |          |       |          |       |          |       |
|----------|-------|------|----------|-------|----------|-------|----------|-------|
| (001944) | 44.04 |      | (001945) | 44.05 |          |       |          |       |
| (001945) | 44.05 | 300  |          |       |          |       |          |       |
| (001950) | 44.07 |      | (001952) | 44.08 |          |       |          |       |
| (001952) | 44.08 | 3003 |          |       |          |       |          |       |
| (001957) | 44.11 | 3004 |          |       |          |       |          |       |
| (002003) | 44.12 | 320  | (001955) | 44.10 |          |       |          |       |
| (002004) | 44.13 |      | (002010) | 44.15 |          |       |          |       |
| (002010) | 44.15 | 321  |          |       |          |       |          |       |
| (001951) | 44.17 | 301  | (001957) | 44.11 |          |       |          |       |
| (001952) | 44.18 |      | (001954) | 44.19 |          |       |          |       |
| (001954) | 44.18 | 302  |          |       |          |       |          |       |
| (001954) | 44.20 | 303  | (001957) | 44.15 |          |       |          |       |
| (001955) | 44.21 |      | (001971) | 44.22 |          |       |          |       |
| (001971) | 44.22 | 304  |          |       |          |       |          |       |
| (001975) | 45.01 | 305  | (001957) | 44.11 |          |       |          |       |
| (001985) | 45.03 | 308  | (001975) | 45.02 |          |       |          |       |
| (001987) | 45.04 | 309  |          |       |          |       |          |       |
| (001988) | 45.05 | 310  | (001985) | 45.03 |          |       |          |       |
| (001989) | 45.06 |      | (001981) | 45.07 |          |       |          |       |
| (001981) | 45.07 | 311  |          |       |          |       |          |       |
| (001979) | 45.08 | 306  | (001975) | 45.02 |          |       |          |       |
| (001980) | 45.09 |      | (001982) | 45.10 |          |       |          |       |
| (001982) | 45.10 | 307  |          |       |          |       |          |       |
| (002016) | 45.11 | 322  | (002013) | 44.16 |          |       |          |       |
| (002017) | 45.12 |      | (002020) | 45.13 |          |       |          |       |
| (002020) | 45.13 | 323  |          |       |          |       |          |       |
| (002024) | 45.14 | 350  | (002013) | 44.16 | (001985) | 44.10 | (001972) | 44.22 |
| (002025) | 45.16 |      | (002027) | 45.17 | (001922) | 45.07 | (001983) | 45.10 |
| (002027) | 45.17 | 3500 |          |       |          |       |          |       |
| (002030) | 45.18 | 3501 |          |       |          |       |          |       |
| (002031) | 45.19 | 3502 |          |       |          |       |          |       |
| (002033) | 45.21 |      | (002035) | 45.03 |          |       |          |       |
| (002035) | 45.03 | 100  |          |       |          |       |          |       |
| (002041) | 45.08 |      | (002043) | 45.11 |          |       |          |       |
| (002043) | 45.11 | 107  |          |       |          |       |          |       |
| (002047) | 45.14 |      | (002049) | 45.17 |          |       |          |       |
| (002049) | 45.17 | 108  |          |       |          |       |          |       |
| (002051) | 45.18 | 3503 | (002030) | 45.10 |          |       |          |       |
| (002052) | 45.19 | 3    | (002051) | 44.12 | (002047) | 44.15 | (002057) | 45.15 |
|          |       |      | (002050) | 45.10 | (002532) | 45.10 | (002550) | 45.15 |
| (002052) | 45.21 |      | (002057) | 45.11 |          |       |          |       |
| (002058) | 45.23 |      | (002057) | 45.24 |          |       |          |       |
| (002057) | 45.24 | 4    |          |       |          |       |          |       |
| (002074) | 45.27 | 351  |          |       |          |       |          |       |
| (002077) | 45.29 | 3511 |          |       |          |       |          |       |
| (002078) | 45.30 | 3512 | (002076) | 45.20 |          |       |          |       |
| (002080) | 45.32 | 3513 |          |       |          |       |          |       |
| (002081) | 45.33 | 3514 | (002079) | 45.31 |          |       |          |       |
| (002083) | 45.35 | 3515 |          |       |          |       |          |       |
| (002084) | 45.36 | 3516 | (002082) | 45.34 |          |       |          |       |
| (002085) | 45.38 | 3517 |          |       |          |       |          |       |
| (002086) | 45.39 | 3518 | (002085) | 45.37 |          |       |          |       |
| (002087) | 45.42 |      | (002147) | 45.01 |          |       |          |       |
| (002103) | 45.45 | 352  |          |       |          |       |          |       |
| (002110) | 47.01 | 3520 | (002102) | 45.44 |          |       |          |       |
| (002115) | 47.04 | 353  |          |       |          |       |          |       |
| (002116) | 47.05 | 304  | (002114) | 47.03 |          |       |          |       |
| (002119) | 47.07 | 305  |          |       |          |       |          |       |
| (002121) | 47.08 | 306  | (002107) | 45.46 | (002110) | 47.08 |          |       |
| (002122) | 47.09 |      | (002123) | 47.10 |          |       |          |       |
| (002123) | 47.10 | 8    |          |       |          |       |          |       |
| (002126) | 47.12 | 9    |          |       |          |       |          |       |
| (002128) | 47.13 | 10   | (002125) | 47.11 |          |       |          |       |
| (002129) | 47.14 | 11   | (002126) | 47.11 | (002127) | 47.12 |          |       |
| (002130) | 47.15 | 12   |          |       |          |       |          |       |
| (002132) | 47.16 | 14   | (002129) | 47.14 |          |       |          |       |
| (002133) | 47.17 | 13   | (002129) | 47.14 | (002131) | 47.15 |          |       |
| (002136) | 47.19 |      | (002137) | 47.20 |          |       |          |       |
| (002137) | 47.20 | 00   |          |       |          |       |          |       |
| (002140) | 47.22 |      | (002145) | 47.20 |          |       |          |       |
| (002141) | 47.23 | 150  |          |       |          |       |          |       |
| (002142) | 47.24 | 151  | (002146) | 47.22 |          |       |          |       |

08/14/74  
CAPD ID PAGE NO. NAME

AUTOFLOW CHART SET - SHEEP  
REFERENCES (SOURCE SEQUENCE NO. AND PAGE/BOOK)

PAGE 8

|          |       |      |          |       |          |       |          |       |          |       |
|----------|-------|------|----------|-------|----------|-------|----------|-------|----------|-------|
| (002145) | 47.26 | 153  | (002142) | 47.24 |          |       |          |       |          |       |
| (002147) | 48.01 | 15   |          |       |          |       |          |       |          |       |
| (002150) | 48.03 |      | (002151) | 48.04 |          |       |          |       |          |       |
| (002151) | 48.04 | 603  |          |       |          |       |          |       |          |       |
| (002160) | 48.09 | 160  |          |       |          |       |          |       |          |       |
| (002163) | 48.10 | 161  | (002167) | 48.00 |          |       |          |       |          |       |
| (002170) | 48.11 | 162  |          |       |          |       |          |       |          |       |
| (002171) | 48.12 | 163  | (002169) | 48.10 |          |       |          |       |          |       |
| (002172) | 48.13 | 164  |          |       |          |       |          |       |          |       |
| (002173) | 48.14 | 165  | (002171) | 48.12 |          |       |          |       |          |       |
| (002174) | 48.15 | 166  |          |       |          |       |          |       |          |       |
| (002175) | 48.16 | 167  | (002173) | 48.14 |          |       |          |       |          |       |
| (002179) | 48.17 | 1009 |          |       |          |       |          |       |          |       |
| (002180) | 48.18 | 1031 |          |       |          |       |          |       |          |       |
| (002197) | 48.22 | 1009 | (002179) | 48.17 |          |       |          |       |          |       |
| (002201) | 48.23 | 130  | (002197) | 48.22 |          |       |          |       |          |       |
| (002213) | 49.01 | 1309 | (002197) | 48.22 |          |       |          |       |          |       |
| (002216) | 49.04 |      | (002214) | 49.02 |          |       |          |       |          |       |
| (002221) | 49.06 |      | (002244) | 50.04 |          |       |          |       |          |       |
| (002222) | 49.07 | 131  | (002228) | 49.09 |          |       |          |       |          |       |
| (002225) | 49.09 | 132  |          |       |          |       |          |       |          |       |
| (002231) | 49.10 | 133  | (002224) | 49.00 |          |       |          |       |          |       |
| (002232) | 49.11 | 134  |          |       |          |       |          |       |          |       |
| (002233) | 49.12 | 135  |          |       |          |       |          |       |          |       |
| (002238) | 50.01 | 136  | (002232) | 49.11 |          |       |          |       |          |       |
| (002239) | 50.02 | 137  |          |       |          |       |          |       |          |       |
| (002240) | 50.03 | 138  | (002239) | 50.01 |          |       |          |       |          |       |
| (002244) | 50.04 | 139  | (002231) | 49.10 | (002236) | 49.12 | (002238) | 50.01 | (002239) | 50.02 |
| (002251) | 50.05 | 140  |          |       |          |       |          |       |          |       |
| (002254) | 50.07 |      | (002275) | 50.10 |          |       |          |       |          |       |
| (002255) | 50.08 | 141  | (002260) | 50.11 |          |       |          |       |          |       |
| (002259) | 50.11 | 142  |          |       |          |       |          |       |          |       |
| (002264) | 50.12 | 143  | (002257) | 50.10 |          |       |          |       |          |       |
| (002265) | 50.13 | 144  |          |       |          |       |          |       |          |       |
| (002266) | 50.14 | 145  |          |       |          |       |          |       |          |       |
| (002270) | 50.15 | 146  | (002269) | 50.13 |          |       |          |       |          |       |
| (002271) | 50.16 | 147  |          |       |          |       |          |       |          |       |
| (002272) | 50.17 | 148  | (002270) | 50.15 |          |       |          |       |          |       |
| (002275) | 50.18 | 149  | (002264) | 50.12 | (002268) | 50.14 | (002270) | 50.15 | (002271) | 50.16 |
| (002280) | 50.19 | 230  | (002267) | 48.24 |          |       |          |       |          |       |
| (002281) | 50.20 |      | (002283) | 50.21 |          |       |          |       |          |       |
| (002283) | 50.21 | 2300 |          |       |          |       |          |       |          |       |
| (002288) | 50.23 | 240  |          |       |          |       |          |       |          |       |
| (002299) | 50.24 |      | (002304) | 51.10 |          |       |          |       |          |       |
| (002291) | 51.02 |      | (002298) | 51.07 |          |       |          |       |          |       |
| (002292) | 51.03 | 2400 |          |       |          |       |          |       |          |       |
| (002297) | 51.06 | 241  |          |       |          |       |          |       |          |       |
| (002298) | 51.07 | 242  | (002291) | 51.02 | (002296) | 51.05 |          |       |          |       |
| (002301) | 51.09 | 243  |          |       |          |       |          |       |          |       |
| (002304) | 51.10 | 244  | (002300) | 51.00 |          |       |          |       |          |       |
| (002309) | 51.13 | 245  |          |       |          |       |          |       |          |       |
| (002310) | 51.14 | 246  | (002308) | 51.12 |          |       |          |       |          |       |
| (002321) | 51.19 |      | (002319) | 51.17 |          |       |          |       |          |       |
| (002322) | 51.19 | 610  |          |       |          |       |          |       |          |       |
| (002330) | 51.23 |      | (002343) | 52.03 |          |       |          |       |          |       |
| (002331) | 51.24 | 611  | (002337) | 51.26 |          |       |          |       |          |       |
| (002341) | 51.26 | 612  |          |       |          |       |          |       |          |       |
| (002339) | 52.01 | 613  | (002333) | 51.25 |          |       |          |       |          |       |
| (002340) | 52.02 | 614  |          |       |          |       |          |       |          |       |
| (002343) | 52.03 | 619  | (002339) | 52.01 |          |       |          |       |          |       |
| (002346) | 52.04 | 620  |          |       |          |       |          |       |          |       |
| (002350) | 52.06 | 6200 |          |       |          |       |          |       |          |       |
| (002353) | 52.07 | 6201 | (002349) | 52.09 |          |       |          |       |          |       |
| (002361) | 52.12 |      | (002374) | 52.10 |          |       |          |       |          |       |
| (002362) | 52.13 | 621  | (002360) | 52.19 |          |       |          |       |          |       |
| (002365) | 52.15 | 622  |          |       |          |       |          |       |          |       |
| (002370) | 52.16 | 623  | (002364) | 52.14 |          |       |          |       |          |       |
| (002371) | 52.17 | 624  |          |       |          |       |          |       |          |       |
| (002374) | 52.18 | 625  | (002370) | 52.16 |          |       |          |       |          |       |
| (002379) | 52.19 | 630  | (002349) | 52.09 |          |       |          |       |          |       |
| (002382) | 52.22 |      | (002380) | 52.20 |          |       |          |       |          |       |
| (002391) | 52.27 |      | (002404) | 53.03 |          |       |          |       |          |       |

| CARD ID  | PAGE-LOC | NINE | REFERENCES | SOURCE | SEQUENCE NO. | AND PAGE |
|----------|----------|------|------------|--------|--------------|----------|
| (002392) | 52.20    | 631  | (002398)   | 52.30  |              |          |
| (002395) | 52.30    | 632  |            |        |              |          |
| (002400) | 53.01    | 633  | (002394)   | 52.29  |              |          |
| (002401) | 53.02    | 634  |            |        |              |          |
| (002404) | 53.03    | 635  | (002403)   | 53.01  |              |          |
| (002415) | 53.05    | 690  |            |        |              |          |
| (002417) | 53.07    | 691  |            |        |              |          |
| (002422) | 53.09    | 692  | (002416)   | 53.06  |              |          |
| (002423) | 53.09    |      | (002424)   | 53.10  |              |          |
| (002424) | 53.10    | 693  |            |        |              |          |
| (002427) | 53.11    | 35   |            |        |              |          |
| (002430) | 53.12    | 6590 |            |        |              |          |
| (002431) | 53.13    | 6991 |            |        |              |          |
| (002440) | 53.17    | 6999 | (002439)   | 53.12  |              |          |
| (002443) | 53.18    | 700  | (002440)   | 53.17  |              |          |
| (002444) | 53.19    | 701  |            |        |              |          |
| (002447) | 53.20    | 750  | (002443)   | 53.18  |              |          |
| (002448) | 53.22    | 751  |            |        |              |          |
| (002449) | 53.23    | 710  | (002444)   | 53.19  | (002447)     | 54.01    |
| (002447) | 54.01    | 702  | (002444)   | 53.19  |              |          |
| (002452) | 54.02    | 703  | (002447)   | 54.01  |              |          |
| (002454) | 54.04    |      | (002452)   | 54.07  |              |          |
| (002462) | 54.07    | 704  |            |        |              |          |
| (002477) | 54.10    | 707  | (002467)   | 54.09  |              |          |
| (002478) | 54.11    |      | (002480)   | 54.12  |              |          |
| (002480) | 54.12    | 708  |            |        |              |          |
| (002470) | 54.13    | 705  | (002467)   | 54.09  |              |          |
| (002471) | 54.14    |      | (002473)   | 54.15  |              |          |
| (002473) | 54.15    | 706  |            |        |              |          |
| (002510) | 55.01    | 717  | (002487)   | 55.08  | (002531)     | 55.11    |
| (002488) | 55.03    | 711  | (002484)   | 53.23  |              |          |
| (002489) | 55.04    | 712  |            |        |              |          |
| (002491) | 55.06    |      | (002495)   | 55.07  |              |          |
| (002495) | 55.07    | 713  |            |        |              |          |
| (002573) | 55.09    | 800  | (002440)   | 53.17  | (002549)     | 55.22    |
|          |          |      | (002517)   | 54.01  | (002510)     | 54.12    |
|          |          |      |            |        | (002513)     | 55.02    |
|          |          |      |            |        | (002561)     | 56.16    |
|          |          |      |            |        | (002488)     | 55.03    |
|          |          |      |            |        | (002497)     | 55.08    |
| (002576) | 55.10    | 999  |            |        |              |          |
| (002501) | 55.11    | 714  | (002487)   | 55.08  |              |          |
| (002502) | 55.12    | 715  | (002513)   | 55.02  |              |          |
| (002504) | 55.14    |      | (002506)   | 55.15  |              |          |
| (002506) | 55.15    | 716  |            |        |              |          |
| (002517) | 56.01    | 720  | (002484)   | 53.23  |              |          |
| (002518) | 56.02    | 721  |            |        |              |          |
| (002520) | 56.04    |      | (002524)   | 56.05  |              |          |
| (002524) | 56.05    | 722  |            |        |              |          |
| (002528) | 56.08    | 723  | (002540)   | 56.12  |              |          |
| (002529) | 56.09    |      | (002531)   | 56.10  |              |          |
| (002531) | 56.10    | 724  |            |        |              |          |
| (002537) | 56.11    | 725  | (002527)   | 56.07  |              |          |
| (002552) | 56.13    | 752  | (002540)   | 53.22  |              |          |
| (002553) | 56.14    |      | (002557)   | 56.15  |              |          |
| (002557) | 56.15    | 753  |            |        |              |          |
| (002561) | 56.16    | 754  | (002540)   | 53.21  |              |          |
| (002562) | 56.17    | 755  |            |        |              |          |
| (002563) | 56.18    |      | (002567)   | 56.19  |              |          |
| (002567) | 56.19    | 756  |            |        |              |          |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACMECHIN

|          |       |        |          |         |
|----------|-------|--------|----------|---------|
| (002587) | 59.01 | ACMECH | (002601) | 60.23-X |
| (002643) | 59.02 |        | (002644) | 59.03   |
| (002644) | 59.03 | 201    |          |         |
| (002657) | 60.03 |        | (002658) | 60.04   |
| (002658) | 60.04 | 202    |          |         |
| (002661) | 60.05 | 210    | (002662) | 63.19   |
| (002662) | 60.06 |        | (002613) | 63.12   |
| (002665) | 60.09 | 211    |          |         |
| (002672) | 60.11 | 993    |          |         |



| 04-14-74 |          | TABLE OF CONTENTS AND REFERENCES |            | AUTOFLOW CHART SET - SHEET |              |              |          | PAGE 10 |          |       |          |       |
|----------|----------|----------------------------------|------------|----------------------------|--------------|--------------|----------|---------|----------|-------|----------|-------|
| CARD ID  | PAGE/BOX | NAME                             | REFERENCES | SOURCE                     | SEQUENCE NO. | AND PAGE/BOX |          |         |          |       |          |       |
| (002670) | 60.15    | 212                              |            |                            |              |              |          |         |          |       |          |       |
| (002709) | 60.16    | 230                              | (002677)   | 60.14                      |              |              |          |         |          |       |          |       |
| (002711) | 60.18    | 231                              |            |                            |              |              |          |         |          |       |          |       |
| (002712) | 60.19    | 232                              |            |                            |              |              |          |         |          |       |          |       |
| (002713) | 60.20    | 233                              |            |                            |              |              |          |         |          |       |          |       |
| (002719) | 60.21    | 240                              | (002711)   | 60.18                      | (002712)     | 60.19        |          |         |          |       |          |       |
| (002721) | 60.23    | 241                              |            |                            |              |              |          |         |          |       |          |       |
| (002722) | 60.24    | 242                              | (002720)   | 60.22                      |              |              |          |         |          |       |          |       |
| (002730) | 60.25    | 250                              | (002710)   | 60.17                      |              |              |          |         |          |       |          |       |
| (002733) | 60.27    | 251                              |            |                            |              |              |          |         |          |       |          |       |
| (002734) | 60.28    | 252                              | (002732)   | 60.26                      |              |              |          |         |          |       |          |       |
| (002737) | 60.30    | 253                              |            |                            |              |              |          |         |          |       |          |       |
| (002725) | 60.31    | 243                              | (002722)   | 60.24                      |              |              |          |         |          |       |          |       |
| (002681) | 61.01    | 213                              | (002670)   | 60.15                      |              |              |          |         |          |       |          |       |
| (002682) | 61.02    | 214                              |            |                            |              |              |          |         |          |       |          |       |
| (002685) | 61.04    | 2140                             |            |                            |              |              |          |         |          |       |          |       |
| (002688) | 61.05    | 215                              | (002678)   | 70.15                      | (002691)     | 61.01        | (002684) | 61.03   |          |       |          |       |
| (002689) | 61.06    | 216                              |            |                            |              |              |          |         |          |       |          |       |
| (002690) | 61.07    | 217                              |            |                            |              |              |          |         |          |       |          |       |
| (002691) | 61.08    | 218                              |            |                            |              |              |          |         |          |       |          |       |
| (002692) | 61.09    | 220                              | (002688)   | 61.05                      |              |              |          |         |          |       |          |       |
| (002705) | 61.11    | 221                              | (002702)   | 61.10                      |              |              |          |         |          |       |          |       |
| (002741) | 62.01    | 260                              | (002722)   | 60.24                      | (002736)     | 60.29        | (002702) | 61.10   | (002763) | 62.11 | (002764) | 62.12 |
| (002750) | 62.04    | 260                              |            |                            |              |              |          |         |          |       |          |       |
| (002754) | 62.06    | 261                              |            |                            |              |              |          |         |          |       |          |       |
| (002756) | 62.08    | 262                              |            |                            |              |              |          |         |          |       |          |       |
| (002757) | 62.09    | 263                              | (002753)   | 62.05                      | (002755)     | 62.07        |          |         |          |       |          |       |
| (002758) | 62.10    | 264                              |            |                            |              |              |          |         |          |       |          |       |
| (002763) | 62.11    | 265                              | (002757)   | 62.09                      |              |              |          |         |          |       |          |       |
| (002764) | 62.12    | 266                              |            |                            |              |              |          |         |          |       |          |       |
| (002768) | 62.13    | 270                              | (002722)   | 60.24                      | (002736)     | 60.29        | (002702) | 61.10   |          |       |          |       |
| (002769) | 62.14    | 271                              | (002765)   | 62.19                      |              |              |          |         |          |       |          |       |
| (002779) | 62.17    | 291                              |            |                            |              |              |          |         |          |       |          |       |
| (002788) | 63.01    | 272                              | (002765)   | 62.19                      |              |              |          |         |          |       |          |       |
| (002797) | 63.04    | 292                              |            |                            |              |              |          |         |          |       |          |       |
| (002802) | 63.05    | 273                              | (002765)   | 62.19                      |              |              |          |         |          |       |          |       |
| (002803) | 63.06    | 274                              |            |                            |              |              |          |         |          |       |          |       |
| (002805) | 63.08    | 275                              |            |                            |              |              |          |         |          |       |          |       |
| (002806) | 63.09    | 276                              | (002802)   | 63.05                      | (002804)     | 63.07        |          |         |          |       |          |       |
| (002807) | 63.10    | 277                              |            |                            |              |              |          |         |          |       |          |       |
| (002810) | 63.11    | 278                              | (002806)   | 63.09                      |              |              |          |         |          |       |          |       |
| (002813) | 63.12    | 289                              | (002684)   | 60.07                      | (002738)     | 60.30        | (002726) | 60.31   | (002689) | 61.06 | (002690) | 61.07 |
|          |          |                                  | (002695)   | 61.08                      | (002706)     | 61.11        | (002704) | 62.12   |          |       |          |       |
| (002816) | 63.13    | 290                              |            |                            |              |              |          |         |          |       |          |       |
| (002819) | 63.14    | 291                              | (002816)   | 63.13                      |              |              |          |         |          |       |          |       |
| (002820) | 63.15    |                                  | (002823)   | 63.16                      |              |              |          |         |          |       |          |       |
| (002823) | 63.18    | 292                              |            |                            |              |              |          |         |          |       |          |       |
| (002825) | 63.18    | 293                              |            |                            |              |              |          |         |          |       |          |       |
| (002826) | 63.19    | 294                              | (002824)   | 63.17                      |              |              |          |         |          |       |          |       |
| (002831) | 63.20    | 295                              | (002816)   | 63.13                      |              |              |          |         |          |       |          |       |
| (002832) | 63.21    | 296                              |            |                            |              |              |          |         |          |       |          |       |
| (002833) | 63.22    | 297                              | (002831)   | 63.20                      |              |              |          |         |          |       |          |       |
| (002838) | 63.23    | 298                              |            |                            |              |              |          |         |          |       |          |       |
| (002846) | 63.24    | 299                              | (002671)   | 60.10                      | (002749)     | 62.03        | (002778) | 62.16   | (002786) | 63.03 |          |       |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE CRYSTALLOGRAPHY

|          |       |         |          |         |          |         |          |         |          |         |
|----------|-------|---------|----------|---------|----------|---------|----------|---------|----------|---------|
| (002897) | 66.01 | CRYSTAL | (002667) | 60.09-X | (002745) | 62.02-X | (002774) | 62.15-X | (002782) | 63.02-X |
| (002891) | 66.02 | 200     |          |         |          |         |          |         |          |         |
| (002892) | 66.03 |         | (002894) | 66.04   |          |         |          |         |          |         |
| (002894) | 66.04 | 201     |          |         |          |         |          |         |          |         |
| (002896) | 66.10 | 202     |          |         |          |         |          |         |          |         |
| (002898) | 67.01 | 203     | (002895) | 66.09   |          |         |          |         |          |         |
| (002899) | 67.02 | 204     | (002897) | 66.10   |          |         |          |         |          |         |
| (002894) | 67.06 | 205     |          |         |          |         |          |         |          |         |
| (002893) | 67.08 | 206     |          |         |          |         |          |         |          |         |
| (002894) | 67.10 | 207     | (002899) | 67.07   |          |         |          |         |          |         |
| (002893) | 67.11 | 210     |          |         |          |         |          |         |          |         |

|          |       |     |          |       |
|----------|-------|-----|----------|-------|
| (002942) | 67.13 | 211 |          |       |
| (002943) | 67.14 | 212 |          |       |
| (002945) | 67.15 | 213 | (002941) | 67.12 |
| (002947) | 67.17 | 214 |          |       |
| (002950) | 67.18 | 215 | (002944) | 67.14 |
| (002952) | 67.20 | 216 | (002946) | 67.16 |
| (002954) | 67.21 | 217 | (002951) | 67.19 |
| (002955) | 67.22 | 218 | (002953) | 67.20 |
| (002962) | 67.24 | 200 | (002942) | 67.13 |
| (002963) | 67.25 | 204 |          |       |
| (002969) | 67.28 |     | (002971) | 67.31 |
| (002971) | 67.31 | 207 |          |       |
| (002976) | 67.32 | 209 | (002962) | 67.24 |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE MEIGH(ME1,MS1AT)

|          |       |        |          |         |
|----------|-------|--------|----------|---------|
| (003000) | 70.01 | ME10H1 | (003015) | 63.05-H |
| (003027) | 70.02 |        | (003020) | 70.03   |
| (003030) | 70.03 | 300    |          |         |
| (003030) | 70.06 |        | (003040) | 70.07   |
| (003040) | 70.07 | 301    |          |         |
| (003057) | 71.03 | 300    |          |         |
| (003058) | 71.04 |        | (003063) | 71.08   |
| (003060) | 71.06 | 301    |          |         |
| (003061) | 71.07 | 302    | (003050) | 71.05   |
| (003063) | 71.08 | 303    |          |         |
| (003073) | 71.12 | 3030   |          |         |
| (003081) | 71.14 | 3031   | (003072) | 71.11   |
| (003094) | 71.15 | 3030   | (003070) | 71.13   |
| (003096) | 71.16 |        | (003087) | 71.17   |
| (003097) | 71.17 | 304    |          |         |
| (003103) | 71.20 | 400    | (003090) | 71.10   |
| (003109) | 72.01 | 4000   | (003080) | 71.10   |
| (003113) | 72.02 | 4001   | (003100) | 72.01   |
| (003122) | 72.04 | 401    | (003100) | 72.01   |
| (003125) | 72.06 | 402    |          |         |
| (003127) | 72.07 | 4020   | (003124) | 72.05   |
| (003130) | 72.08 | 4021   | (003124) | 72.05   |
| (003131) | 72.09 |        | (003133) | 72.10   |
| (003133) | 72.10 | 4022   |          |         |
| (003137) | 72.11 | 403    | (003106) | 71.20   |
| (003140) | 72.13 | 404    |          |         |
| (003144) | 72.14 | 405    | (003130) | 72.12   |
| (003147) | 72.16 | 406    |          |         |
| (003151) | 72.17 | 407    | (003146) | 72.15   |
| (003150) | 73.03 |        | (003150) | 73.04   |
| (003150) | 73.04 | 400    |          |         |
| (003163) | 73.05 | 400    |          |         |
| (003164) | 73.06 | 404    |          |         |
| (003172) | 73.09 |        | (003174) | 73.12   |
| (003174) | 73.12 | 400    |          |         |
| (003170) | 73.15 | 400    | (003163) | 73.05   |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACMB5

|          |       |       |          |        |
|----------|-------|-------|----------|--------|
| (003109) | 70.01 | ACMB5 | (003211) | 8.10-H |
| (003209) | 70.03 |       | (003271) | 70.04  |
| (003271) | 70.04 | 300   |          |        |
| (003275) | 70.06 |       | (003270) | 70.07  |
| (003276) | 70.07 | 3001  |          |        |
| (003278) | 70.09 |       | (003270) | 70.10  |
| (003279) | 70.10 | 3002  |          |        |
| (003283) | 70.12 |       | (003207) | 70.13  |

00/14/74  
TABLE OF CONTENTS AND REFERENCES

AUTOFLEX CHART SET - SKEP  
REFERENCES (SOURCE SEQUENCE NO. AND PAGE NO.)

PAGE 12

| CARD NO | PAGE NO | NAME | REFERENCES | (SOURCE SEQUENCE NO. AND PAGE NO.) |
|---------|---------|------|------------|------------------------------------|
| 1003207 | 76.13   | 3003 |            |                                    |
| 1003307 | 76.16   | 305  | 1003205    | 76.15                              |
| 1003310 | 76.18   | 308  | 1003308    | 76.17                              |
| 1003319 | 76.19   | 309  |            |                                    |
| 1003320 | 76.23   | 310  | 1003316    | 76.18                              |
| 1003321 | 76.21   |      | 1003322    | 76.22                              |
| 1003323 | 76.22   | 311  |            |                                    |
| 1003323 | 77.01   | 301  | 1003293    | 76.19                              |
| 1003329 | 77.02   |      | 1003296    | 77.03                              |
| 1003329 | 77.03   | 322  |            |                                    |
| 1003330 | 77.04   | 303  | 1003293    | 76.15                              |
| 1003331 | 77.05   |      | 1003333    | 77.06                              |
| 1003333 | 77.06   | 304  |            |                                    |
| 1003333 | 77.07   | 305  | 1003333    | 76.17                              |
| 1003333 | 77.08   |      | 1003334    | 77.09                              |
| 1003334 | 77.09   | 307  |            |                                    |
| 1003339 | 77.10   | 350  | 1003324    | 76.22                              |
| 1003333 | 77.12   |      | 1003332    | 77.13                              |
| 1003332 | 77.13   | 3500 |            |                                    |
| 1003335 | 77.14   | 3501 |            |                                    |
| 1003335 | 77.15   | 3502 |            |                                    |
| 1003338 | 77.17   |      | 1003340    | 77.20                              |
| 1003340 | 77.20   | 109  |            |                                    |
| 1003340 | 77.25   |      | 1003340    | 77.20                              |
| 1003340 | 77.28   | 107  |            |                                    |
| 1003352 | 77.31   |      | 1003354    | 78.01                              |
| 1003354 | 78.01   | 108  |            |                                    |
| 1003355 | 78.02   | 3503 | 1003335    | 77.14                              |
| 1003355 | 78.03   | 3    | 1003355    | 83.13                              |
|         |         |      | 1003357    | 85.22                              |
| 1003355 | 78.05   |      | 1003557    | 82.10                              |
| 1003355 | 78.07   |      | 1003371    | 78.00                              |
| 1003371 | 78.08   | 4    |            |                                    |
| 1003370 | 78.10   | 351  |            |                                    |
| 1003381 | 78.12   | 3841 |            |                                    |
| 1003382 | 78.13   | 3842 | 1003380    | 78.11                              |
| 1003384 | 78.15   | 3843 |            |                                    |
| 1003385 | 78.16   | 3844 | 1003383    | 78.14                              |
| 1003387 | 78.18   | 3845 |            |                                    |
| 1003388 | 78.19   | 3846 | 1003386    | 78.17                              |
| 1003388 | 78.21   | 3847 |            |                                    |
| 1003388 | 78.01   | 3848 | 1003389    | 78.20                              |
| 1003400 | 78.04   |      | 1003405    | 80.01                              |
| 1003400 | 78.08   | 385  |            |                                    |
| 1003410 | 78.09   |      | 1003411    | 78.10                              |
| 1003411 | 78.10   | 8    |            |                                    |
| 1003414 | 78.12   | 9    |            |                                    |
| 1003416 | 78.13   | 10   | 1003413    | 78.11                              |
| 1003417 | 78.14   | 11   | 1003413    | 78.11                              |
| 1003418 | 78.15   | 12   | 1003415    | 78.12                              |
| 1003420 | 78.16   | 14   | 1003417    | 78.14                              |
| 1003421 | 78.17   | 13   | 1003417    | 78.14                              |
| 1003424 | 78.18   |      | 1003419    | 78.15                              |
| 1003425 | 78.20   | 60   | 1003425    | 78.20                              |
| 1003430 | 78.22   |      | 1003433    | 78.26                              |
| 1003430 | 78.23   | 150  |            |                                    |
| 1003430 | 78.24   | 151  | 1003430    | 78.22                              |
| 1003433 | 78.25   | 150  | 1003430    | 78.24                              |
| 1003435 | 80.01   | 15   |            |                                    |
| 1003438 | 80.03   |      | 1003439    | 80.04                              |
| 1003438 | 80.04   | 600  |            |                                    |
| 1003438 | 80.05   | 1000 |            |                                    |
| 1003438 | 80.06   | 1001 |            |                                    |
| 1003437 | 80.13   | 1002 | 1003433    | 80.06                              |
| 1003437 | 80.14   | 500  |            |                                    |
| 1003438 | 80.17   | 601  |            |                                    |
| 1003438 | 80.20   |      | 1003435    | 80.18                              |
| 1003438 | 80.20   | 510  |            |                                    |
| 1003437 | 80.25   |      | 1003438    | 81.03                              |
| 1003438 | 80.26   | 511  | 1003504    | 80.20                              |
| 1003501 | 80.28   | 512  |            |                                    |
| 1003505 | 81.01   | 513  | 1003500    | 80.27                              |

|          |       |      |          |       |          |       |          |       |
|----------|-------|------|----------|-------|----------|-------|----------|-------|
| (003507) | 01.02 | 614  |          |       |          |       |          |       |
| (003510) | 01.03 | 615  | (003576) | 01.01 |          |       |          |       |
| (003516) | 01.04 | 619  |          |       |          |       |          |       |
| (003519) | 01.07 |      | (003517) | 01.05 |          |       |          |       |
| (003520) | 01.12 |      | (003541) | 02.03 |          |       |          |       |
| (003529) | 01.13 | 631  | (003535) | 01.15 |          |       |          |       |
| (003532) | 01.15 | 632  |          |       |          |       |          |       |
| (003537) | 02.01 | 633  | (003531) | 01.14 |          |       |          |       |
| (003539) | 02.02 | 634  |          |       |          |       |          |       |
| (003541) | 02.03 | 635  | (003537) | 02.01 |          |       |          |       |
| (003545) | 02.04 | 690  |          |       |          |       |          |       |
| (003547) | 02.05 | 691  |          |       |          |       |          |       |
| (003552) | 02.07 | 692  | (003546) | 02.05 |          |       |          |       |
| (003553) | 02.08 |      | (003554) | 02.09 |          |       |          |       |
| (003554) | 02.09 | 693  |          |       |          |       |          |       |
| (003557) | 02.10 | 35   |          |       |          |       |          |       |
| (003560) | 02.11 | 6990 |          |       |          |       |          |       |
| (003561) | 02.12 | 6991 |          |       |          |       |          |       |
| (003570) | 02.16 | 6993 | (003560) | 02.11 |          |       |          |       |
| (003573) | 02.17 | 700  | (003570) | 02.16 |          |       |          |       |
| (003574) | 02.18 | 701  |          |       |          |       |          |       |
| (003582) | 02.19 | 750  | (003573) | 02.17 |          |       |          |       |
| (003584) | 02.21 | 751  |          |       |          |       |          |       |
| (003518) | 02.22 | 710  | (003574) | 02.18 | (003577) | 03.01 |          |       |
| (003577) | 03.01 | 702  | (003574) | 02.18 |          |       |          |       |
| (003582) | 03.02 | 703  | (003577) | 03.01 |          |       |          |       |
| (003584) | 03.04 |      | (003586) | 03.00 |          |       |          |       |
| (003586) | 03.00 | 704  |          |       |          |       |          |       |
| (003611) | 03.11 | 707  | (003601) | 03.10 |          |       |          |       |
| (003612) | 03.12 |      | (003614) | 03.13 |          |       |          |       |
| (003614) | 03.13 | 700  |          |       |          |       |          |       |
| (003604) | 03.14 | 705  | (003601) | 03.10 |          |       |          |       |
| (003605) | 03.15 |      | (003607) | 03.16 |          |       |          |       |
| (003607) | 03.16 | 700  |          |       |          |       |          |       |
| (003608) | 04.01 | 717  | (003632) | 04.09 | (003630) | 04.12 |          |       |
| (003621) | 04.03 | 711  | (003610) | 02.22 |          |       |          |       |
| (003622) | 04.04 | 712  |          |       |          |       |          |       |
| (003624) | 04.06 |      | (003630) | 04.00 |          |       |          |       |
| (003630) | 04.00 | 713  |          |       |          |       |          |       |
| (003712) | 04.10 | 800  | (003570) | 02.16 | (003694) | 02.21 | (003640) | 04.02 |
|          |       |      | (003651) | 05.01 | (003675) | 05.12 | (003650) | 05.10 |
| (003715) | 04.11 | 809  |          |       |          |       |          |       |
| (003636) | 04.12 | 714  | (003632) | 04.09 |          |       |          |       |
| (003637) | 04.13 | 715  | (003640) | 04.02 |          |       |          |       |
| (003638) | 04.15 |      | (003641) | 04.16 |          |       |          |       |
| (003641) | 04.16 | 716  |          |       |          |       |          |       |
| (003651) | 05.01 | 709  | (003610) | 02.22 |          |       |          |       |
| (003652) | 05.02 | 721  |          |       |          |       |          |       |
| (003654) | 05.04 |      | (003680) | 05.06 |          |       |          |       |
| (003660) | 05.06 | 702  |          |       |          |       |          |       |
| (003664) | 05.09 | 703  | (003675) | 05.12 |          |       |          |       |
| (003665) | 05.10 |      | (003687) | 05.13 |          |       |          |       |
| (003670) | 05.11 | 705  | (003683) | 05.08 |          |       |          |       |
| (003667) | 05.13 | 704  |          |       |          |       |          |       |
| (003687) | 05.14 | 752  | (003684) | 02.21 |          |       |          |       |
| (003688) | 05.15 |      | (003694) | 05.17 |          |       |          |       |
| (003694) | 05.17 | 753  |          |       |          |       |          |       |
| (003690) | 05.18 | 754  | (003683) | 02.20 |          |       |          |       |
| (003699) | 05.19 | 755  |          |       |          |       |          |       |
| (003700) | 05.20 |      | (003706) | 05.22 |          |       |          |       |
| (003708) | 05.22 | 756  |          |       |          |       |          |       |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACNSTR

|          |       |        |          |         |
|----------|-------|--------|----------|---------|
| (003706) | 05.01 | ACNSTR | (003741) | 06.14-X |
| (003804) | 05.01 | 100    |          |         |
| (003813) | 05.03 | 101    | (003810) | 05.02   |
| (003819) | 05.04 | 102    | (003810) | 05.02   |

CARD ID PAGE/PUK NAME

REFERENCE SOURCE SEQUENCE NO. AND PAGE/PUK

|          |       |      |          |        |          |        |          |       |          |       |          |       |
|----------|-------|------|----------|--------|----------|--------|----------|-------|----------|-------|----------|-------|
| 1003023) | 09.06 | 103  |          |        |          |        |          |       |          |       |          |       |
| 1003024) | 09.07 | 104  |          |        |          |        |          |       |          |       |          |       |
| 1003025) | 09.08 | 105  | 1003023) | 09.06  |          |        |          |       |          |       |          |       |
| 1003026) | 09.09 | 106  |          |        |          |        |          |       |          |       |          |       |
| 1003028) | 09.10 | 107  | 1003022) | 09.09  | 1003025) | 09.08  |          |       |          |       |          |       |
| 1003032) | 09.12 | 109  |          |        |          |        |          |       |          |       |          |       |
| 1003033) | 09.13 | 110  |          |        |          |        |          |       |          |       |          |       |
| 1003034) | 09.14 | 111  | 1003032) | 09.12  |          |        |          |       |          |       |          |       |
| 1003035) | 09.15 | 112  |          |        |          |        |          |       |          |       |          |       |
| 1003039) | 09.16 | 200  | 1003015) | 09.03  | 1003031) | 09.11  | 1003034) | 09.14 |          |       |          |       |
| 1003052) | 00.01 | 250  | 1004330) | 101.10 |          |        |          |       |          |       |          |       |
| 1003066) | 00.03 | 300  | 1003040) | 09.17  | 1003062) | 00.02  |          |       |          |       |          |       |
| 1003068) | 00.05 | 3000 |          |        |          |        |          |       |          |       |          |       |
| 1003072) | 00.06 | 3001 | 1003068) | 00.04  |          |        |          |       |          |       |          |       |
| 1003073) | 00.07 | 3002 |          |        |          |        |          |       |          |       |          |       |
| 1003077) | 00.08 | 3003 | 1003072) | 00.06  |          |        |          |       |          |       |          |       |
| 1003080) | 00.10 | 301  |          |        |          |        |          |       |          |       |          |       |
| 1003081) | 00.11 | 302  | 1003079) | 00.09  |          |        |          |       |          |       |          |       |
| 1003085) | 00.12 | 304  | 1004270) | 100.02 | 1004377) | 103.03 |          |       |          |       |          |       |
| 1003087) | 00.14 | 3040 |          |        |          |        |          |       |          |       |          |       |
| 1003088) | 00.15 | 3041 | 1003088) | 10.13  |          |        |          |       |          |       |          |       |
| 1003097) | 00.16 | 305  |          |        |          |        |          |       |          |       |          |       |
| 1003091) | 01.01 | 306  | 1003088) | 00.10  |          |        |          |       |          |       |          |       |
| 1003092) | 01.02 | 3060 |          |        |          |        |          |       |          |       |          |       |
| 1003094) | 01.04 | 307  |          |        |          |        |          |       |          |       |          |       |
| 1003098) | 01.06 | 308  | 1003093) | 01.03  |          |        |          |       |          |       |          |       |
| 1003099) | 01.07 | 309  |          |        |          |        |          |       |          |       |          |       |
| 1003100) | 01.08 | 310  | 1003098) | 01.06  |          |        |          |       |          |       |          |       |
| 1003101) | 01.10 | 320  | 1003098) | 00.17  | 1003098) | 00.19  |          |       |          |       |          |       |
| 1003021) | 01.13 | 321  |          |        |          |        |          |       |          |       |          |       |
| 1003022) | 01.14 | 322  | 1003020) | 01.12  |          |        |          |       |          |       |          |       |
| 1003023) | 01.15 | 323  |          |        |          |        |          |       |          |       |          |       |
| 1003097) | 01.16 | 400  | 1003022) | 01.14  | 1003030) | 02.00  | 1003050) | 03.07 | 1003089) | 03.20 | 1003072) | 04.04 |
| 1003027) | 02.01 | 337  | 1003021) | 01.13  | 1003023) | 01.15  |          |       |          |       |          |       |
| 1003028) | 02.03 | 331  |          |        |          |        |          |       |          |       |          |       |
| 1003030) | 02.04 | 332  | 1003028) | 02.02  | 1003037) | 02.00  | 1003030) | 02.10 |          |       |          |       |
| 1003035) | 02.06 | 333  |          |        |          |        |          |       |          |       |          |       |
| 1003037) | 02.08 | 334  |          |        |          |        |          |       |          |       |          |       |
| 1003038) | 02.09 | 335  | 1003036) | 02.07  |          |        |          |       |          |       |          |       |
| 1003039) | 02.10 | 336  |          |        |          |        |          |       |          |       |          |       |
| 1003042) | 02.11 | 337  | 1003038) | 02.09  | 1003050) | 03.07  |          |       |          |       |          |       |
| 1003043) | 02.12 | 338  |          |        |          |        |          |       |          |       |          |       |
| 1003047) | 02.13 | 339  | 1003042) | 02.11  |          |        |          |       |          |       |          |       |
| 1003050) | 03.01 | 340  | 1003048) | 02.14  |          |        |          |       |          |       |          |       |
| 1003052) | 03.02 | 341  | 1003044) | 03.10  |          |        |          |       |          |       |          |       |
| 1003050) | 03.06 | 342  |          |        |          |        |          |       |          |       |          |       |
| 1003050) | 03.07 | 343  | 1003057) | 03.05  |          |        |          |       |          |       |          |       |
| 1003060) | 03.08 | 344  |          |        |          |        |          |       |          |       |          |       |
| 1003061) | 03.09 | 345  | 1003060) | 03.06  |          |        |          |       |          |       |          |       |
| 1003062) | 03.10 | 346  |          |        |          |        |          |       |          |       |          |       |
| 1003075) | 03.11 | 360  | 1003061) | 01.13  | 1003023) | 01.15  | 1003037) | 02.00 | 1003050) | 02.10 | 1003044) | 02.12 |
|          |       |      | 1003050) | 03.06  | 1003060) | 03.08  | 1003061) | 03.09 | 1003071) | 04.03 | 1003072) | 04.04 |
| 1003076) | 03.12 | 361  | 1003064) | 03.10  |          |        |          |       |          |       |          |       |
| 1003077) | 03.13 | 362  | 1003065) | 03.10  | 1003062) | 03.21  |          |       |          |       |          |       |
| 1003083) | 03.17 | 363  |          |        |          |        |          |       |          |       |          |       |
| 1003084) | 03.18 | 364  | 1003062) | 03.16  |          |        |          |       |          |       |          |       |
| 1003085) | 03.19 | 365  |          |        |          |        |          |       |          |       |          |       |
| 1003089) | 03.20 | 366  | 1003083) | 03.17  |          |        |          |       |          |       |          |       |
| 1003090) | 03.21 | 367  |          |        |          |        |          |       |          |       |          |       |
| 1003090) | 04.01 | 350  | 1004201) | 101.03 |          |        |          |       |          |       |          |       |
| 1003070) | 04.04 | 351  |          |        |          |        |          |       |          |       |          |       |
| 1004002) | 04.05 | 401  | 1003090) | 01.10  | 1003040) | 02.14  |          |       |          |       |          |       |
| 1004004) | 04.07 | 402  |          |        |          |        |          |       |          |       |          |       |
| 1004005) | 04.08 | 403  | 1004003) | 04.06  | 1004013) | 04.13  |          |       |          |       |          |       |
| 1004013) | 04.13 | 404  |          |        |          |        |          |       |          |       |          |       |
| 1004010) | 04.14 | 405  | 1004012) | 04.12  | 1004020) | 04.21  |          |       |          |       |          |       |
| 1004017) | 04.15 | 406  |          |        |          |        |          |       |          |       |          |       |
| 1004020) | 04.16 | 407  | 1004016) | 04.14  |          |        |          |       |          |       |          |       |
| 1004022) | 04.17 | 408  | 1004023) | 04.24  |          |        |          |       |          |       |          |       |
| 1004025) | 04.22 | 409  |          |        |          |        |          |       |          |       |          |       |
| 1004030) | 04.23 | 4000 |          |        |          |        |          |       |          |       |          |       |
| 1004031) | 04.24 | 4001 |          |        |          |        |          |       |          |       |          |       |

| 00/14/74 | TABLE OF CONTENTS AND REFERENCES |      | AUTOFLOW CHART SET - SHEEP                    |        |          |        |          | PAGE 15 |          |        |          |       |
|----------|----------------------------------|------|-----------------------------------------------|--------|----------|--------|----------|---------|----------|--------|----------|-------|
| CARD NO  | PAGE/BOX                         | NAME | REFERENCES (SOURCE SEQUENCE NO. AND PAGE/BOX) |        |          |        |          |         |          |        |          |       |
| (004037) | 95.01                            | 410  | (004013)                                      | 94.13  | (004018) | 94.15  | (004029) | 94.22   | (004030) | 94.23  | (004044) | 95.05 |
| (004045) | 95.06                            | 411  |                                               |        |          |        |          |         |          |        |          |       |
| (004046) | 95.07                            | 412  | (004054)                                      | 95.13  |          |        |          |         |          |        |          |       |
| (004053) | 95.13                            | 413  |                                               |        |          |        |          |         |          |        |          |       |
| (004060) | 96.01                            | 500  | (003259)                                      | 91.10  | (004052) | 95.12  |          |         |          |        |          |       |
| (004062) | 96.02                            | 501  | (004101)                                      | 96.27  |          |        |          |         |          |        |          |       |
| (004063) | 96.04                            |      | (004081)                                      | 96.14  |          |        |          |         |          |        |          |       |
| (004068) | 96.05                            | 502  |                                               |        |          |        |          |         |          |        |          |       |
| (004075) | 96.09                            | 5020 |                                               |        |          |        |          |         |          |        |          |       |
| (004076) | 96.10                            | 503  | (004074)                                      | 96.00  |          |        |          |         |          |        |          |       |
| (004079) | 96.13                            |      | (004078)                                      | 96.11  |          |        |          |         |          |        |          |       |
| (004081) | 96.14                            | 504  | (004068)                                      | 96.04  | (004075) | 96.09  |          |         |          |        |          |       |
| (004095) | 96.16                            | 505  |                                               |        |          |        |          |         |          |        |          |       |
| (004105) | 96.17                            | 510  | (004094)                                      | 96.19  |          |        |          |         |          |        |          |       |
| (004106) | 96.18                            | 5100 | (004095)                                      | 96.16  |          |        |          |         |          |        |          |       |
| (004107) | 96.19                            | 511  |                                               |        |          |        |          |         |          |        |          |       |
| (004099) | 96.20                            | 506  | (004095)                                      | 96.16  |          |        |          |         |          |        |          |       |
| (004098) | 96.21                            | 507  |                                               |        |          |        |          |         |          |        |          |       |
| (004092) | 96.22                            | 508  | (004099)                                      | 96.20  |          |        |          |         |          |        |          |       |
| (004094) | 96.23                            | 509  | (004100)                                      | 96.19  | (004091) | 96.21  | (004222) | 99.12   | (004220) | 99.14  |          |       |
| (004112) | 97.01                            | 512  | (004106)                                      | 96.10  |          |        |          |         |          |        |          |       |
| (004117) | 97.03                            |      | (004120)                                      | 97.10  |          |        |          |         |          |        |          |       |
| (004119) | 97.05                            | 513  |                                               |        |          |        |          |         |          |        |          |       |
| (004122) | 97.07                            | 514  |                                               |        |          |        |          |         |          |        |          |       |
| (004125) | 97.09                            | 515  |                                               |        |          |        |          |         |          |        |          |       |
| (004126) | 97.10                            | 516  | (004118)                                      | 97.04  | (004121) | 97.06  | (004124) | 97.08   |          |        |          |       |
| (004125) | 97.12                            | 5160 |                                               |        |          |        |          |         |          |        |          |       |
| (004130) | 97.14                            | 517  |                                               |        |          |        |          |         |          |        |          |       |
| (004136) | 97.16                            | 518  | (004137)                                      | 97.13  |          |        |          |         |          |        |          |       |
| (004147) | 97.17                            | 519  | (004134)                                      | 97.11  |          |        |          |         |          |        |          |       |
| (004148) | 97.18                            | 5190 |                                               |        |          |        |          |         |          |        |          |       |
| (004152) | 97.19                            | 520  | (004144)                                      | 97.16  | (004147) | 97.17  |          |         |          |        |          |       |
| (004154) | 97.21                            | 5200 |                                               |        |          |        |          |         |          |        |          |       |
| (004157) | 97.22                            | 5201 | (004153)                                      | 97.20  |          |        |          |         |          |        |          |       |
| (004165) | 97.26                            |      | (004170)                                      | 98.03  |          |        |          |         |          |        |          |       |
| (004166) | 97.27                            | 521  | (004172)                                      | 97.29  |          |        |          |         |          |        |          |       |
| (004168) | 97.29                            | 522  |                                               |        |          |        |          |         |          |        |          |       |
| (004174) | 98.01                            | 523  | (004160)                                      | 97.20  |          |        |          |         |          |        |          |       |
| (004175) | 98.02                            | 524  |                                               |        |          |        |          |         |          |        |          |       |
| (004178) | 98.03                            | 525  | (004174)                                      | 98.01  |          |        |          |         |          |        |          |       |
| (004182) | 98.04                            | 530  |                                               |        |          |        |          |         |          |        |          |       |
| (004184) | 98.06                            |      | (004184)                                      | 98.01  |          |        |          |         |          |        |          |       |
| (004185) | 98.07                            | 531  |                                               |        |          |        |          |         |          |        |          |       |
| (004186) | 98.08                            | 532  | (004193)                                      | 98.11  |          |        |          |         |          |        |          |       |
| (004190) | 98.11                            | 533  |                                               |        |          |        |          |         |          |        |          |       |
| (004194) | 98.01                            | 534  | (004184)                                      | 98.06  | (004188) | 98.10  |          |         |          |        |          |       |
| (004198) | 98.02                            | 540  |                                               |        |          |        |          |         |          |        |          |       |
| (004201) | 98.04                            | 541  |                                               |        |          |        |          |         |          |        |          |       |
| (004203) | 98.05                            | 542  | (004200)                                      | 98.03  |          |        |          |         |          |        |          |       |
| (004215) | 98.10                            | 5420 |                                               |        |          |        |          |         |          |        |          |       |
| (004216) | 98.11                            | 5430 |                                               |        |          |        |          |         |          |        |          |       |
| (004217) | 98.12                            | 5431 | (004223)                                      | 98.13  |          |        |          |         |          |        |          |       |
| (004223) | 98.13                            | 5425 | (004215)                                      | 98.10  |          |        |          |         |          |        |          |       |
| (004224) | 98.14                            | 5440 |                                               |        |          |        |          |         |          |        |          |       |
| (004234) | 100.01                           | 5435 | (004215)                                      | 99.10  | (004216) | 99.11  | (004223) | 99.13   |          |        |          |       |
| (004236) | 100.02                           | 0000 | (004309)                                      | 102.05 |          |        |          |         |          |        |          |       |
| (004237) | 100.03                           | 0001 |                                               |        |          |        |          |         |          |        |          |       |
| (004244) | 100.05                           |      | (004246)                                      | 100.09 |          |        |          |         |          |        |          |       |
| (004246) | 100.09                           | 004  |                                               |        |          |        |          |         |          |        |          |       |
| (004250) | 100.12                           |      | (004252)                                      | 100.15 |          |        |          |         |          |        |          |       |
| (004252) | 100.15                           | 005  |                                               |        |          |        |          |         |          |        |          |       |
| (004254) | 100.16                           | 0005 | (004236)                                      | 100.02 |          |        |          |         |          |        |          |       |
| (004258) | 100.17                           | 700  | (004254)                                      | 100.16 |          |        |          |         |          |        |          |       |
| (004264) | 100.18                           | 701  | (004258)                                      | 100.17 |          |        |          |         |          |        |          |       |
| (004266) | 100.19                           | 7011 | (004303)                                      | 102.02 |          |        |          |         |          |        |          |       |
| (004267) | 100.20                           | 7010 | (004300)                                      | 102.05 |          |        |          |         |          |        |          |       |
| (004301) | 101.01                           | 702  | (004250)                                      | 100.17 |          |        |          |         |          |        |          |       |
| (004304) | 101.02                           | 703  | (004281)                                      | 101.01 | (004302) | 102.01 |          |         |          |        |          |       |
| (004305) | 101.04                           | 710  | (004301)                                      | 101.01 | (004302) | 102.01 | (004303) | 102.02  | (004350) | 102.03 |          |       |
| (004304) | 101.06                           | 711  |                                               |        |          |        |          |         |          |        |          |       |
| (004332) | 101.12                           | 712  | (004303)                                      | 101.07 |          |        |          |         |          |        |          |       |
| (004362) | 102.01                           | 740  | (004350)                                      | 102.03 |          |        |          |         |          |        |          |       |

(004303) 102.02 740  
 (004350) 102.03 730 (004253) 100.17  
 (004361) 102.04 731 (004370) 102.03  
 (004365) 102.05 732 (004201) 101.01 (004361) 102.04  
 (004372) 103.01 733 (004361) 102.04  
 (004374) 103.02 734 (004351) 102.04  
 (004375) 103.03 734 (004373) 103.01  
 (004305) 103.04 000 (004375) 101.16  
 (004304) 103.06 933 (004254) 100.16

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACTIVITY (ASTR, STRL)

(004405) 106.01 /CHECK (003310) 01.11-X (003935) 02.00-X (003950) 03.04-X (003981) 03.15-X (003970) 04.02-X  
 (004410) 04.10-X (004026) 04.10-X (004042) 05.03-X (004050) 05.00-X (004059) 06.25-X  
 (004406) 106.01 1  
 (004406) 106.04 100  
 (004400) 106.05 100 (004454) 106.03 (004560) 107.02  
 (004407) 106.07 100 (004557) 107.10  
 (004400) 106.08 110 (004537) 107.02  
 (004400) 106.09 (004545) 107.15  
 (004407) 106.16 111  
 (004400) 106.17 1110 (004406) 106.15  
 (004402) 106.19 112  
 (004403) 106.20 1120 (004401) 106.10  
 (004407) 106.22 113  
 (004400) 106.23 114  
 (004400) 106.25 115 (004406) 106.21 (004457) 106.02  
 (004500) 106.27 116  
 (004500) 107.01 100 (004520) 107.00  
 (004511) 107.03 117 (004500) 106.25  
 (004514) 107.04 110 (004510) 106.27  
 (004500) 107.06 1100  
 (004527) 107.08 110 (004510) 107.05  
 (004500) 107.09 120  
 (004520) 107.10 121  
 (004530) 107.12 123 (004527) 107.00  
 (004540) 107.13 124  
 (004541) 107.14 125  
 (004540) 107.15 120 (004530) 107.12 (004540) 107.13  
 (004503) 107.17 130  
 (004504) 107.18 131  
 (004501) 107.19 132 (004502) 107.16  
 (004502) 107.20 133  
 (004503) 107.21 134  
 (004502) 108.01 140 (004502) 107.10 (004503) 107.17 (004501) 107.10 (004502) 107.20  
 (004505) 108.05 1400  
 (004500) 108.06 1401 (004504) 108.04  
 (004500) 108.07 1402  
 (004503) 108.09 141 (004500) 108.00  
 (004611) 108.10 1470  
 (004612) 108.11 1471  
 (004615) 108.12 1472 (004611) 108.10  
 (004610) 108.14 1473  
 (004610) 108.15 1474 (004617) 108.13  
 (004621) 108.16 1400 (004610) 108.14  
 (004623) 108.18 1491  
 (004624) 108.19 1400 (004602) 108.17  
 (004504) 108.20 (004630) 108.30  
 (004600) 108.22 142  
 (004607) 108.23 143 (004595) 108.21  
 (004604) 108.26 144  
 (004605) 108.27 145 (004603) 108.25  
 (004606) 108.28 146  
 (004610) 108.29 147 (004605) 108.27  
 (004620) 108.30 1475 (004610) 108.29  
 (004620) 108.31 1476  
 (004630) 108.32 1477  
 (004633) 108.33 1479 (004623) 108.10 (004625) 108.19 (004610) 108.20 (004620) 108.30 (004620) 108.31

1004634 109.34 142  
1004639 110.36 143 1004633 119.33  
1004641 109.37 193

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACSTP3

|                       |                                    |                                    |                                  |                                  |                                  |
|-----------------------|------------------------------------|------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1004652 111.01 ACSTP3 | 1003933 91.17-X<br>1004651 95.19-X | 1003947 92.13-X<br>1004100 95.25-X | 1004811 94.11-X                  | 1004827 94.20-X                  | 1004843 95.04-X                  |
| 1004667 111.02 403    |                                    |                                    |                                  |                                  |                                  |
| 1004695 111.04 410    | 1004662 111.03                     |                                    |                                  |                                  |                                  |
| 1004697 111.05 411    | 1004709 111.12                     |                                    |                                  |                                  |                                  |
| 1004698 111.06 412    |                                    |                                    |                                  |                                  |                                  |
| 1004699 111.07 413    |                                    |                                    |                                  |                                  |                                  |
| 1004700 111.08 413    | 1004720 112.02                     |                                    |                                  |                                  |                                  |
| 1004701 111.09 414    |                                    |                                    |                                  |                                  |                                  |
| 1004704 111.11 415    |                                    |                                    |                                  |                                  |                                  |
| 1004705 111.12 416    |                                    |                                    |                                  |                                  |                                  |
| 1004713 111.13 417    | 1004687 111.05                     | 1004719 111.17                     |                                  |                                  |                                  |
| 1004714 111.14 418    |                                    |                                    |                                  |                                  |                                  |
| 1004718 111.16 419    |                                    |                                    |                                  |                                  |                                  |
| 1004720 111.18 423    | 1004687 111.05<br>1004719 111.17   | 1004653 111.05<br>1004723 112.01   | 1004703 111.10                   | 1004704 111.11                   | 1004713 111.13                   |
| 1004856 111.19 530    | 1004717 111.15                     | 1004753 113.10                     | 1004771 114.03                   | 1004772 114.04                   | 1004774 114.06                   |
| 1004860 111.20 539    | 1004734 111.18                     | 1004852 113.21                     |                                  |                                  |                                  |
| 1004861 111.21 540    |                                    |                                    |                                  |                                  |                                  |
| 1004870 111.25 549    | 1004880 111.20                     |                                    |                                  |                                  |                                  |
| 1004723 112.01 420    | 1004700 111.08                     |                                    |                                  |                                  |                                  |
| 1004760 113.05        | 1004758 113.03                     |                                    |                                  |                                  |                                  |
| 1004762 113.07 1030   |                                    |                                    |                                  |                                  |                                  |
| 1004763 113.08        | 1004762 113.07                     |                                    |                                  |                                  |                                  |
| 1004720 113.10 500    | 1004682 111.03                     |                                    |                                  |                                  |                                  |
| 1004762 113.12 531    |                                    |                                    |                                  |                                  |                                  |
| 1004767 113.13 510    | 1004761 113.11                     |                                    |                                  |                                  |                                  |
| 1004768 113.14 510    | 1004757 113.01                     | 1004781 113.10                     | 1004777 114.07                   | 1004778 114.09                   |                                  |
| 1004769 113.17 511    |                                    |                                    |                                  |                                  |                                  |
| 1004780 113.18 516    | 1004767 113.13                     | 1004777 114.07                     |                                  |                                  |                                  |
| 1004845 113.20 563    | 1004781 113.10                     | 1004778 114.09                     | 1004838 114.20                   | 1004816 115.10                   |                                  |
| 1004765 114.01 1095   | 1004761 113.06                     |                                    |                                  |                                  |                                  |
| 1004772 114.04 512    | 1004784 113.09                     | 1004753 113.16                     |                                  |                                  |                                  |
| 1004773 114.05 513    |                                    |                                    |                                  |                                  |                                  |
| 1004777 114.07 514    | 1004774 114.06                     |                                    |                                  |                                  |                                  |
| 1004778 114.08 515    | 1004767 113.13                     |                                    |                                  |                                  |                                  |
| 1004785 114.10 520    | 1004778 114.09                     | 1004829 115.13                     |                                  |                                  |                                  |
| 1004786 114.11 520    | 1004841 114.21                     |                                    |                                  |                                  |                                  |
| 1004787 114.12 521    |                                    |                                    |                                  |                                  |                                  |
| 1004795 114.18        | 1004784 114.17                     |                                    |                                  |                                  |                                  |
| 1004830 114.20 500    | 1004785 114.11<br>1004805 115.00   | 1004781 114.14<br>1004828 115.10   | 1004793 114.18<br>1004811 115.11 | 1004795 115.04<br>1004806 115.14 | 1004804 115.07<br>1004834 115.16 |
| 1004787 115.03        | 1004786 115.01                     |                                    |                                  |                                  |                                  |
| 1004882 115.06 522    |                                    |                                    |                                  |                                  |                                  |
| 1004895 115.08 523    | 1004834 115.16                     |                                    |                                  |                                  |                                  |
| 1004810 115.09 526    | 1004881 115.05                     |                                    |                                  |                                  |                                  |
| 1004820 115.10 527    | 1004884 115.07                     | 1004834 115.16                     |                                  |                                  |                                  |
| 1004821 115.11 528    |                                    |                                    |                                  |                                  |                                  |
| 1004822 115.12 529    |                                    |                                    |                                  |                                  |                                  |
| 1004880 115.14 524    | 1004829 115.10                     |                                    |                                  |                                  |                                  |
| 1004832 115.15 530    | 1004884 115.09                     |                                    |                                  |                                  |                                  |
| 1004889 115.17 525    | 1004821 115.11                     | 1004888 115.14                     |                                  |                                  |                                  |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ME10H2

1004883 110.01 ME10H2 1003946 92.04-X  
1004916 110.02 1004917 110.03  
1004917 110.03 100



| 06/14/74 |           | TABLE OF CONTENTS AND REFERENCES |            | AUTOFLOW CHART SET - SHEEP |                            | PAGE 10 |
|----------|-----------|----------------------------------|------------|----------------------------|----------------------------|---------|
| CARD NO  | PAGE/BOOK | NAME                             | REFERENCES | SOURCE                     | SEQUENCE NO. AND PAGE/BOOK |         |
| 1004324  | 110.05    |                                  | 1004025    | 110.07                     |                            |         |
| 1004325  | 110.07    | 101                              |            |                            |                            |         |
| 1004326  | 110.10    |                                  | 1004037    | 110.14                     |                            |         |
| 1004327  | 110.12    | 104                              |            |                            |                            |         |
| 1004328  | 110.13    | 105                              | 1004033    | 110.11                     |                            |         |
| 1004329  | 110.14    | 106                              |            |                            |                            |         |
| 1004330  | 110.16    |                                  | 1004051    | 110.10                     |                            |         |
| 1004331  | 110.18    | 107                              |            |                            |                            |         |
| 1004332  | 110.20    | 108                              |            |                            |                            |         |
| 1004333  | 110.20    |                                  | 1004074    | 110.27                     |                            |         |
| 1004334  | 110.27    | 1090                             |            |                            |                            |         |
| 1004335  | 110.31    | 110                              |            |                            |                            |         |
| 1004336  | 110.32    | 111                              | 1004080    | 110.30                     |                            |         |
| 1004337  | 110.35    | 112                              |            |                            |                            |         |
| 1004338  | 110.36    | 113                              | 1004080    | 110.34                     |                            |         |
| 1004339  | 110.38    | 114                              |            |                            |                            |         |
| 1004340  | 110.40    | 115                              | 1004085    | 110.01                     |                            |         |
| 1004341  | 110.44    | 120                              |            |                            |                            |         |
| 1004342  | 110.46    |                                  | 1004087    | 110.07                     |                            |         |
| 1004343  | 110.47    | 121                              |            |                            |                            |         |
| 1004344  | 110.50    | 100                              |            |                            |                            |         |
| 1004345  | 110.55    | 104                              |            |                            |                            |         |
| 1004346  | 110.12    |                                  | 1005023    | 110.15                     |                            |         |
| 1004347  | 110.15    | 100                              |            |                            |                            |         |
| 1004348  | 110.18    | 100                              | 1005012    | 110.00                     |                            |         |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACTIV

|         |        |        |         |         |         |         |
|---------|--------|--------|---------|---------|---------|---------|
| 1005037 | 122.01 | ACT177 | 1005073 | 00.09-X | 1005102 | 04.10-X |
| 1005101 | 122.01 | 700    |         |         |         |         |
| 1005102 | 122.02 |        | 1005103 | 122.03  |         |         |
| 1005103 | 122.03 | 701    |         |         |         |         |
| 1005104 | 122.04 | 000    |         |         |         |         |
| 1005107 | 122.05 |        | 1005200 | 125.27  |         |         |
| 1005109 | 122.06 |        | 1005110 | 122.07  |         |         |
| 1005110 | 122.07 | 0000   |         |         |         |         |
| 1005112 | 122.09 |        | 1005113 | 122.10  |         |         |
| 1005113 | 122.10 | 0001   |         |         |         |         |
| 1005117 | 122.12 |        | 1005118 | 122.13  |         |         |
| 1005118 | 122.13 | 001    |         |         |         |         |
| 1005121 | 122.15 |        | 1005125 | 122.19  |         |         |
| 1005123 | 122.17 | 0010   |         |         |         |         |
| 1005124 | 122.18 | 0011   | 1005126 | 122.16  |         |         |
| 1005125 | 122.18 | 0012   |         |         |         |         |
| 1005130 | 122.20 | 002    | 1005147 | 122.20  |         |         |
| 1005131 | 123.01 | 003    | 1005147 | 122.20  |         |         |
| 1005170 | 123.03 | 004    | 1005157 | 122.31  |         |         |
| 1005175 | 123.05 |        | 1005194 | 123.14  |         |         |
| 1005184 | 123.06 | 005    |         |         |         |         |
| 1005188 | 123.10 | 006    | 1005183 | 123.08  |         |         |
| 1005194 | 123.14 | 007    |         |         |         |         |
| 1005198 | 123.15 | 008    |         |         |         |         |
| 1005210 | 123.21 | 010    |         |         |         |         |
| 1005223 | 123.25 | 020    | 1005211 | 123.20  |         |         |
| 1005224 | 123.25 | 021    |         |         |         |         |
| 1005226 | 123.30 | 030    | 1005223 | 123.25  |         |         |
| 1005241 | 123.32 | 031    |         |         |         |         |
| 1005251 | 124.01 | 032    | 1005250 | 123.30  |         |         |
| 1005274 | 124.06 | 0323   |         |         |         |         |
| 1005278 | 124.06 | 0324   | 1005273 | 124.04  |         |         |
| 1005284 | 124.07 | 0326   | 1005278 | 124.06  |         |         |
| 1005288 | 124.08 | 0327   |         |         |         |         |
| 1005291 | 124.09 | 0328   | 1005284 | 124.07  | 1005293 | 124.11  |
| 1005292 | 124.10 | 0329   |         |         |         |         |
| 1005293 | 124.11 | 0329   |         |         |         |         |
| 1005297 | 124.12 | 0330   | 1005291 | 124.09  |         |         |
| 1005298 | 124.13 | 0331   |         |         |         |         |

|          |        |      |          |        |          |        |
|----------|--------|------|----------|--------|----------|--------|
| (005302) | 125.01 | 0332 | (005307) | 125.12 |          |        |
| (005303) | 125.02 | 0333 |          |        |          |        |
| (005309) | 125.03 | 0334 | (005305) | 125.10 | (005301) | 125.13 |
| (005321) | 125.10 | 034  | (005340) | 125.10 |          |        |
| (005322) | 125.07 |      | (005372) | 125.14 |          |        |
| (005325) | 125.09 | 0340 |          |        |          |        |
| (005326) | 125.10 | 0341 | (005324) | 125.00 |          |        |
| (005327) | 125.11 | 0342 |          |        |          |        |
| (005328) | 125.12 | 0343 | (005326) | 125.10 |          |        |
| (005332) | 125.14 | 0344 | (005327) | 125.11 |          |        |
| (005336) | 125.15 | 0345 |          |        |          |        |
| (005340) | 125.16 | 0346 |          |        |          |        |
| (005344) | 125.17 | 0349 | (005340) | 125.16 |          |        |
| (005380) | 125.22 | 035  |          |        |          |        |
| (005383) | 125.24 | 036  | (005387) | 125.21 |          |        |
| (005384) | 125.25 | 037  |          |        |          |        |
| (005388) | 125.27 | 038  | (005340) | 125.31 | (005350) | 125.30 |
| (005374) | 125.29 | 0340 |          |        |          |        |
| (005376) | 125.31 |      | (005381) | 125.34 |          |        |
| (005381) | 125.34 | 032  |          |        |          |        |
| (005385) | 125.35 | 039  | (005373) | 125.20 |          |        |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACE16J(INS,ED,AE1,ADJ,AE,AD)

|          |        |        |          |          |          |          |          |          |          |          |          |          |
|----------|--------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| (005386) | 126.01 | ACE16J | (005198) | 123.10-X | (005213) | 123.02-X | (005226) | 123.27-X | (005242) | 123.33-X | (005336) | 125.15-X |
|          |        |        | (005353) | 125.20-X | (005359) | 125.23-X | (005365) | 125.26-X |          |          |          |          |
| (005420) | 126.01 | 100    |          |          |          |          |          |          |          |          |          |          |
| (005432) | 126.02 | 101    | (005420) | 126.01   |          |          |          |          |          |          |          |          |
| (005435) | 126.04 |        | (005441) | 126.07   |          |          |          |          |          |          |          |          |
| (005441) | 126.07 | 102    |          |          |          |          |          |          |          |          |          |          |
| (005440) | 126.11 |        | (005440) | 126.12   |          |          |          |          |          |          |          |          |
| (005440) | 126.12 | 103    |          |          |          |          |          |          |          |          |          |          |
| (005405) | 126.15 |        | (005400) | 126.21   |          |          |          |          |          |          |          |          |
| (005400) | 126.21 | 104    |          |          |          |          |          |          |          |          |          |          |
| (005470) | 126.23 | 100    | (005420) | 126.01   |          |          |          |          |          |          |          |          |
| (005470) | 126.24 |        | (005400) | 126.03   |          |          |          |          |          |          |          |          |
| (005470) | 126.26 | 101    |          |          |          |          |          |          |          |          |          |          |
| (005470) | 126.27 | 102    | (005477) | 126.25   |          |          |          |          |          |          |          |          |
| (005402) | 126.01 | 103    | (005470) | 126.27   |          |          |          |          |          |          |          |          |
| (005403) | 126.02 | 104    | (005470) | 126.27   |          |          |          |          |          |          |          |          |
| (005403) | 126.03 | 100    |          |          |          |          |          |          |          |          |          |          |
| (005403) | 126.04 | 100    |          |          |          |          |          |          |          |          |          |          |
| (005405) | 126.05 |        | (005407) | 126.07   |          |          |          |          |          |          |          |          |
| (005407) | 126.07 | 101    |          |          |          |          |          |          |          |          |          |          |
| (005605) | 126.11 |        | (005605) | 126.12   |          |          |          |          |          |          |          |          |
| (005606) | 126.12 | 102    |          |          |          |          |          |          |          |          |          |          |
| (005613) | 126.14 | 100    |          |          |          |          |          |          |          |          |          |          |
| (005614) | 126.15 | 104    |          |          |          |          |          |          |          |          |          |          |
| (005623) | 126.20 |        | (005625) | 126.23   |          |          |          |          |          |          |          |          |
| (005625) | 126.23 | 100    |          |          |          |          |          |          |          |          |          |          |
| (005629) | 126.25 |        | (005631) | 126.26   |          |          |          |          |          |          |          |          |
| (005631) | 126.29 | 1000   |          |          |          |          |          |          |          |          |          |          |
| (005636) | 126.30 | 100    | (005613) | 126.14   |          |          |          |          |          |          |          |          |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACN16R

|          |        |        |          |        |  |  |
|----------|--------|--------|----------|--------|--|--|
| (005606) | 132.01 | ACN16R | (005629) | 0.13-X |  |  |
| (005610) | 132.01 | 000    |          |        |  |  |
| (005615) | 132.03 |        | (005616) | 132.04 |  |  |
| (005616) | 132.04 | 0000   |          |        |  |  |
| (005620) | 132.05 |        | (005621) | 132.07 |  |  |
| (005621) | 132.07 | 001    |          |        |  |  |
| (005624) | 132.09 |        | (005625) | 132.10 |  |  |

06/14/74  
TABLE OF CONTENTS AND REFERENCES

AJIOLEW CHART SET - SHEEP  
REFERENCES 150,000 SEQUENCE NO. AND PAGE/BOX

PAGE 20

| CARD ID  | PAGE/BOX | NAME    |
|----------|----------|---------|
| 1003625  | 132.10   | 0010    |
| 1003642  | 132.12   |         |
| 1003643  | 132.13   |         |
| 1003644  | 132.14   | 002     |
| 1003645  | 132.15   | 003     |
| 1003646  | 132.20   | 004     |
| 1003671  | 133.01   | 0040    |
| 1003700  | 133.13   | 0041    |
| 1003713  | 133.14   | 0042    |
| 1003714  | 133.15   | 0043    |
| 1003724  | 134.01   | 0045    |
| 1003731  | 134.03   | 0045    |
| 1003743  | 134.00   | 0047    |
| 1003749  | 134.10   | 0040    |
| 1003756  | 134.12   | 0040    |
| 1003760  | 134.15   | 005     |
| 1003764  | 134.16   | 0050    |
| 1003768  | 134.17   | 0051    |
| 1003769  | 134.19   | 006     |
| 1003777  | 134.23   | 007     |
| 1003780  | 134.24   | 008     |
| 1003783  | 134.26   |         |
| 1003785  | 134.28   | 009     |
| 1003786  | 134.29   | 010     |
| 1003787  | 135.01   | 011     |
| 1003801  | 135.07   | 012     |
| 1003804  | 135.08   | 013     |
| 1003805  | 135.09   |         |
| 1003806  | 135.10   | 014     |
| 1003816  | 135.12   | 020     |
| 1003817  | 135.13   |         |
| 1003818  | 135.14   | 021     |
| 1003846  | 135.26   |         |
| 1003847  | 135.27   | 022     |
| 1003880  | 135.34   | 0220    |
| 1003874  | 135.35   | 0221    |
| 1003885  | 135.03   | 023     |
| 1003886  | 135.04   | 024     |
| 1003894  | 135.05   | 025     |
| 1003895  | 135.06   | 026     |
| 1003901  | 135.12   | 027     |
| 1003902  | 135.13   | 028     |
| 1003908  | 135.16   | 029     |
| 1003909  | 135.17   | 030     |
| 1003913  | 135.19   | 030     |
| 1003918  | 135.20   | 030     |
| 1003927  | 135.22   |         |
| 1003929  | 135.25   | 0300    |
| 1003933  | 135.29   |         |
| 1003935  | 135.31   | 0307    |
| 1003938  | 135.34   |         |
| 1003941  | 135.37   | 0309    |
| 1003945  | 135.40   |         |
| 1003947  | 135.43   | 0309    |
| 1003951  | 135.46   |         |
| 1003963  | 137.02   | 0400    |
| 1003967  | 137.04   | 0401    |
| 1003968  | 137.05   |         |
| 1003962  | 137.06   | 0403    |
| 1003970  | 137.10   | 050     |
| 1003972  | 137.12   |         |
| 1003973  | 137.13   | 051     |
| 1003977  | 137.15   |         |
| 1003980  | 137.17   | 052     |
| 1003981  | 137.18   | 053     |
| 10039810 | 137.20   | 0530    |
| 10039811 | 137.20   | 0531    |
| 10039811 | 137.24   | 0532    |
| 10039835 | 138.01   | 0533    |
| 1003990  | 138.03   | 0534    |
| 1003997  | 138.10   | 054     |
| 1003970  | 138.11   | 055     |
| 1003913  | 136.10   |         |
| 1003944  | 136.14   |         |
| 1003663  | 132.18   |         |
| 1003668  | 132.20   |         |
| 1003663  | 132.18   |         |
| 1003668  | 132.20   |         |
| 1003713  | 133.14   |         |
| 1003701  | 133.13   | 1003700 |
| 1003701  | 133.13   | 1003700 |
| 1003742  | 134.07   |         |
| 1003747  | 134.09   |         |
| 1003760  | 134.14   |         |
| 1003764  | 134.16   |         |
| 1003776  | 134.22   |         |
| 1003787  | 135.01   |         |
| 1003794  | 134.27   |         |
| 1003800  | 135.05   |         |
| 1003805  | 135.10   |         |
| 1003810  | 135.14   |         |
| 1003847  | 135.27   |         |
| 1003880  | 135.33   |         |
| 1003894  | 135.02   |         |
| 1003893  | 135.07   |         |
| 1003900  | 135.11   |         |
| 1003907  | 135.15   |         |
| 1003920  | 135.25   |         |
| 1003930  | 135.31   |         |
| 1003941  | 135.37   |         |
| 1003947  | 135.43   |         |
| 1003953  | 137.02   |         |
| 1003962  | 137.06   |         |
| 1003970  | 137.10   | 1003965 |
| 1003973  | 137.13   |         |
| 1003990  | 140.05   |         |
| 1003970  | 137.16   |         |
| 1003980  | 137.27   |         |
| 1003980  | 137.33   |         |
| 1003980  | 137.34   |         |
| 1003967  | 138.10   |         |
| 1003967  | 138.10   |         |

|        |        |      |        |        |
|--------|--------|------|--------|--------|
| 000070 | 130.13 | 054  | 000007 | 130.10 |
| 000081 | 130.14 | 057  | 000007 | 130.10 |
| 000095 | 130.16 | 058  |        |        |
| 000098 | 130.20 | 059  | 000077 | 130.12 |
| 000107 | 130.03 | 0590 | 000084 | 130.15 |
| 000100 | 130.04 | 0501 | 000105 | 130.02 |
| 000117 | 130.07 | 0502 |        |        |
| 000118 | 130.08 | 0503 | 000116 | 130.06 |
| 000122 | 130.09 | 0504 |        |        |
| 000126 | 130.11 | 0505 | 000117 | 130.07 |
| 000137 | 130.15 | 060  |        |        |
| 000138 | 130.16 | 061  | 000136 | 130.14 |
| 000140 | 130.18 | 062  |        |        |
| 000143 | 130.19 | 063  | 000139 | 130.17 |
| 000150 | 130.23 |      | 000163 | 130.20 |
| 000158 | 130.25 | 064  |        |        |
| 000160 | 130.26 | 065  | 000157 | 130.24 |
| 000163 | 130.28 | 066  |        |        |
| 000213 | 140.12 | 069  | 000210 | 140.11 |
| 000217 | 140.13 | 070  | 000210 | 140.11 |
| 000224 | 140.15 | 071  |        |        |
| 000233 | 140.16 | 072  | 000223 | 140.14 |
| 000234 | 140.17 | 073  |        |        |
| 000236 | 140.19 |      | 000238 | 140.20 |
| 000239 | 140.20 | 074  |        |        |
| 000241 | 140.21 | 075  | 000233 | 140.16 |
| 000243 | 140.23 |      | 000245 | 140.24 |
| 000245 | 140.24 | 076  |        |        |
| 000249 | 140.25 | 079  |        |        |
| 000254 | 140.26 | 080  |        |        |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE ACPTA

|        |        |       |        |          |
|--------|--------|-------|--------|----------|
| 000304 | 143.01 | ACPTA | 000333 | 143.02-X |
| 000336 | 143.01 | 300   |        |          |
| 000338 | 143.04 | 320   |        |          |
| 000334 | 143.05 |       | 000401 | 143.08   |
| 000401 | 143.08 | 301   |        |          |
| 000406 | 143.11 | 3210  |        |          |
| 000408 | 143.12 | 3211  | 000405 | 143.11   |
| 000410 | 143.14 |       | 000414 | 143.18   |
| 000414 | 143.16 | 322   |        |          |
| 000420 | 143.20 |       | 000424 | 144.03   |
| 000424 | 144.03 | 323   |        |          |
| 000427 | 144.04 | 3230  | 000406 | 144.27   |
| 000429 | 144.06 |       | 000436 | 144.09   |
| 000430 | 144.09 | 324   |        |          |
| 000441 | 144.12 |       | 000444 | 144.14   |
| 000444 | 144.14 | 325   |        |          |
| 000448 | 144.15 | 330   | 000405 | 143.11   |
| 000450 | 144.17 |       | 000453 | 144.19   |
| 000453 | 144.19 | 331   |        |          |
| 000458 | 144.23 |       | 000464 | 144.27   |
| 000464 | 144.27 | 332   |        |          |
| 000468 | 145.01 | 340   | 000464 | 143.10   |
| 000470 | 145.03 |       | 000474 | 145.05   |
| 000474 | 145.05 | 341   |        |          |
| 000480 | 145.09 |       | 000484 | 145.12   |
| 000484 | 145.12 | 342   |        |          |
| 000490 | 145.16 |       | 000484 | 145.10   |
| 000494 | 145.19 | 343   |        |          |
| 000504 | 145.26 |       | 000521 | 145.34   |
| 000521 | 145.34 | 344   |        |          |
| 000526 | 146.01 | 000   | 000445 | 144.14   |
| 000527 | 146.02 |       | 000531 | 146.04   |
| 000531 | 146.04 | 0000  |        |          |
| 000537 | 146.06 | 001   | 000534 | 146.06   |

000522 145.34

|          |        |      |          |        |                                    |
|----------|--------|------|----------|--------|------------------------------------|
| (006542) | 146.09 | 6010 | (006534) | 146.05 |                                    |
| (006575) | 146.12 | 620  |          |        |                                    |
| (006576) | 146.13 |      | (006586) | 146.17 |                                    |
| (006586) | 146.17 | 621  |          |        |                                    |
| (006591) | 146.20 |      | (006594) | 146.22 |                                    |
| (006594) | 146.22 | 622  |          |        |                                    |
| (006598) | 146.24 | 623  |          |        |                                    |
| (006603) | 146.25 | 624  | (006597) | 146.23 |                                    |
| (006604) | 146.26 |      | (006517) | 146.31 |                                    |
| (006617) | 146.31 | 625  |          |        |                                    |
| (006623) | 147.02 |      | (006625) | 147.04 |                                    |
| (006629) | 147.04 | 626  |          |        |                                    |
| (006629) | 147.05 | 630  | (006600) | 146.24 |                                    |
| (006630) | 147.06 | 631  |          |        |                                    |
| (006636) | 147.10 | 632  |          |        |                                    |
| (006640) | 147.13 |      | (006650) | 147.17 |                                    |
| (006650) | 147.17 | 633  |          |        |                                    |
| (006654) | 147.20 |      | (006656) | 147.22 |                                    |
| (006656) | 147.22 | 634  |          |        |                                    |
| (006659) | 147.23 | 635  | (006635) | 147.09 |                                    |
| (006660) | 147.24 | 636  |          |        |                                    |
| (006664) | 147.27 |      | (006674) | 147.31 |                                    |
| (006674) | 147.31 | 637  |          |        |                                    |
| (006678) | 147.34 |      | (006680) | 147.36 |                                    |
| (006680) | 147.36 | 638  |          |        |                                    |
| (006685) | 147.37 | 240  | (006629) | 147.05 | (006659) 147.23                    |
| (006697) | 148.02 | 2410 |          |        |                                    |
| (006701) | 148.04 |      | (006702) | 148.05 |                                    |
| (006702) | 148.05 | 2411 |          |        |                                    |
| (006706) | 148.06 | 242  | (006686) | 148.01 |                                    |
| (006716) | 148.09 |      | (006718) | 148.12 |                                    |
| (006719) | 148.12 | 246  |          |        |                                    |
| (006726) | 148.15 | 250  |          |        |                                    |
| (006738) | 148.17 |      | (006738) | 148.20 |                                    |
| (006739) | 148.20 | 253  |          |        |                                    |
| (006753) | 148.24 |      | (006756) | 148.27 |                                    |
| (006756) | 148.27 | 263  |          |        |                                    |
| (006760) | 148.28 | 262  |          |        |                                    |
| (006773) | 148.33 |      | (006775) | 149.03 |                                    |
| (006775) | 149.03 | 2622 |          |        |                                    |
| (006788) | 149.06 |      | (006790) | 149.09 |                                    |
| (006790) | 149.09 | 267  |          |        |                                    |
| (006798) | 149.13 | 270  |          |        |                                    |
| (006799) | 149.14 | 2701 |          |        |                                    |
| (006800) | 149.15 | 2702 | (006798) | 149.13 |                                    |
| (006802) | 149.16 | 271  | (006798) | 149.13 | (006800) 149.15                    |
| (006804) | 150.01 | 2720 | (006802) | 149.16 |                                    |
| (006810) | 150.04 | 272  |          |        |                                    |
| (006819) | 150.06 | 276  |          |        |                                    |
| (006820) | 150.07 |      | (006823) | 150.10 |                                    |
| (006823) | 150.10 | 277  |          |        |                                    |
| (006826) | 150.11 | 278  |          |        |                                    |
| (006833) | 150.13 | 299  | (006799) | 149.14 | (006800) 149.15    (006802) 149.16 |

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - FUNCTION JN(IL,IN)

CHART TITLE - NON-PROCEDURAL STATEMENTS

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE MTCAL

(006886) 150.01 MTCAL    (006217) 149.13-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE BHOJT

(006004) 160.01 BHOJT (006070) 150.02-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE RTRID

(006007) 162.01 RTRID (006009) 150.01-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE MTPIN

(006010) 164.01 MTPIN (006071) 150.03-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE DAYBA

(006021) 166.01 DAYBA (001945) 35.03-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE DEACH

(006037) 168.01 DEACH (001582) 35.16-X (006024) 166.01-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE CSECH

(006050) 170.01 CSECH (000413) 9.12-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE PIVOT

(006063) 172.01 PIVOT (000391) 9.09-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE TEE

(006080) 174.01 TEE (000000) 172.01-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE TEL

(006093) 176.01 TEL (006067) 172.02-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE DLPVT

(007006) 178.01 DLPVT (000401) 10.10-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE PRIB

(007010) 180.01 PRIB (006213) 140.12-X

CHART TITLE - INTRODUCTORY COMMENTS

CHART TITLE - SUBROUTINE PRIC

(007032) 182.01 PRIC (006204) 140.15-X

CHART TITLE - INTRODUCTORY COMMENTS

06/14/74      TABLE OF CONTENTS AND REFERENCES  
CARD ID    PAGE/END    NAME

AUTOFLOW CHART SET - SHEEP  
REFERENCES    (SOURCE SEQUENCE NO. AND PAGE/END)

PAGE 24

CHART TITLE - SUBROUTINE PRTH

(007045) 104.01 PRTH      (000431) 9.21-X      (000515) 10.33-X

| LOCATION |          | DIAGNOSTIC                               |
|----------|----------|------------------------------------------|
| CARD ID  | PAGE/BOX |                                          |
| 000015)  | 2.02     | UNRECOGNIZED SYNTAX                      |
| 000023)  | 2.06     | UNRECOGNIZED SYNTAX                      |
| 000080)  | 6.14     | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 000087)  | 10.20    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 000089)  | 10.30    | UNDEFINED - 'READING' EXTERNAL REFERENCE |
| 000090)  | 14.19    | UNDEFINED - 'READING' EXTERNAL REFERENCE |
| 000082)  | 15.10    | UNDEFINED - 'READING' EXTERNAL REFERENCE |
| 000081)  | 16.12    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 001249)  | 20.31    | UNDEFINED - 'READING' EXTERNAL REFERENCE |
| 001455)  | 22.24    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 001488)  | 23.15    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 001544)  | 25.02    | UNDEFINED - 'READING' EXTERNAL REFERENCE |
| 001631)  | 26.32    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 001636)  | 26.34    | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 000010)  | 132.01   | UNDEFINED - 'WRITING' EXTERNAL REFERENCE |
| 000042)  | 146.00   | UNDEFINED - 'READING' EXTERNAL REFERENCE |



## PROGRAM FLOW CHARTS

06/14/70

AUTOFLEX CHART SET - SHEEP WING AND EMPENNAGE MODULE - PAGE 01

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

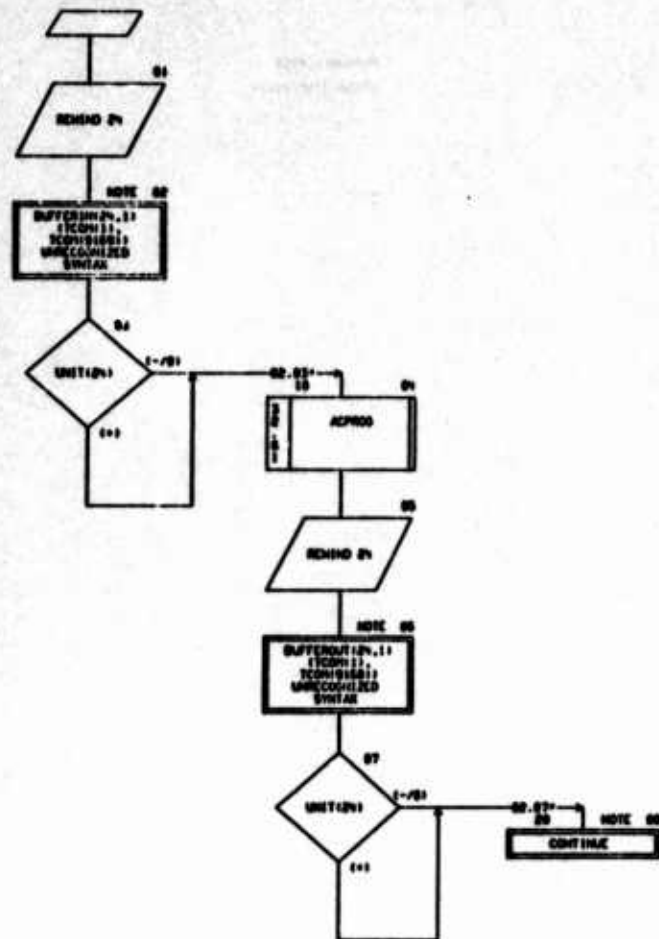
\*\*\*\*\*PROGRAM BLANK\*\*\*\*\*

\*\*\*PROGRAM FOR EIGHTH OVERLAY OF WING/EMPENNAGE MODULE\*\*\*

STRUCTURAL SYNTHESIS/WEIGHT ANALYSIS - ADV CONCEPT DESIGNS

\*\*\*\*\*

## CHART TITLE - PROCEDURES



06/16/74

AUTOLIN CHART SET - SHEEP MIND AND DIFFERENCE MODULE - PAGE 03

CHART TITLE - NON-PROCEEDURAL STATEMENTS

PROGRAM CLAY18  
COMMON TCOM1018P1

08/19/74

AUTOFLOW CHART SET - SWEEP WING AND EMPENNAGE MODULE - PAGE 64

CHART TITLE - INTRODUCTORY CONTENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ATBOPT\*\*\*\*\*

\*\*\*ADV. COMP. TORQUE-BOX SYNTHESIS CONTROL\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE ATB:PT

ATB:PT

00.11---&gt;

\*\*\*CONTROL  
SUBROUTINE FOR ADV.  
COMPOSITE ANALYSIS\*\*\*  
\*STRESS-DOE  
DESIGN--N/SPAR PLATE  
OR N-PILS\*  
\* OR N/RIB  
STRING OR FULL DEPTH  
HINGE/COVER\*

\*\*\*TYPE 10 FOR  
N/SPAR OR FDI  
DESIGNS\*\*\*  
\* PLATES--COVER  
10 = 1 AND SPAN 10 =  
1 OR 2\*  
\* N/PILS--COVER  
10 = 2 AND SPAN 10 =  
1 OR 2\*  
\* FULL DEPTH  
HINGE--COVER 10 = 1 AND  
SPAN 10 = 3\*

MT. CALC. 10=IC 1=  
AREA, 2=AREA AND  
PANEL MT.

01  
10M = 10T

\*\*\*\*SETUP PRINT 10  
FOR PRINT, PRINT, PRINT,  
PRINT\*\*\*\*  
\*\*\*IPA = ND(23) = 10  
FOR PRINT, PRINT.  
1.0=PRINT\*\*\*  
\*\*\*IPB = ND(24) = 10  
FOR PRINT, PRINT.  
1.0=PRINT\*\*\*

02  
IPA = DC(13)  
IPB = DC(13)

03  
ND(11) = ND(1)  
(10/1)

04  
ND(11) = ND(1)  
(10/1)

05  
ND(11) = ND(1)  
(10/1)

06  
ND(11) = ND(1)  
(10/1)

07  
ND(11) = ND(1)  
(10/1)

08  
ND(11) = ND(1)  
(10/1)

09  
ND(11) = ND(1)  
(10/1)

10  
ND(11) = ND(1)  
(10/1)

11  
ND(11) = ND(1)  
(10/1)

12  
ND(11) = ND(1)  
(10/1)

13  
ND(11) = ND(1)  
(10/1)

14  
ND(11) = ND(1)  
(10/1)

15  
ND(11) = ND(1)  
(10/1)

16  
ND(11) = ND(1)  
(10/1)

\*\*\*IPA FOR ND(11)\*\*\*

00.03  
00  
IP(120)

01  
IP(120)

02  
IPA = ND(11)

03  
IPA = ND(11)

04  
IPA = ND(11)

05  
IPA = ND(11)

06  
IPA = ND(11)

07  
IPA = ND(11)

08  
IPA = ND(11)

09  
IPA = ND(11)

10  
IPA = ND(11)

11  
IPA = ND(11)

12  
IPA = ND(11)

13  
IPA = ND(11)

14  
IPA = ND(11)

15  
IPA = ND(11)

16  
IPA = ND(11)

17  
IPA = ND(11)

18  
IPA = ND(11)

19  
IPA = ND(11)

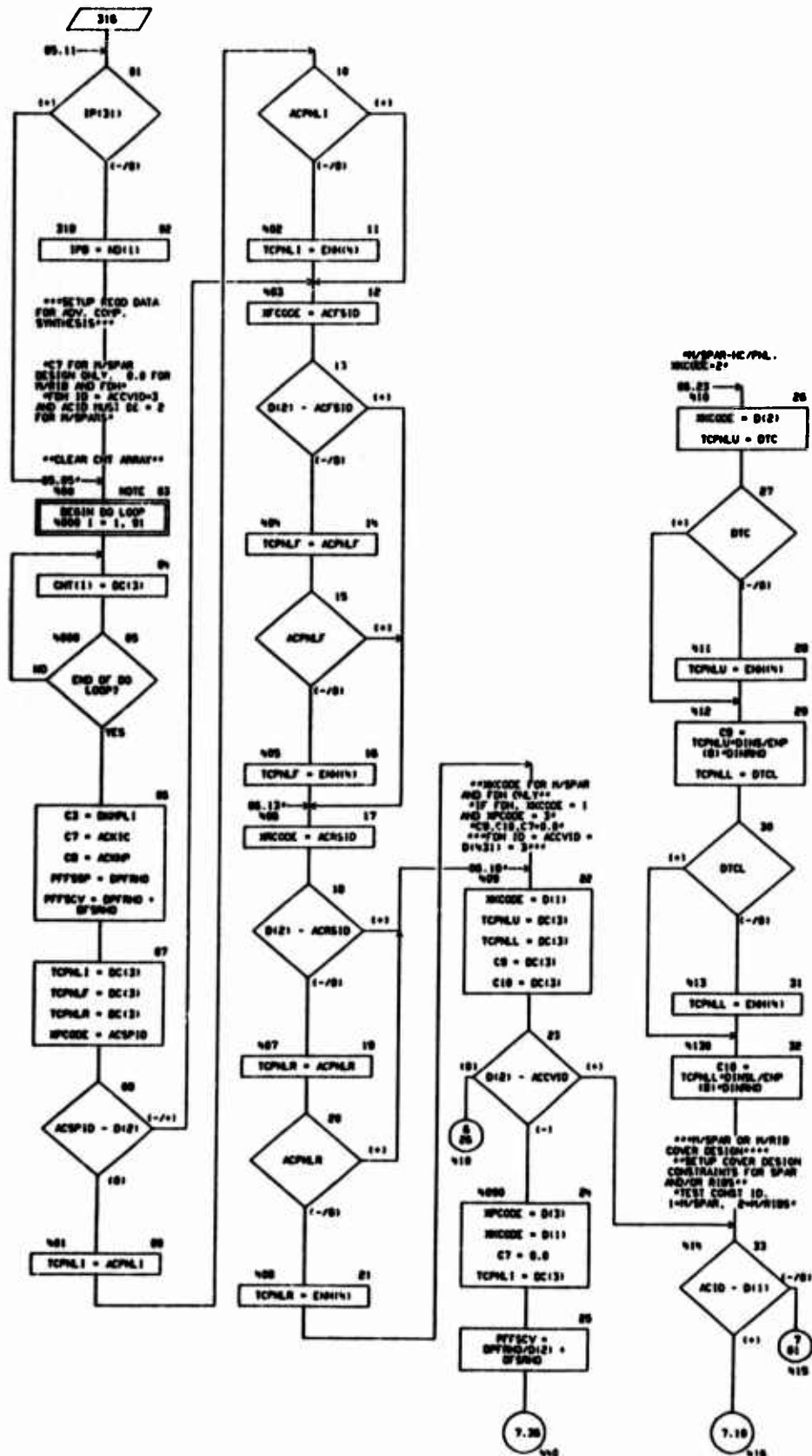
20  
IPA = ND(11)

21  
IPA = ND(11)

22  
IPA = ND(11)

23  
IPA = ND(11)

CHART TITLE - SUBROUTINE ATBOP1



••DATA FOR H/RID  
ONLY••  
•XSTRJ AND XSTRL •  
TYPE OF STRINGER  
UPR/LWR•  
• 1-1, 2-2, 3-1,  
4-4AT•

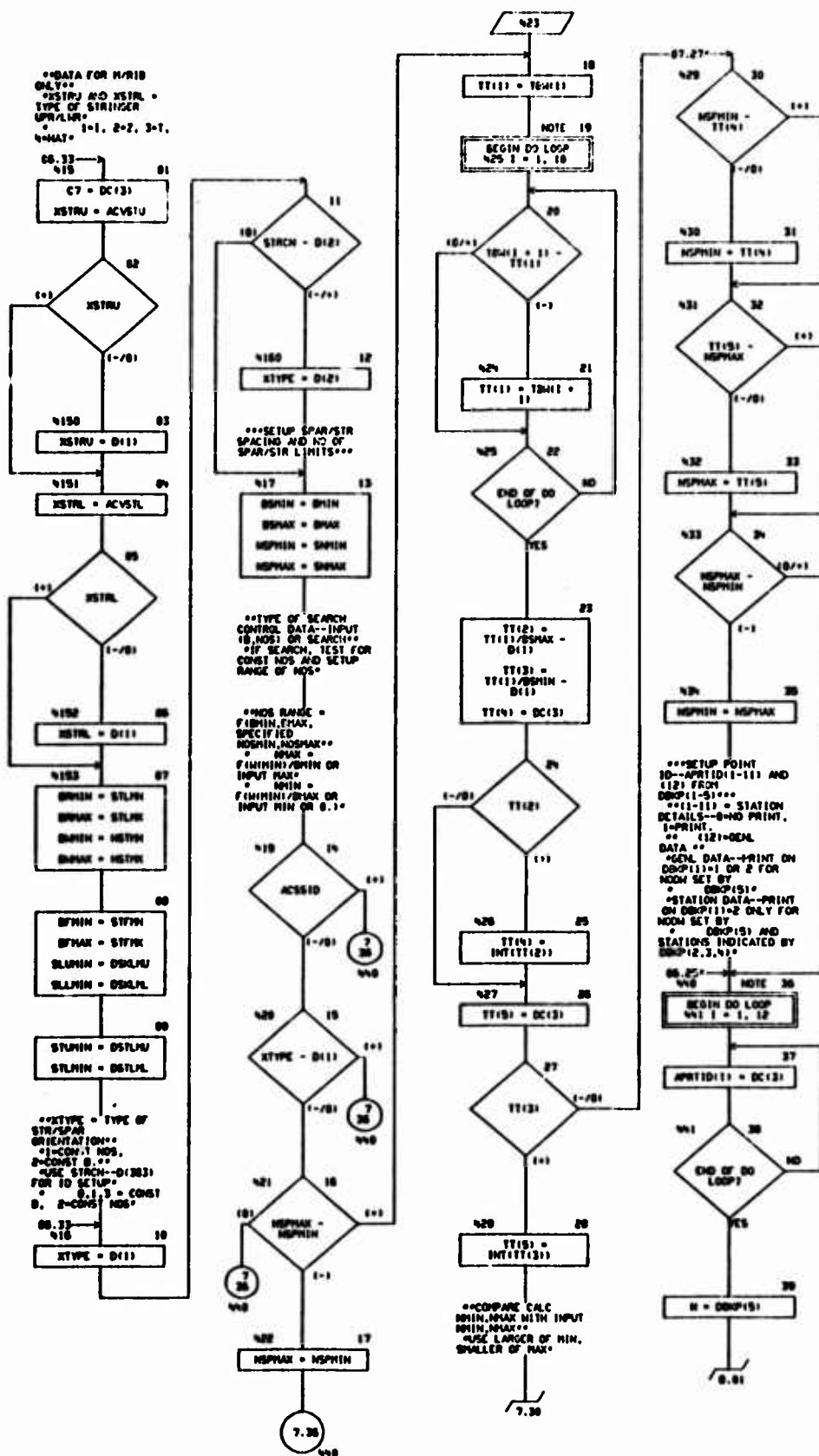




CHART TITLE - SHEROUIKE AIRPT

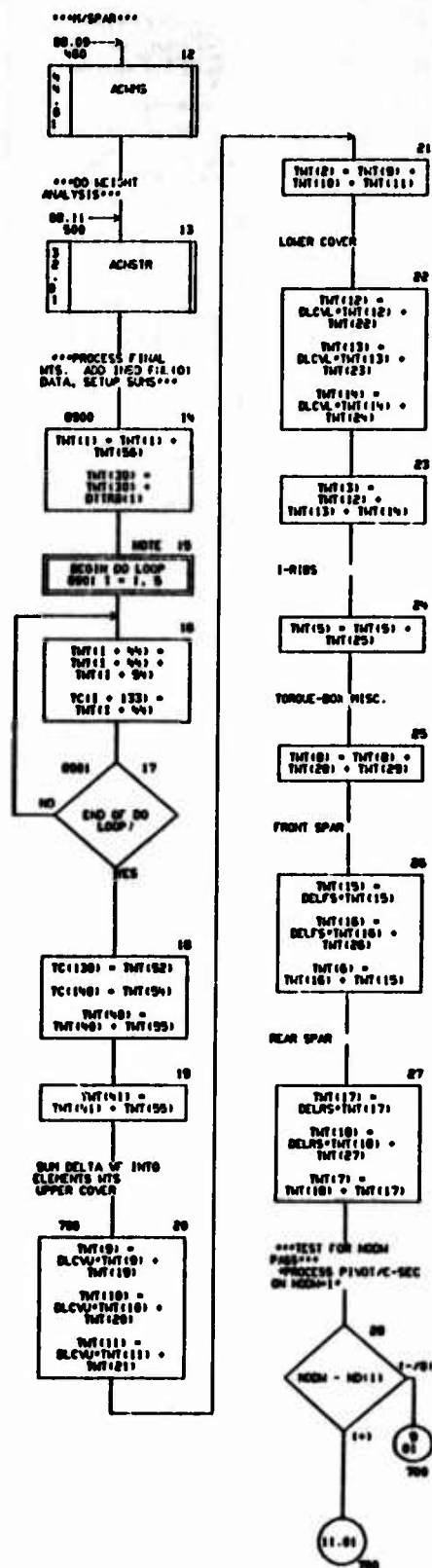
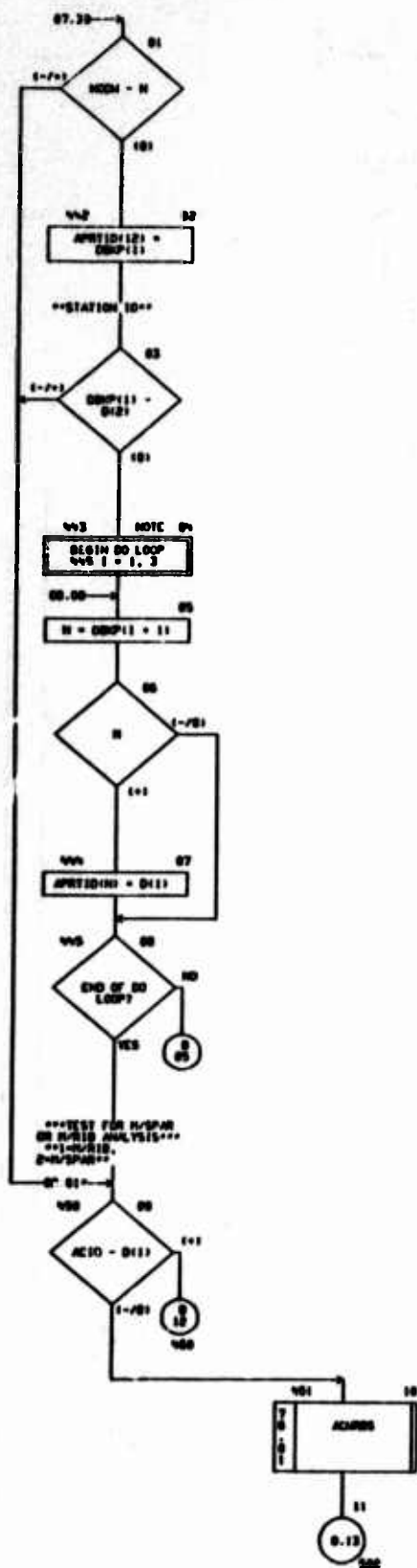


CHART TITLE - SUBROUTINE ATR0PT

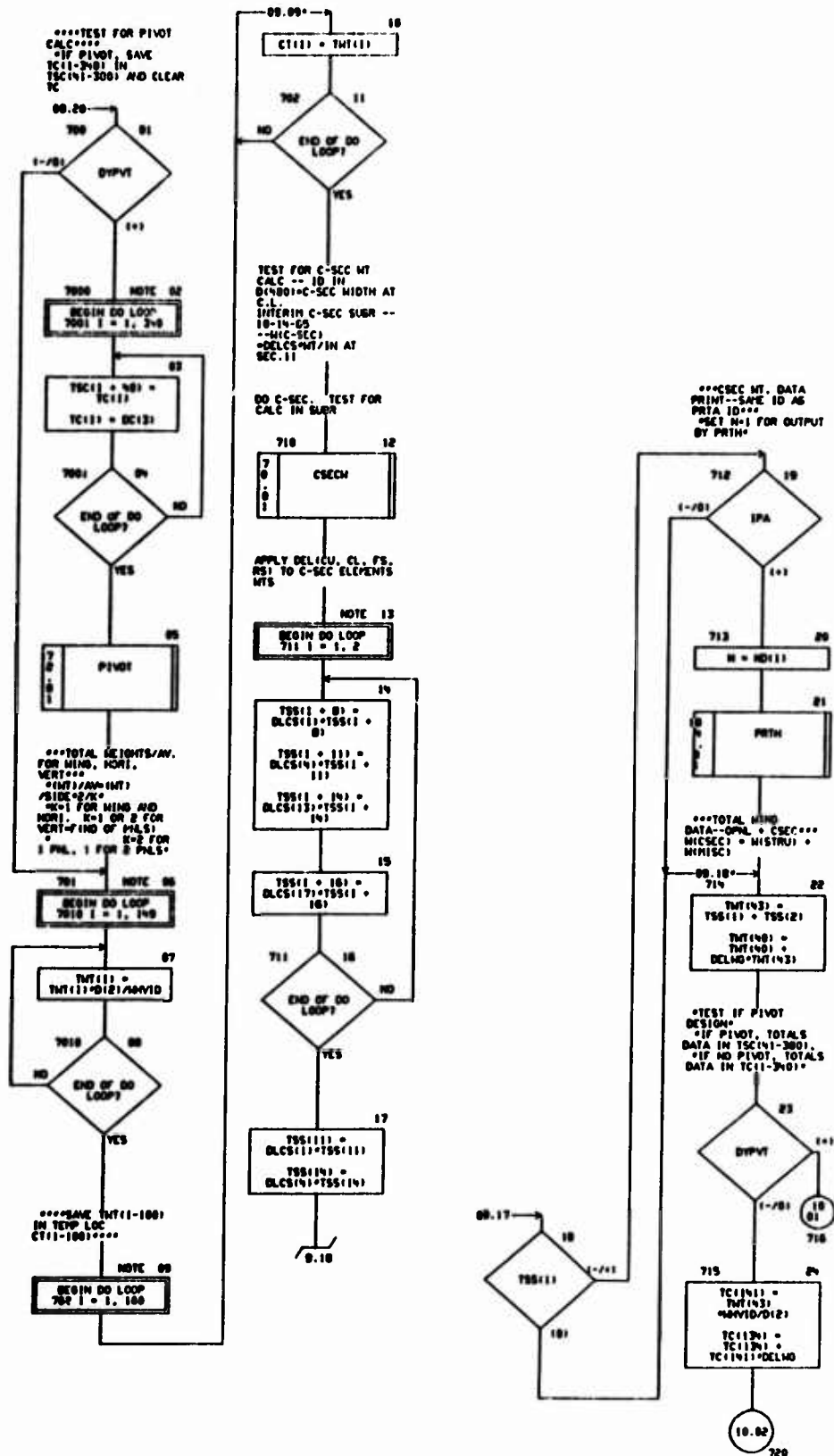
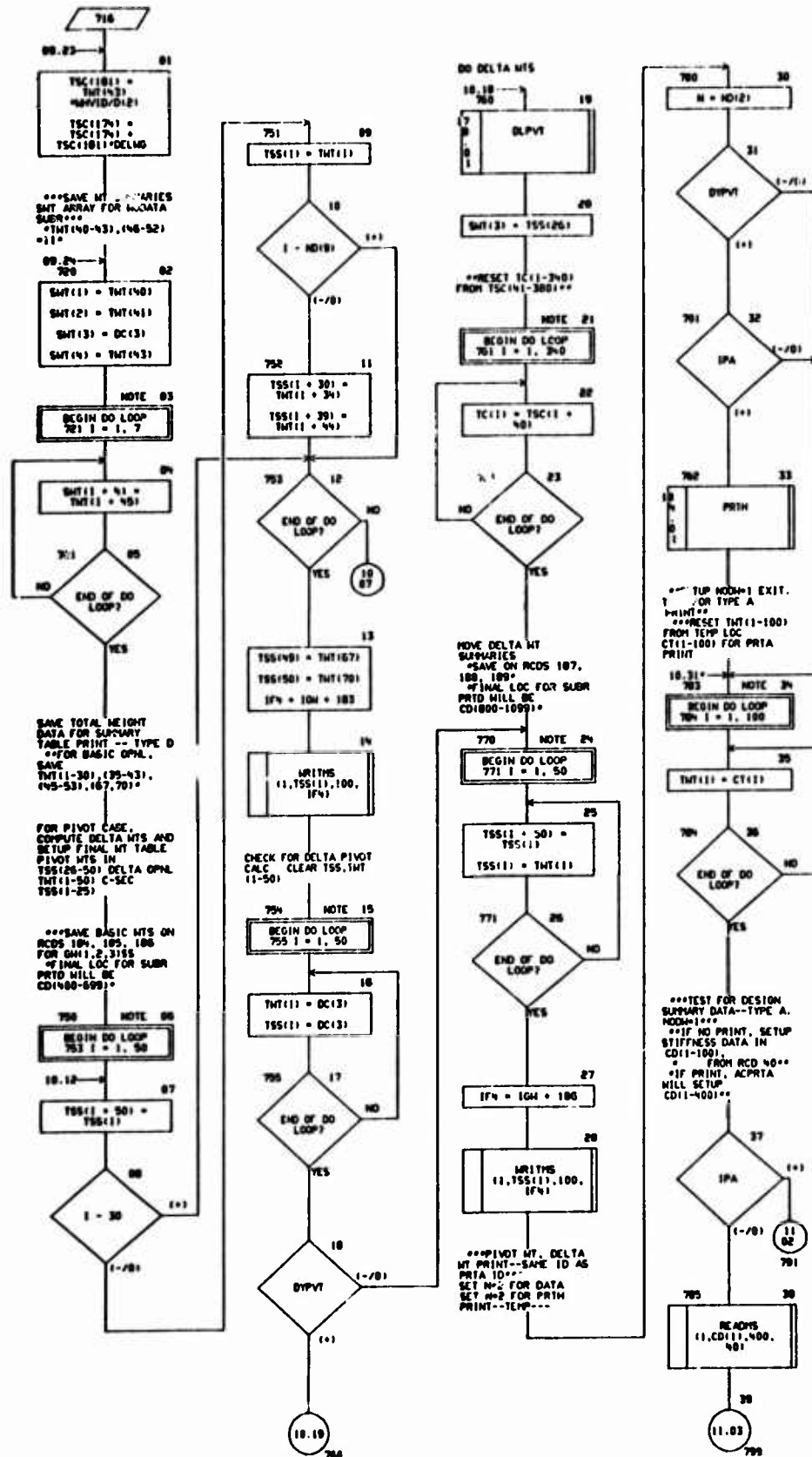


CHART TITLE - SUBROUTINE A100P1



06/14/76

AUTOFLON CHART SET - SHEEP MIND AND ENTERPAGE MODULE - PAGE 11

CHART TITLE - SUBROUTINE ATC-PT

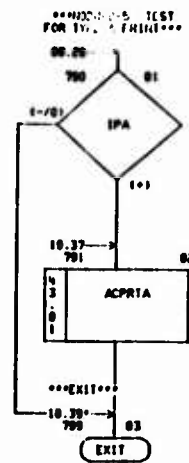


CHART TITLE - NON-PROCELRAL STATEMENTS

```

COMMON T(2000),D(2000),CD(2000),CT(100),TH(800),CT(2048)
COMMON /IPRINT/ IP(80)
DIMENSION DC(100),TDC(200),TSC(400),TSS(100),TMT(400),TSEC(300),
TC(400),TT(24),TD(40),
SMT(11),TDM(11),
DITRB(2),DEL(34),
DMP(5),APRTID(12),
ENP(9),EPM(6),CNT(91),
DLES(24)
EQUIVALENCE (DC(1),D(1401)),(TDC(1),T(1341)),(TSC(1),T(1541)),
TSS(1),T(1961)),(TMT(1),CD(1101)),(TSEC(1),CD(1501)),
TTC(1),T(1960)),(TD(1),T(620)),(TT(1),T(1317)),
HMTVD,T(157)),IDYPT,T(200)),(DMP,T(1399)),
(SMT(1),T(1734)),(TDM(1),T(1542)),(DLES(1),D(402)),(DELMO,T(1107)),
IDITRB(1),T(666)),(DEL(1),TMT(251)),
IDLCW,DEL(1)),(DLCV,DEL(41)),(DCLFS,DEL(13)),(DCLRS,DEL(17)),
IN,ND(30)),(IPA,ND(23)),(IPB,ND(24)),
(INDM,ND(56)),(IGH,ND(61)),(IGT,ND(57)),(IFN,ND(93))
EQUIVALENCE (ACD,D(430)),(ACCV,D(431)),
(ACVSTU,D(432)),(ACVSTL,D(433)),(ACFDC,D(434)),(ACSPID,D(435)),
(ACFSID,D(436)),(ACRSID,D(437)),(ACSSID,D(438)),(SAPAX,D(439)),
(SKOPN,D(435)),(SKOPK,D(436)),(STLH,D(437)),(SLH,D(438)),
(INSTH,D(437)),(INSTK,D(438)),(STYK,D(439)),(BMIN,D(430)),
(BMAX,D(431)),(SAPIN,D(432)),(STRCH,D(433)),(STFPH,D(434)),
(ACKOP,D(439)),(ACKIC,D(437)),(CKOPLI,D(438)),(OPFRMD,D(439)),
(ACPHL,D(438)),(ACPHLF,D(435)),(ACPHLR,D(436)),(OPSRMD,D(439)),
(OTC,D(432)),(DINS,D(435)),(OTL,D(436)),(DINSL,D(437)),
(ENP(1),D(1155)),(ENH(1),D(1154)),(D116RD,D(439))
EQUIVALENCE (CNT(1),T(1541)),(XSTPJ,CNT(1)),(XSTRL,CNT(2)),
(BBMIN,CNT(3)),(BRMAX,CNT(4)),(EEMIN,CNT(5)),(BPMAX,CNT(6)),
(BBMAX,CNT(7)),(BBMIN,CNT(40)),(NSPMIN,CNT(17)),(NSPMAX,CNT(18)),
(XTYPE,CNT(10)),(XCODE,CNT(19)),(XPCODE,CNT(20)),
(XFCODE,CNT(27)),(XRCODE,CNT(28)),
(C3,CNT(13)),(C7,CNT(122)),(C8,CNT(23)),(C9,CNT(34)),(C10,CNT(35)),
(TCPMLU,CNT(29)),(TCPMLL,CNT(30)),(TCPMLT,CNT(31)),
(TCPMLF,CNT(32)),(TCPMLR,CNT(33)),
(PFFSCV,CT(2047)),(PFFSSP,CT(2048)),
(BBMIN,CNT(41)),(BPMAX,CNT(42)),(SLUMIN,CNT(8)),
(SLLMIN,CNT(19)),(SLUMIN,CNT(15)),(STLMIN,CNT(16)),
(OSLUM,D(440)),(OSLML,D(441)),(OSTLU,D(442)),(OSTLML,D(443)),
(DMP(1),D(1574)),(APRTID(1),T(1073))
REAL NSPMIN,NSPMAX

```

06/14/76

AUTOFLOW CHART SET - SHEEP WINDING AND EFFICIENCY MODULE - PAGE 13

CHART TITLE - INTRODUCTORY COMMENTS

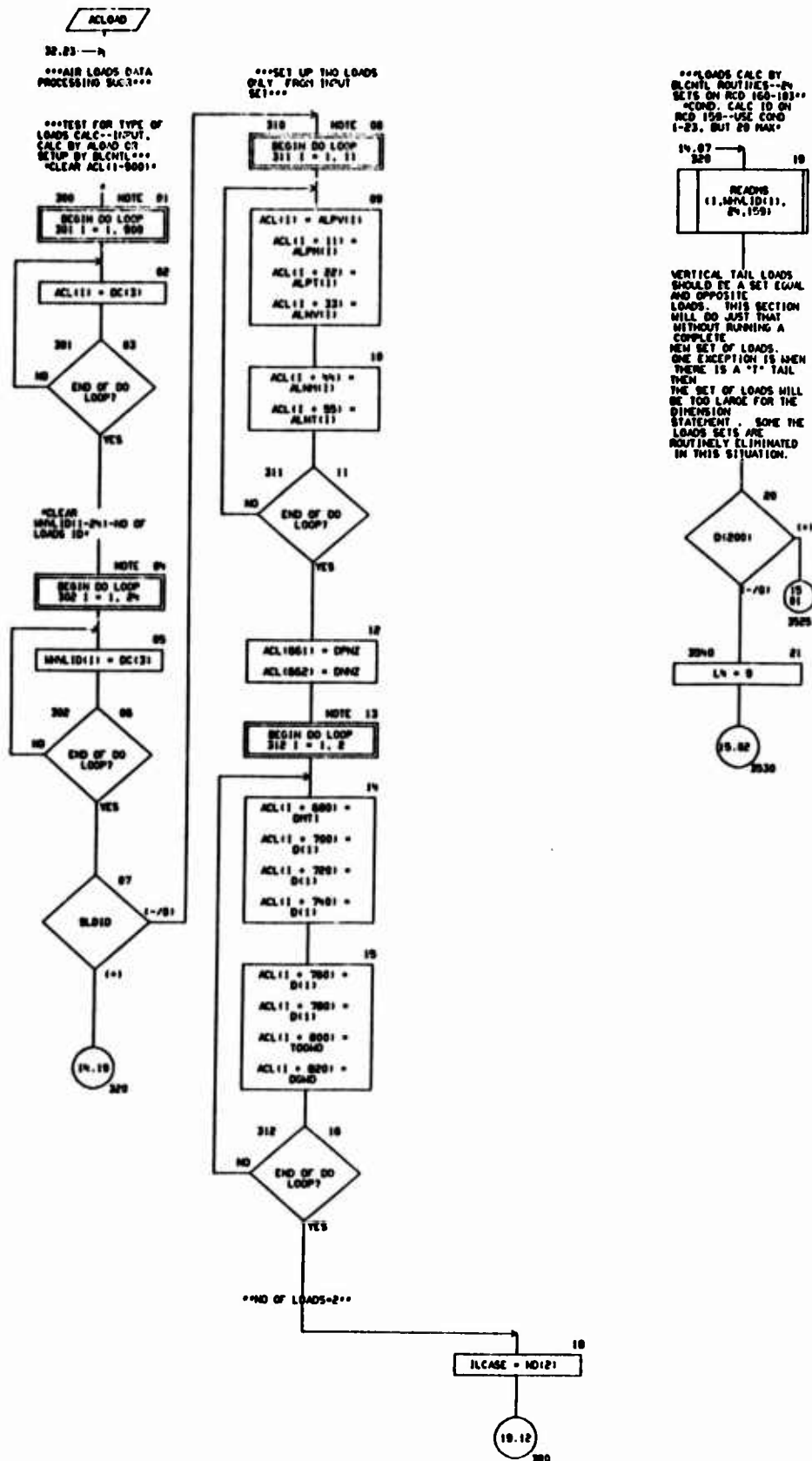
\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACLOAD\*\*\*\*\*

\*\*\*DESIGN LOAD DATA PROCESS - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE ACLOAD



```

graph TD
    Start([START]) --> 01
    01[14.20 -> LN = 11] --> 02
    02[14.21 -> 3550 ILCASE = DC(3)] --> 03
    03[NOTE 03  
BEGIN DO LOOP  
3750 NV = 1.23] --> 04
    04[19.11 -> N = 361] --> 05
    05{VTID} --> 06
    06{3600 D(357)} --> 07
    07[3565 N = 2* - NV] --> 08
    08{3580 INVALID(N)} --> 09
    09[321 ILCASE = ILCASE + NO(1)  
IFL = N + 150] --> 10
    10[READS  
(1,MD(1),200,  
IFL)] --> 11
    11["*TEST FOR TAILS AND  
MOVE LOC DATA TO  
WIND LOC IF TAILS*"] --> 12
    12[CHECK = 0.0  
VERT = 0.0] --> 13
    13 --> 14
    14{12 VTID} --> 15
    15[3211 VERT = 1.0] --> 16
    16[3210 N = 130] --> 17
    17{15 VTID} --> 18
    18[322 N = 63] --> 19
    19[NOTE 17  
BEGIN DO LOOP  
324 I = 1.44] --> 20
    20[10 J = K + 1  
MD(1 + 324) =  
MD(J)] --> 21
    21{24 10 END OF DO LOOP?} --> 22
    22{20 VTID} --> 23
    23{21 D(357)} --> 24
    24 --> 25
    25 --> 26
    26 --> 27
    27 --> 28
    28 --> 29
    29 --> 30
    30 --> 31
    31 --> 32
    32 --> 33
    33 --> 34
    34 --> 35
    35 --> 36
    36 --> 37
    37 --> 38
    38 --> 39
    39 --> 40
    40 --> 41
    41 --> 42
    42 --> 43
    43 --> 44
    44 --> 45
    45 --> 46
    46 --> 47
    47 --> 48
    48 --> 49
    49 --> 50
    50 --> 51
    51 --> 52
    52 --> 53
    53 --> 54
    54 --> 55
    55 --> 56
    56 --> 57
    57 --> 58
    58 --> 59
    59 --> 60
    60 --> 61
    61 --> 62
    62 --> 63
    63 --> 64
    64 --> 65
    65 --> 66
    66 --> 67
    67 --> 68
    68 --> 69
    69 --> 70
    70 --> 71
    71 --> 72
    72 --> 73
    73 --> 74
    74 --> 75
    75 --> 76
    76 --> 77
    77 --> 78
    78 --> 79
    79 --> 80
    80 --> 81
    81 --> 82
    82 --> 83
    83 --> 84
    84 --> 85
    85 --> 86
    86 --> 87
    87 --> 88
    88 --> 89
    89 --> 90
    90 --> 91
    91 --> 92
    92 --> 93
    93 --> 94
    94 --> 95
    95 --> 96
    96 --> 97
    97 --> 98
    98 --> 99
    99 --> 100
    100 --> 101
    101 --> 102
    102 --> 103
    103 --> 104
    104 --> 105
    105 --> 106
    106 --> 107
    107 --> 108
    108 --> 109
    109 --> 110
    110 --> 111
    111 --> 112
    112 --> 113
    113 --> 114
    114 --> 115
    115 --> 116
    116 --> 117
    117 --> 118
    118 --> 119
    119 --> 120
    120 --> 121
    121 --> 122
    122 --> 123
    123 --> 124
    124 --> 125
    125 --> 126
    126 --> 127
    127 --> 128
    128 --> 129
    129 --> 130
    130 --> 131
    131 --> 132
    132 --> 133
    133 --> 134
    134 --> 135
    135 --> 136
    136 --> 137
    137 --> 138
    138 --> 139
    139 --> 140
    140 --> 141
    141 --> 142
    142 --> 143
    143 --> 144
    144 --> 145
    145 --> 146
    146 --> 147
    147 --> 148
    148 --> 149
    149 --> 150
    150 --> 151
    151 --> 152
    152 --> 153
    153 --> 154
    154 --> 155
    155 --> 156
    156 --> 157
    157 --> 158
    158 --> 159
    159 --> 160
    160 --> 161
    161 --> 162
    162 --> 163
    163 --> 164
    164 --> 165
    165 --> 166
    166 --> 167
    167 --> 168
    168 --> 169
    169 --> 170
    170 --> 171
    171 --> 172
    172 --> 173
    173 --> 174
    174 --> 175
    175 --> 176
    176 --> 177
    177 --> 178
    178 --> 179
    179 --> 180
    180 --> 181
    181 --> 182
    182 --> 183
    183 --> 184
    184 --> 185
    185 --> 186
    186 --> 187
    187 --> 188
    188 --> 189
    189 --> 190
    190 --> 191
    191 --> 192
    192 --> 193
    193 --> 194
    194 --> 195
    195 --> 196
    196 --> 197
    197 --> 198
    198 --> 199
    199 --> 200
    200 --> 201
    201 --> 202
    202 --> 203
    203 --> 204
    204 --> 205
    205 --> 206
    206 --> 207
    207 --> 208
    208 --> 209
    209 --> 210
    210 --> 211
    211 --> 212
    212 --> 213
    213 --> 214
    214 --> 215
    215 --> 216
    216 --> 217
    217 --> 218
    218 --> 219
    219 --> 220
    220 --> 221
    221 --> 222
    222 --> 223
    223 --> 224
    224 --> 225
    225 --> 226
    226 --> 227
    227 --> 228
    228 --> 229
    229 --> 230
    230 --> 231
    231 --> 232
    232 --> 233
    233 --> 234
    234 --> 235
    235 --> 236
    236 --> 237
    237 --> 238
    238 --> 239
    239 --> 240
    240 --> 241
    241 --> 242
    242 --> 243
    243 --> 244
    244 --> 245
    245 --> 246
    246 --> 247
    247 --> 248
    248 --> 249
    249 --> 250
    250 --> 251
    251 --> 252
    252 --> 253
    253 --> 254
    254 --> 255
    255 --> 256
    256 --> 257
    257 --> 258
    258 --> 259
    259 --> 260
    260 --> 261
    261 --> 262
    262 --> 263
    263 --> 264
    264 --> 265
    265 --> 266
    266 --> 267
    267 --> 268
    268 --> 269
    269 --> 270
    270 --> 271
    271 --> 272
    272 --> 273
    273 --> 274
    274 --> 275
    275 --> 276
    276 --> 277
    277 --> 278
    278 --> 279
    279 --> 280
    280 --> 281
    281 --> 282
    282 --> 283
   
```



CHART TITLE - SUBJECTIVE ASLOAD

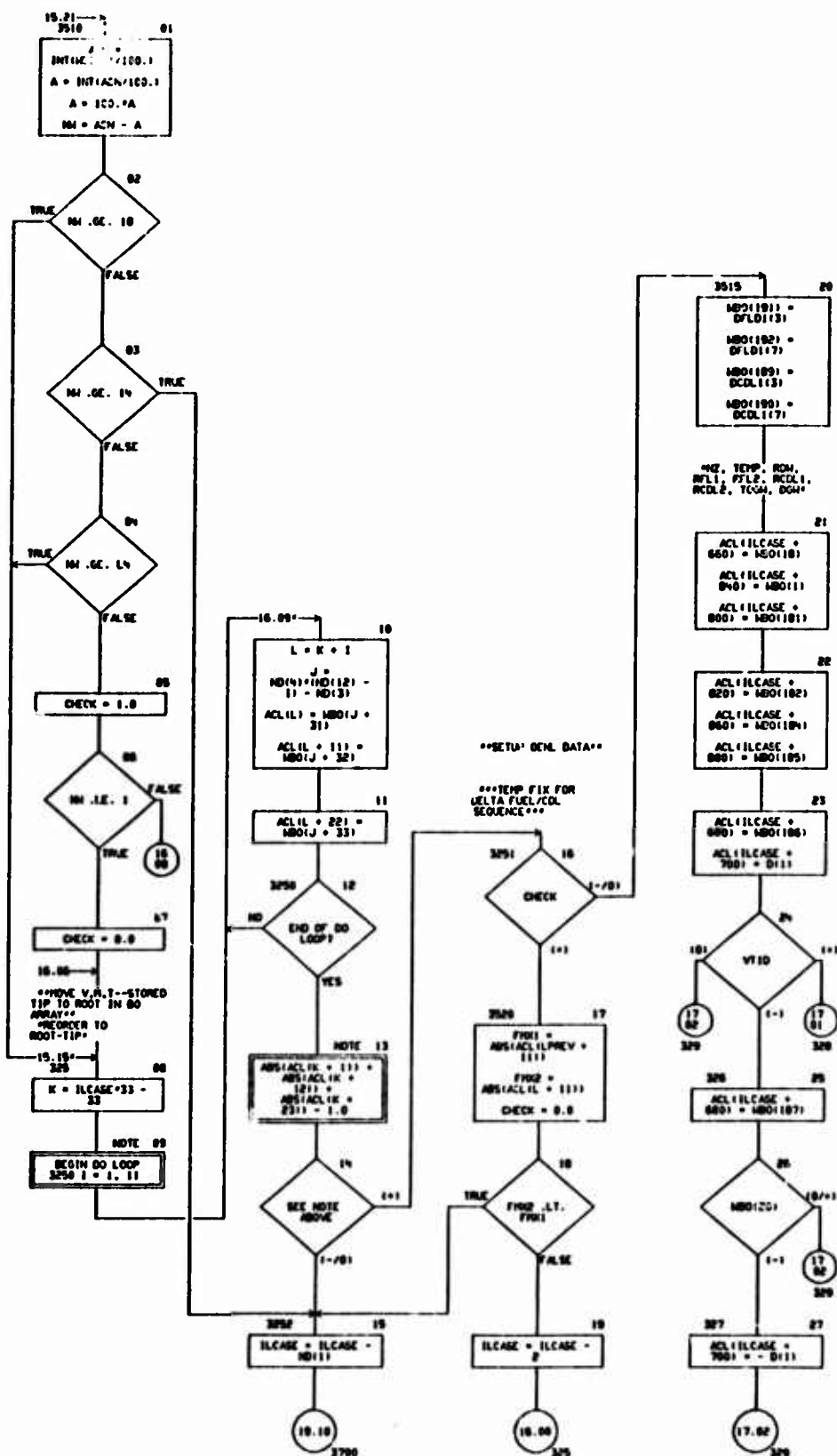


CHART TITLE - SUBROUTINE ACLOAD

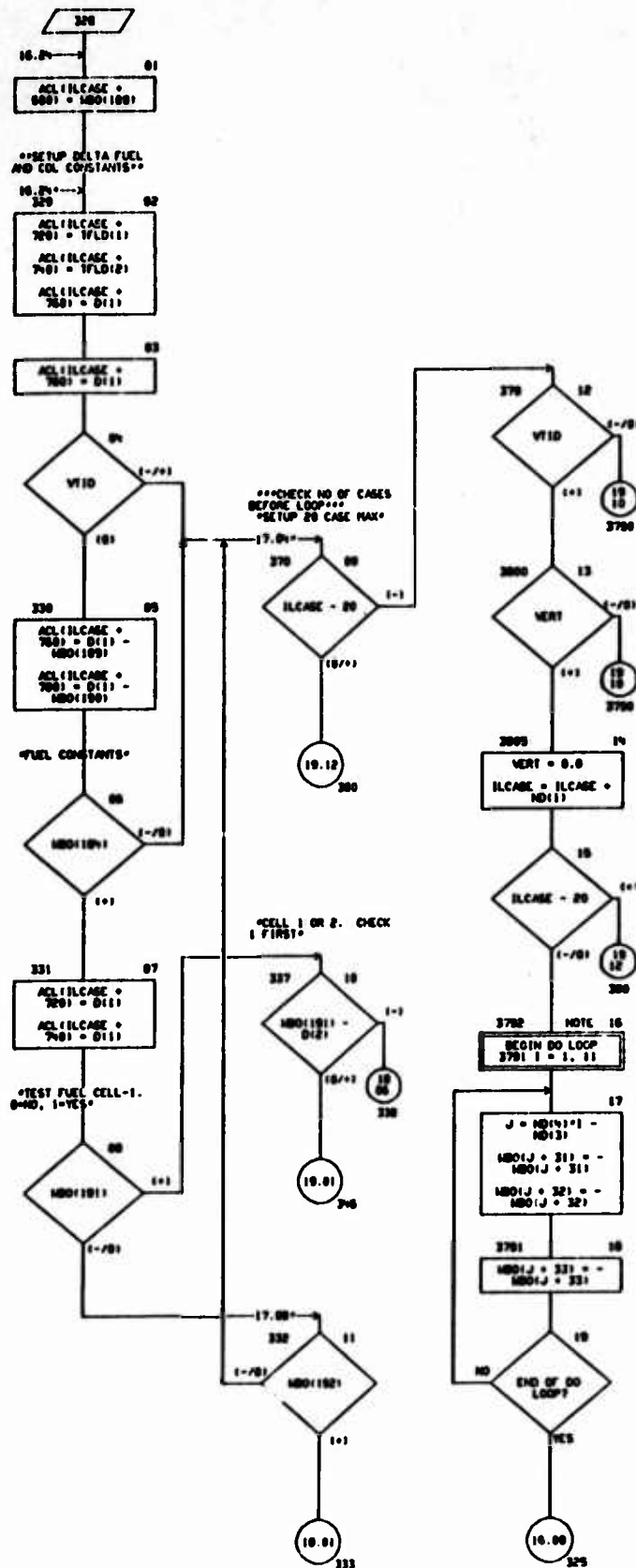
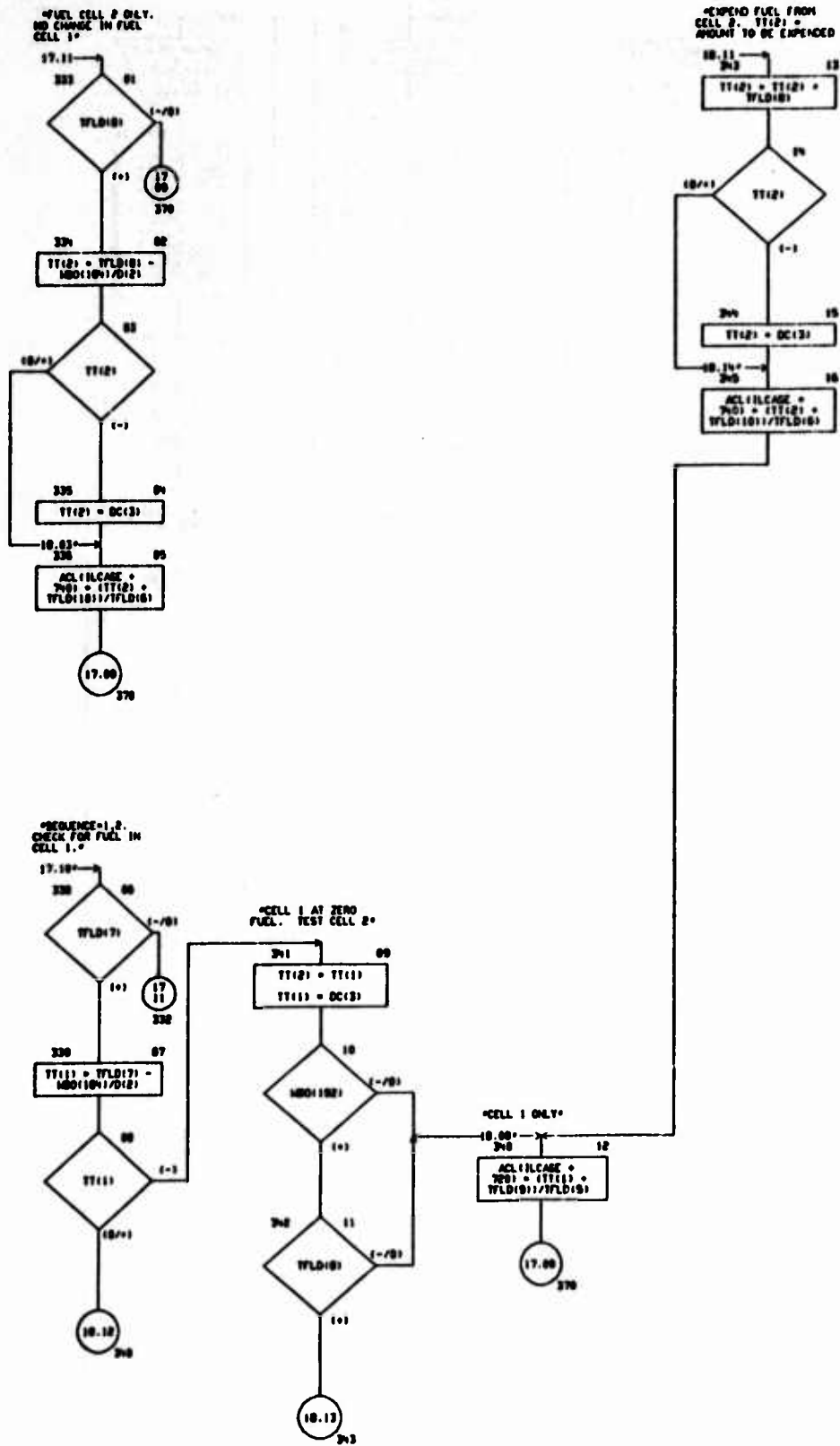


CHART TITLE - SUBROUTINE ACLOAD



```

graph TD
    Start([START]) --> 10
    10 --> 11[LPREV = ILCLAE * 33 - 32]
    11 --> 12{END OF DO LOOP?}
    12 -- NO --> 15[15 04]
    12 -- YES --> 13[***SAVE ACL ARRAY ON RCD 30***]
    13 --> 14[14 10]
    14 --> 15[15 04]
    15 --> 16[16 10]
    16 --> 17[17 10]
    17 --> 18[18 06]
    18 --> 19[19 06]
    19 --> 20[20 06]
    20 --> 21[21 06]
    21 --> 22[22 06]
    22 --> 23[23 06]
    23 --> 24[24 06]
    24 --> 25[25 06]
    25 --> 26[26 06]
    26 --> 27[27 06]
    27 --> 28[28 06]
    28 --> 29[29 06]
    29 --> 30[30 06]
    30 --> 31[31 06]
    31 --> 32[32 06]
    32 --> 33[33 06]
    33 --> 34[34 06]
    34 --> 35[35 06]
    35 --> 36[36 06]
    36 --> 37[37 06]
    37 --> 38[38 06]
    38 --> 39[39 06]
    39 --> 40[40 06]
    40 --> 41[41 06]
    41 --> 42[42 06]
    42 --> 43[43 06]
    43 --> 44[44 06]
    44 --> 45[45 06]
    45 --> 46[46 06]
    46 --> 47[47 06]
    47 --> 48[48 06]
    48 --> 49[49 06]
    49 --> 50[50 06]
    50 --> 51[51 06]
    51 --> 52[52 06]
    52 --> 53[53 06]
    53 --> 54[54 06]
    54 --> 55[55 06]
    55 --> 56[56 06]
    56 --> 57[57 06]
    57 --> 58[58 06]
    58 --> 59[59 06]
    59 --> 60[60 06]
    60 --> 61[61 06]
    61 --> 62[62 06]
    62 --> 63[63 06]
    63 --> 64[64 06]
    64 --> 65[65 06]
    65 --> 66[66 06]
    66 --> 67[67 06]
    67 --> 68[68 06]
    68 --> 69[69 06]
    69 --> 70[70 06]
    70 --> 71[71 06]
    71 --> 72[72 06]
    72 --> 73[73 06]
    73 --> 74[74 06]
    74 --> 75[75 06]
    75 --> 76[76 06]
    76 --> 77[77 06]
    77 --> 78[78 06]
    78 --> 79[79 06]
    79 --> 80[80 06]
    80 --> 81[81 06]
    81 --> 82[82 06]
    82 --> 83[83 06]
    83 --> 84[84 06]
    84 --> 85[85 06]
    85 --> 86[86 06]
    86 --> 87[87 06]
    87 --> 88[88 06]
    88 --> 89[89 06]
    89 --> 90[90 06]
    90 --> 91[91 06]
    91 --> 92[92 06]
    92 --> 93[93 06]
    93 --> 94[94 06]
    94 --> 95[95 06]
    95 --> 96[96 06]
    96 --> 97[97 06]
    97 --> 98[98 06]
    98 --> 99[99 06]
    99 --> 100[100 06]
    100 --> 101[101 06]
    101 --> 102[102 06]
    102 --> 103[103 06]
    103 --> 104[104 06]
    104 --> 105[105 06]
    105 --> 106[106 06]
    106 --> 107[107 06]
    107 --> 108[108 06]
    108 --> 109[109 06]
    109 --> 110[110 06]
    110 --> 111[111 06]
    111 --> 112[112 06]
    112 --> 113[113 06]
    113 --> 114[114 06]
    114 --> 115[115 06]
    115 --> 116[116 06]
    116 --> 117[117 06]
    117 --> 118[118 06]
    118 --> 119[119 06]
    119 --> 120[120 06]
    120 --> 121[121 06]
    121 --> 122[122 06]
    122 --> 123[123 06]
    123 --> 124[124 06]
    124 --> 125[125 06]
    125 --> 126[126 06]
    126 --> 127[127 06]
    127 --> 128[128 06]
    128 --> 129[129 06]
    129 --> 130[130 06]
    130 --> 131[131 06]
    131 --> 132[132 06]
    132 --> 133[133 06]
    133 --> 134[134 06]
    134 --> 135[135 06]
    135 --> 136[136 06]
    136 --> 137[137 06]
    137 --> 138[138 06]
    138 --> 139[139 06]
    139 --> 140[140 06]
    140 --> 141[141 06]
    141 --> 142[142 06]
    142 --> 143[143 06]
    143 --> 144[144 06]
    144 --> 145[145 06]
    145 --> 146[146 06]
    146 --> 147[147 06]
    147 --> 148[148 06]
    148 --> 149[149 06]
    149 --> 150[150 06]
    150 --> 151[151 06]
    151 --> 152[152 06]
    152 --> 153[153 06]
    153 --> 154[154 06]
    154 --> 155[155 06]
    155 --> 156[156 06]
    156 --> 157[157 06]
    157 --> 158[158 06]
    158 --> 159[159 06]
    159 --> 160[160 06]
    160 --> 161[161 06]
    161 --> 162[162 06]
    162 --> 163[163 06]
    163 --> 164[164 06]
    164 --> 165[165 06]
    165 --> 166[166 06]
    166 --> 167[167 06]
    167 --> 168[168 06]
    168 --> 169[169 06]
    169 --> 170[170 06]
    170 --> 171[171 06]
    171 --> 172[172 06]
    172 --> 173[173 06]
    173 --> 174[174 06]
    174 --> 175[175 06]
    175 --> 176[176 06]
    176 --> 177[177 06]
    177 --> 178[178 06]
    178 --> 179[179 06]
    179 --> 180[180 06]
    180 --> 181[181 06]
    181 --> 182[182 06]
    182 --> 183[183 06]
    183 --> 184[184 06]
    184 --> 185[185 06]
    185 --> 186[186 06]
    186 --> 187[187 06]
    187 --> 188[188 06]
    188 --> 189[189 06]
    189 --> 190[190 06]
    190 --> 191[191 06]
    191 --> 192[192 06]
    192 --> 193[193 06]
    193 --> 194[194 06]
    194 --> 195[195 06]
    195 --> 196[196 06]
    196 --> 197[197 06]
    197 --> 198[198 06]
    198 --> 199[199 06]
    199 --> 200[200 06]
    200 --> 201[201 06]
    201 --> 202[202 06]
    202 --> 203[203 06]
    203 --> 204[204 06]
    204 --> 205[205 06]
    205 --> 206[206
```

CHART TITLE - NON-PROCEEDURAL STATEMENTS

```

COMMON T(200),D(200),CD(200),ND(100),TW(300),CT(2040)
COMMON /IPRINT/ IP(60)
DIMENSION DC(100),TSEC(300),TODH(11),TT(24),
PHZ(11),VPHZ(11),VHZ(11),ZHZ(11),
ALPV(11),ALPH(11),ALNH(11),ALNM(11),
CAL(12), TR(17),T0(300),TAC(10),CCLO(9),SIND(6),COS(6),
PHZT(11),ZINT(11),ALPT(11),ALNT(11),
WKL(12),HBO(200),ACL(100),TEMP(20),
WLD(10),
DFLD(10),DCOL(10),
VSTR(11)
EQUIVALENCE (DC(1),D(140)), (TSEC(1),CD(150)),(TODH(1),T(430)),
(TT(1),T(1317)),(VSTR(1),TSEC(166)),(DGH(1),D(105)),
(VPHZ,D(85)),(ZHZ,D(86)),(DALV,D(255)),(DALCP,D(256)),
(DCPD,D(257)),(DCPHL,D(233)),(DEXPV,D(232)),
(ALOS,D(235)),(ALOR,D(236)),(ALOR,D(237)),(ALGB,D(238)),
(PGH(1),D(260)),(VPHZ(1),D(607)),(VHZ(1),D(630)),(ZHZ(1),D(709)),
(TAC(1),T(122)),(CCLO(1),T(131)),(SIND(1),T(140)),
(ALPV(1),T(154)),(ALPH(1),T(55)),(ALAN(1),T(576)),(ALNH(1),T(507)),
(DGH(1),D(332))
EQUIVALENCE (BOZ,T(12)),(BS1,T(15)),(PCP,T(95)),(CR,T(152)),
(CTIP,T(37)),(TAVAC,T(38)),(HARE,A,D(240)),(DPCEA,D(127)),
(CAL(1),D(220)), (TR(1),T(1300)),(T0(1),T(100)),
(VPHZ(1),D(1010)),(ZHZ(1),D(1030)),
(ALPT(1),T(877)),(ALNT(1),T(880)),
(COSE(1),T(146)),(COTEA,T(152)),(ALREF,D(239)),
(NPAGE,ND(95)),(NSEC,ND(60)),
(IN,ND(31)),(IK,ND(30)),(I,ND(29)),(ILID,ND(94)),(INCASE,ND(60))
EQUIVALENCE (HMLID(1),CD(532)),(HBO(1),CD(556)),
(WLD(1),D(205)),(TEMP(1),CT(2003)),
(DPHZ,T(20)),(DGHZ,T(21)),(DGH(1),D(105)),(TODH,D(100)),
(DHNT,D(250)),(VTID,D(200)),
(WLD(1),T(631)),(TT(1),T(1317)),
(DFLD(1),D(159)),(DCOL(1),D(167)),
(ACL(1),CT(1)),(ILCASE,ND(4))
303 FORMAT (10H) CASE 14,725,96H---BASIC LIMIT AIRLOAD DATA---ADV C
OPPOSITE ANALYSIS---,T100,WPAGE,14,7710CHD COND TOGH
BOH DEL-FL DEL-AL HZ TEMP RDH RFL RFL
2 RCOL1 RCOL2 )
304 FORMAT (F8.1,F11.1,F10.1,F8.3,F8.1,F8.4)
307 FORMAT (5H) ---DESIGN LOADS SUMMARY---ACL ARRAY---IP 20---,
APB ACL )
308 FORMAT (1H 14,F11.1,F13.1,F12.1,F11.1,F13.1,F12.1)

```

08/19/74

AUTOFLOW CHART 1-1 - SHEEP WING NO EMPLOYAGE MODULE - PAGE 21

CHART TITLE - INTRODUCTORY CONTENTS

.....

\*\*\*\*\*SUBROUTINE TEMPC\*\*\*\*\*

\*\*\*MATERIAL PROPERTIES EVAL FOR ADV. COMP. MATERIALS\*\*\*

.....

.....

```

graph TD
    Start([START]) --> Temp[TEMP]
    Temp --> Note13[NOTE 13]
    Note13 --> Continue1[CONTINUE]
    Continue1 --> Interp[INTERPOLATE TO FIND PROPERTIES]
    Interp --> Note14[NOTE 14]
    Note14 --> CalcML[ML = INT(TEMP/LCASE) / 100.0  
F = TEMP/LCASE / 100.0 - FLOATING  
NL = NL + 1  
MU = NL + 1]
    CalcML --> Note15[NOTE 15]
    Note15 --> BeginLoop1[BEGIN DO LOOP  
I = 1, 3]
    BeginLoop1 --> Note16[NOTE 16]
    Note16 --> Prop1[PROPI = EMP(I) * TCIN(I) + F * (TCIN(I) - TCIN(I) / 100.0)]
    Prop1 --> Note17[NOTE 17]
    Note17 --> EndLoop1{END OF DO LOOP?}
    EndLoop1 -- NO --> Note18[NOTE 18]
    EndLoop1 -- YES --> Note18
    Note18 --> Continue2[CONTINUE]
    Continue2 --> Note19[NOTE 19]
    Note19 --> CalcLC[CLCASE = PROPI]
    CalcLC --> Note20[NOTE 20]
    Note20 --> CalcProp[DO = 1, - PROPI  
H = PROPI * H * PROPI]
    CalcProp --> Note21[NOTE 21]
    Note21 --> CalcEndLC[END1, LCASE = PROPI / H  
END2, LCASE = PROPI / H  
END3, LCASE = PROPI * END2, LCASE]
    CalcEndLC --> Note22[NOTE 22]
    Note22 --> CalcEndProp[END1, LCASE = .25 * (END1, LCASE) + END2, LCASE + 2 * (END3, LCASE) + 2 * PROPI]
    CalcEndProp --> Note23[NOTE 23]
    Note23 --> EndMain([END])

    Temp --> Note1[NOTE 1]
    Note1 --> CompMat[COMPOSITE MATL LAMINA PROPERTIES]
    CompMat --> Subroutine[SUBROUTINE TO CALCULATE LAMINA PROPERTIES AND ALLOWABLES]
    Subroutine --> Note2[NOTE 2]
    Note2 --> Emp1{EMP(I) > .01, 0.0}
    Emp1 -- FALSE --> Note3[NOTE 3]
    Note3 --> Emp2[EMP(I) = - EMP(I)]
    Emp2 --> Note4[NOTE 4]
    Note4 --> Emp3{EMP(I)}
    Emp3 --> Note5[NOTE 5]
    Note5 --> WriteDev1[WRITE TO DEV 6 VIA FORMAT 263 FROM THE LIST]
    WriteDev1 --> Note6[NOTE 6]
    Note6 --> ListLC[LIST = LCASE]
    ListLC --> Note7[NOTE 7]
    Note7 --> WriteDev2[WRITE TO DEV 6 VIA FORMAT 263]
    WriteDev2 --> Note8[NOTE 8]
    Note8 --> Continue3[CONTINUE]
    Continue3 --> Note9[NOTE 9]
    Note9 --> BeginLoop2[BEGIN DO LOOP  
J = 1, 3]
    BeginLoop2 --> Note10[NOTE 10]
    Note10 --> TempLC{TEMP/LCASE < .01, 10.0}
    TempLC -- TRUE --> Note11[NOTE 11]
    Note11 --> Interp
    TempLC -- FALSE --> Note12[NOTE 12]
    Note12 --> IfTemp[IF TEMP = DEGREES, PROPERTIES ARE THOSE OF ROOM TEMPERATURE]
    IfTemp --> Note13
    Note12 --> Note14
    Note12 --> Note15
    Note12 --> Note16
    Note12 --> Note17
    Note12 --> Note18
    Note12 --> Note19
    Note12 --> Note20
    Note12 --> Note21
    Note12 --> Note22
    Note12 --> Note23
    Note12 --> EndMain

```

CHART TITLE - SUBROUTINE TEMP

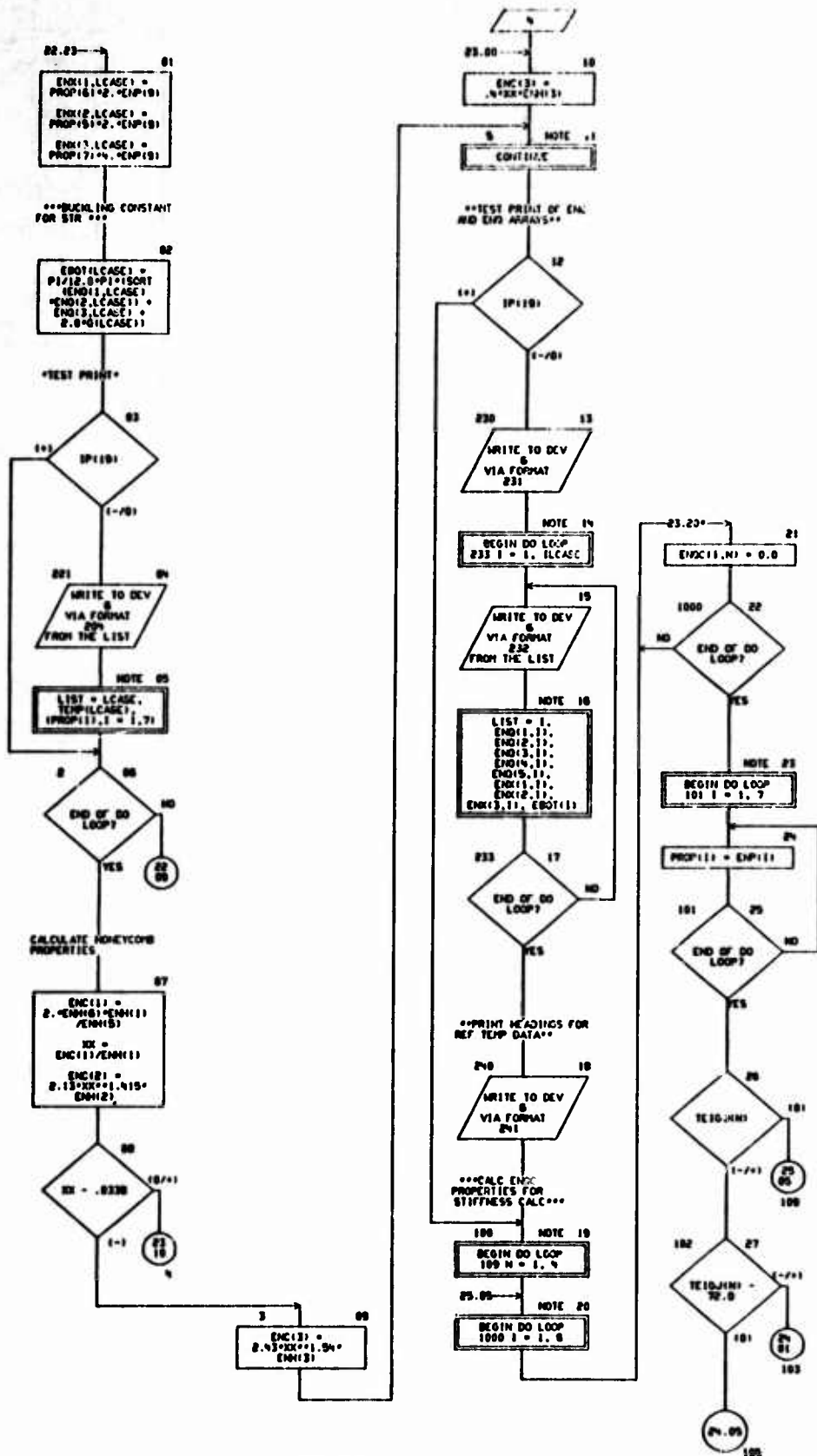
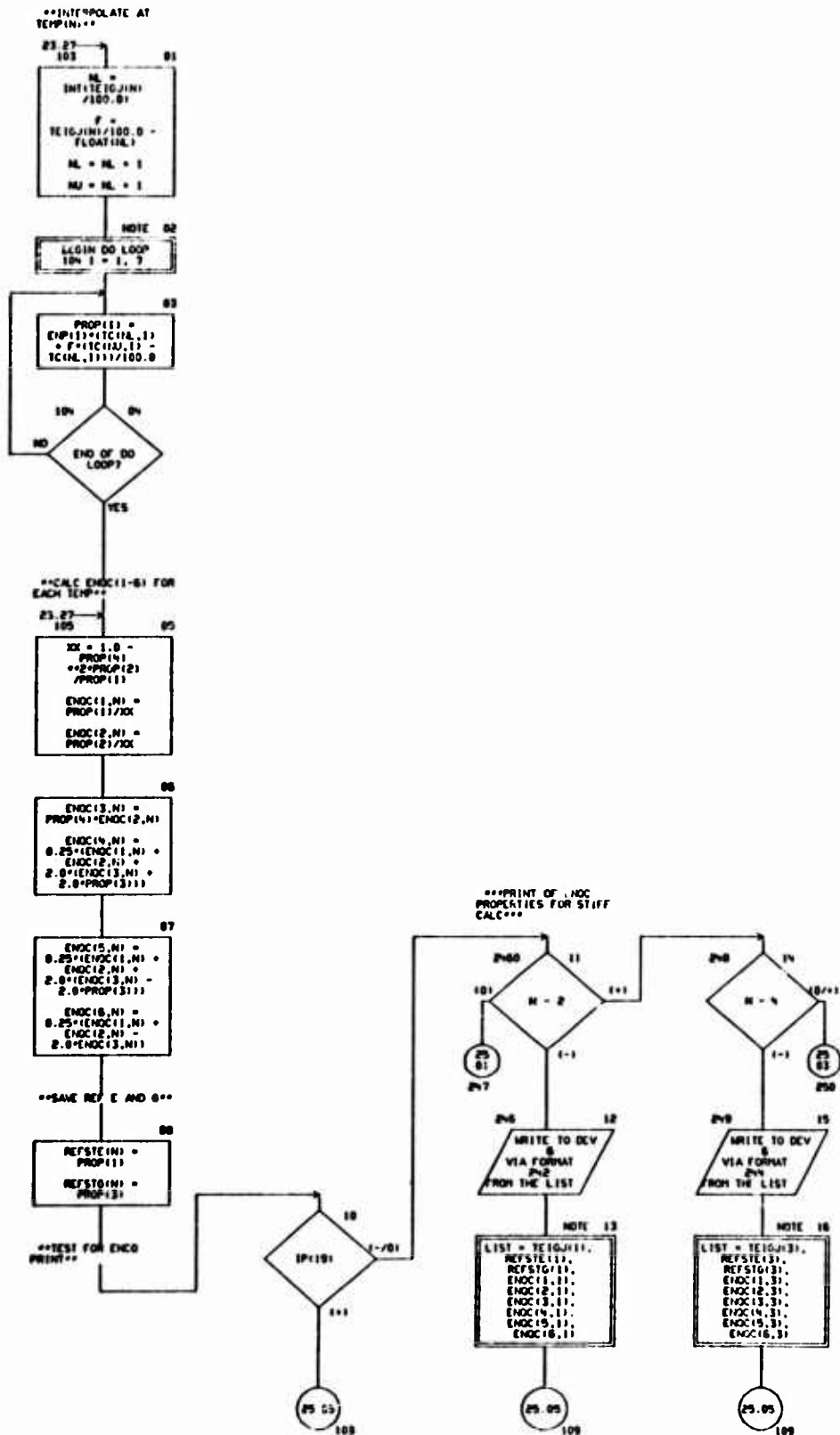




CHART TITLE - SUBROUTINE TEMP



```

graph TD
    P27[/P27/] --> P28[01]
    P28 --> P29[/WRITE TO DEV  
VIA FORMAT  
FROM THE LIST./]
    P29 --> P30[NOTE 02]
    P30 --> P31[/LIST = TEIGU(2),  
REFSIG(2),  
ENGC16,P1,  
ENGC12,P1,  
ENGC12,P1,  
ENGC14,P1,  
ENGC16,P1,  
ENGC16,P1/]
    P31 --> P32((P25.00))

```

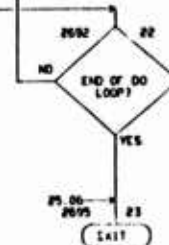
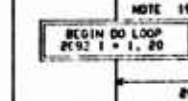
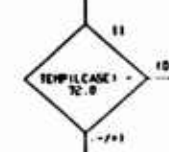
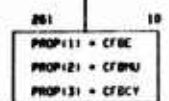
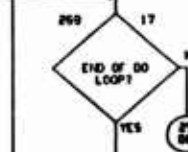
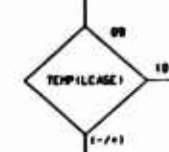
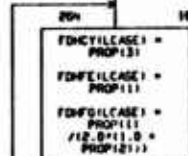
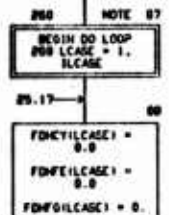
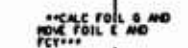
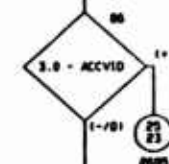
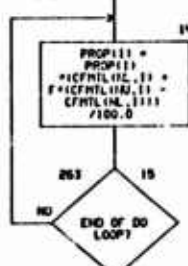
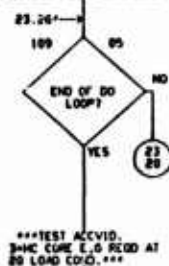


CHART TITLE - NON-PROCEEDURAL STATEMENTS

```

COMMON T(160)
COMMON /IPRINT/ IP(80)
DIMENSION D(2000),CD(2000),ND(100),TH(900),CT(2040),TM(1400),
ENH(6),EMP(8),
PROP(7),TEP(120),TC(5,7),G(20),
ENDC(6,4),TEIG(14),REFSTC(4),REFSTG(4),
CFHTL(5,3),FDHCY(20),FDHFE(20),FDHFG(20),
EBOT(20),
ENC(3),END(5,20),ENK(3,20)
EQUIVALENCE (D(1),T(2001)),(CD(1),T(4121)),(ND(1),T(6121)),
(TM(1),T(6221)),(CT(1),T(721)),(TH(1),CD(1101)),
(EMP(1),D(1155)),(ENH(1),D(1164)),(TC(1,1),D(1170)),
(TEMP(1),CT(2001)),(PROP(1),T(1300)),
(ENK(1,1),TH(601)),(ENK(1,1),TH(701)),
(ENC(1),CT(2043)),(G(1),CT(2023)),
(ENOC(1,1),TH(701)),(TEIG(1),TH(703)),
(REFSTC(1),TH(811)),(REFSTG(1),TH(815)),
(INCASE,ND(60)),
(ILCASE,ND(41)),(ND(1),T(6121))
EQUIVALENCE (CFHTL(1,1),D(1500)),(CFHCU,D(1595)),(CFBCY,D(1565)),
(CFBC,ENH(21)),(CFBG,ENH(31)),
(ACCV(1),D(431)),
(EBOT(1),TH(810)),(PI,D(1151)),
(FDHCY(1),TH(841)),(FDHFE(1),TH(861)),(FDHFG(1),TH(881))
202 FORMAT (10H1 CASE,14,62H ---TORQUE-BOX MATERIAL DATA--AD
V. COMPOSITE DESIGN---,6X,20H** TEMP - IP(18) **)
203 FORMAT (80H0 LOAD ID TEMP. EL ET OXY
MARY FTU FCU FSU )
204 FORMAT (7X,12,1X,F0.1,F12.1,2F11.1,F7.4,2F10.1,F9.1)
231 FORMAT (110H0 LOAD ID ENK(1) ENK(2) ENK(3) ENK(4)
ENK(5) ENK(1) ENK(2) ENK(3) E(BOT) )
232 FORMAT (7X,12,1X,F12.1,F10.1,F10.1,2F11.1,1X,3F10.1,F12.1)
241 FORMAT (62H0 ---ENDC PROPERTIES FOR STIFFNESS CALCULATI
ONS---//110H ITEM TEMP. EL OXY ENOC(
1) ENOC(2) ENOC(3) ENOC(4) ENOC(5) ENOC(6) )
242 FORMAT (12H ST. REF. ,F7.1,3F12.1,F11.1,F10.1,3F11.1)
243 FORMAT (12H FLUT. REF.,F7.1,3F12.1,F11.1,F10.1,3F11.1)
244 FORMAT (12H FLUT/OPTH.,F7.1,3F12.1,F11.1,F10.1,3F11.1)
245 FORMAT (12H FLEX/LOADS,F7.1,3F12.1,F11.1,F10.1,3F11.1)
2600 FORMAT (30H0 ***HONEYCOMB CORE PROPERTIES*** )
2601 FORMAT (4X,12,3C16.0)

```

06/14/74

AUTOFLOW CHART 101 - 5.000 - WINDS AND EMERGENCY PROCEED - PAGE 27

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ALOAD\*\*\*\*\*

\*\*\*NET ULTIMATE LOADS EVALUATION - ACFT. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

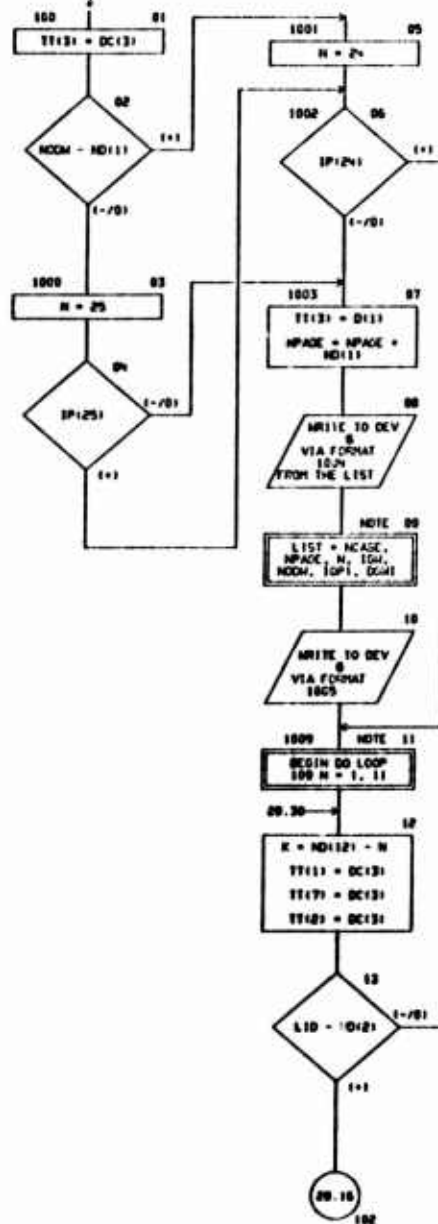
CHART TITLE - SUBROUTINE ALCAD

**ALCAD**  
35.07--N  
\*\*\*\*\*COMPOSITE  
STRUCTURE ANALYSIS  
VERSION OF SUBR  
VCL\*\*\*\*\*  
\*\*\*\*\*DESIGNED TO  
EVALUATE UP TO 20  
LOAD CASES\*\*\*\*\*

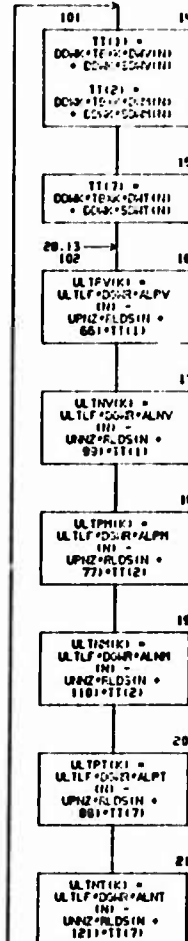
\*\*\*SET ULT DESIGN  
LOADS CALC SUBR\*\*\*

\*\*\*LID = TYPE OF  
LOAD SET ID\*\*\*  
\*1 = GROSS, CALC\*  
\*2 = GROSS, INPUT\*  
\*3 = INPUT, NET\*

\*\*\*CHECK BY PRINT\*\*\*  
\*IP 25 FOR NOCM = 1  
ONLY\*  
\*IP 24 FOR ALL NOCM\*  
\*SET TT(1) TO 0 FOR  
NO PRINT, 1 FOR  
PRINT\*



\*\*\*PRINT ON TT(1)=1.0\*  
\*\*\*SETUP HERE11A  
DATA\*\*



FS/RS LOADS

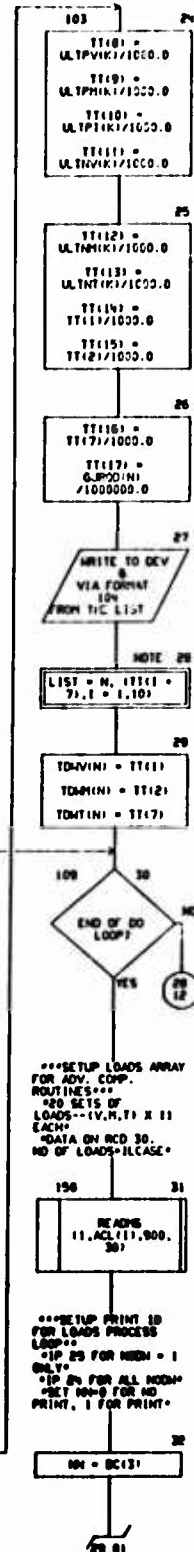
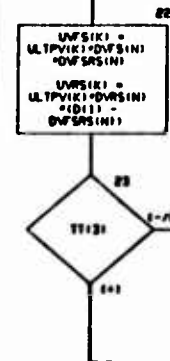


CHART TITLE - SUBROUTINE ALOAD

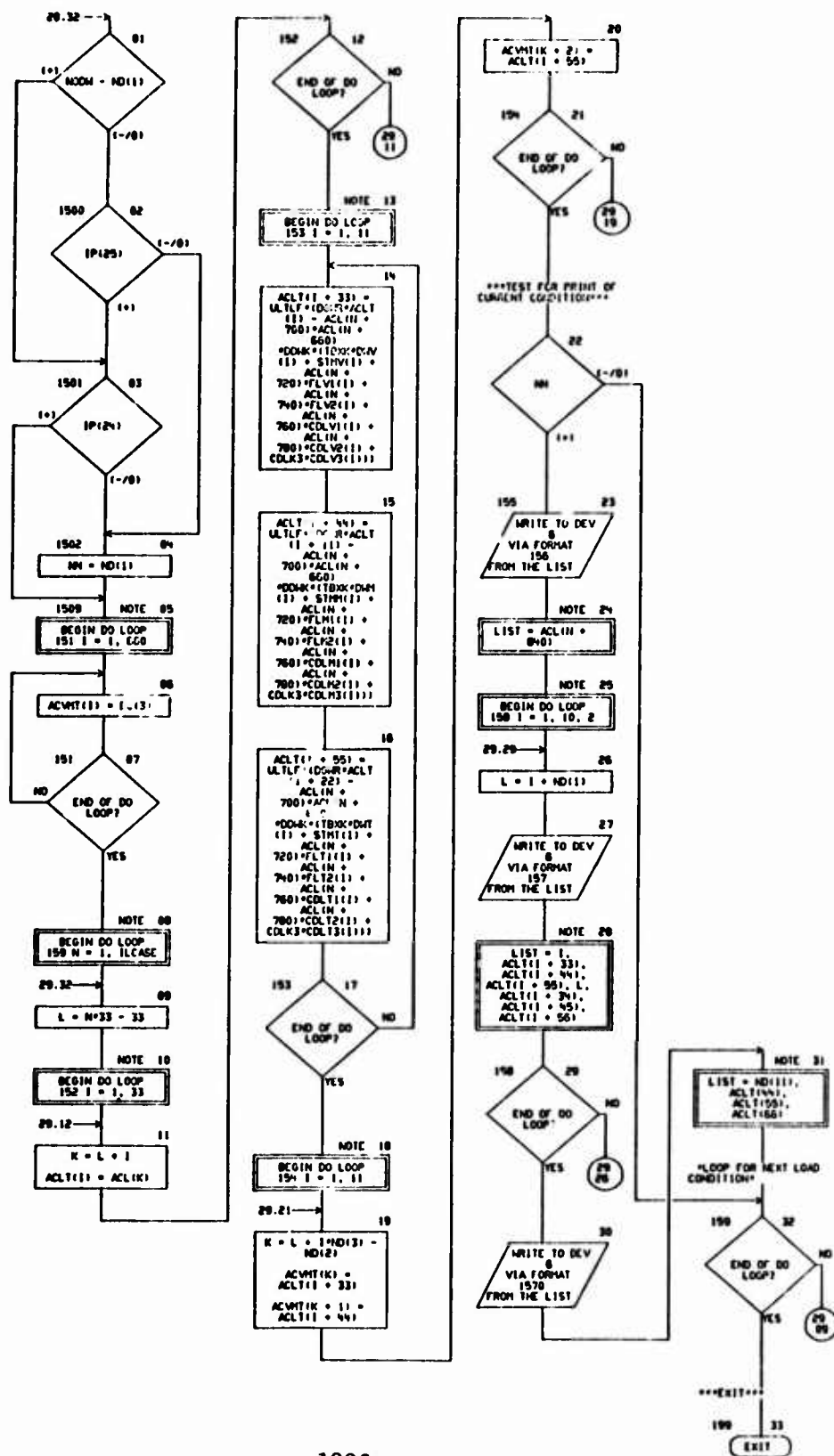


CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(200),D(200),CD(200),ND(100),TM(300),CT(2040)
COMMON /IPRINT/ IP(100)
DIMENSION DC(100),TT(24),TSEC(300),
ALPV(11),ALPH(11),ALPT(11),ALNV(11),ALNM(11),ALNT(11),
TDM(11),ULTP(11),ULTN(11),
DM(11),DM(11),DM(11),DM(11),DM(11),DM(11),DM(11),
UMS(11),UMS(11),DM(11),DM(11),
TDM(11),TDM(11),TDM(11),
BJRD(11),DMRS(11),
RLDS(132),
ULTPV(11),ULTPH(11),ULTNV(11),ULTNH(11)
DIMENSION ACL(50),ACVHT(60),ACLT(66),
STHV(11),STPH(11),STHT(11),
FLV(11),FLM(11),FLT(11),FLV(11),FLM(11),FLT(11),
COLV(11),COLM(11),COLT(11),COLV(11),COLM(11),COLT(11),
COLV(11),COLM(11),COLT(11)
EQUIVALENCE (DC(11),D(140)),(UPH2,D(205)),(UW2,D(206)),
(ULTLF,D(122)),(TT(1),T(137)),(TSEC(1),CD(150)),
(ALPV(1),T(594)),(ALPH(1),T(565)),(ALPT(1),T(877)),(ALNV(1),T(576)),
(ALNM(1),T(587)),(ALNT(1),T(888)),(TDM(1),T(430)),
(DM(1),T(598)),(DM(1),T(609)),(DM(1),T(620)),
(ULTPH(1),TSEC(1)),(ULTPV(1),TSEC(12)),(ULTNV(1),TSEC(111)),(ULTNH(1),
TSEC(122)),(BJRD(1),T(668)),(DM(1),T(29)),
(DM(1),TDM(2)),(DM(1),TDM(3)),(DM(1),TDM(4)),
(INCASE,ND(60)),(INCD4,ND(56)),(IN,ND(161)),(IOP1,ND(182)),
(INPAGE,ND(85)),(ILID,ND(94)),(IN,ND(130)),(IK,ND(131))
EQUIVALENCE (UMS(1),TSEC(23)),(UMS(1),TSEC(34)),
(ULTP(1),TSEC(144)),(ULTN(1),TSEC(155)),
(DM(1),T(844)),(DM(1),T(855)),(DM(1),T(866)),
(RLDS(1),CD(400)),
(TDM(1),CD(1968)),(TDM(1),CD(1878)),(TDM(1),CD(1998)),
(DMRS(1),CD(1824)),(DMRS(1),D(1842)),(DMRS(1),D(853))
EQUIVALENCE (ACL(1),CT(1)),(ACVHT(1),CT(132)),(ACLT(1),CD(532)),
(STHV(1),T(81)),(STPH(1),T(822)),(STHT(1),T(833)),
(FLV(1),T(445)),(FLM(1),T(456)),(FLT(1),T(467)),
(FLV(1),T(478)),(FLM(1),T(488)),(FLT(1),T(499)),
(COLV(1),T(309)),(COLM(1),T(320)),(COLT(1),T(331)),
(COLV(1),T(342)),(COLM(1),T(353)),(COLT(1),T(364)),
(COLV(1),T(375)),(COLM(1),T(386)),(COLT(1),T(397)),
(TDM(1),T(430)),(COLM3,TDM(15)),
(ILCASE,ND(41))
1004 FORMAT (10H1 CASE14,10X,4H---DESIGN LOADS/1000 AND RECD GJ/I
,800,800--- ,20X,4HPAGE14, /10H0 IP=12,6H 10H=11,7H N
ODM=11,7H IOP1=11,6H DDM=FB.1)
1005 FORMAT (10BHD STA +V(ULT) +M(ULT) +T(ULT) -V(ULT) -M(ULT)
-T(ULT) VDH(10) DMH(10) TDM(10) GJ(REQD) )
104 FORMAT (1H 3X,12,F10.3,F11.2,F10.2,F9.3,F10.2,F10.2,F9.3,F10.2,F10
.2,F12.3)
106 FORMAT (14H0 COND. NO.FB.1, /80H0 STA V(ULT) M(ULT)
T(ULT) )
107 FORMAT (4X,13,F11.1,F13.1,F12.1,4X,13,F11.1,F13.1,F12.1)
1070 FORMAT (4X,13,F11.1,F13.1,F12.1)

```

08/14/74

AUTOFLOW CHART SET - SHEEP NINO AND EMERGENCY MODULE - PAGE 31

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACPRG\*\*\*\*\*

\*\*\*TOTAL SURFACE HEIGHT SYNTHESIS CONTROL - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*



05/14/74

AUTOCORR CORP SET - 5447 KING AND EVIDENCE HOUSE - PAGE 32

CHART TITLE - SUEPATIVE APPRO

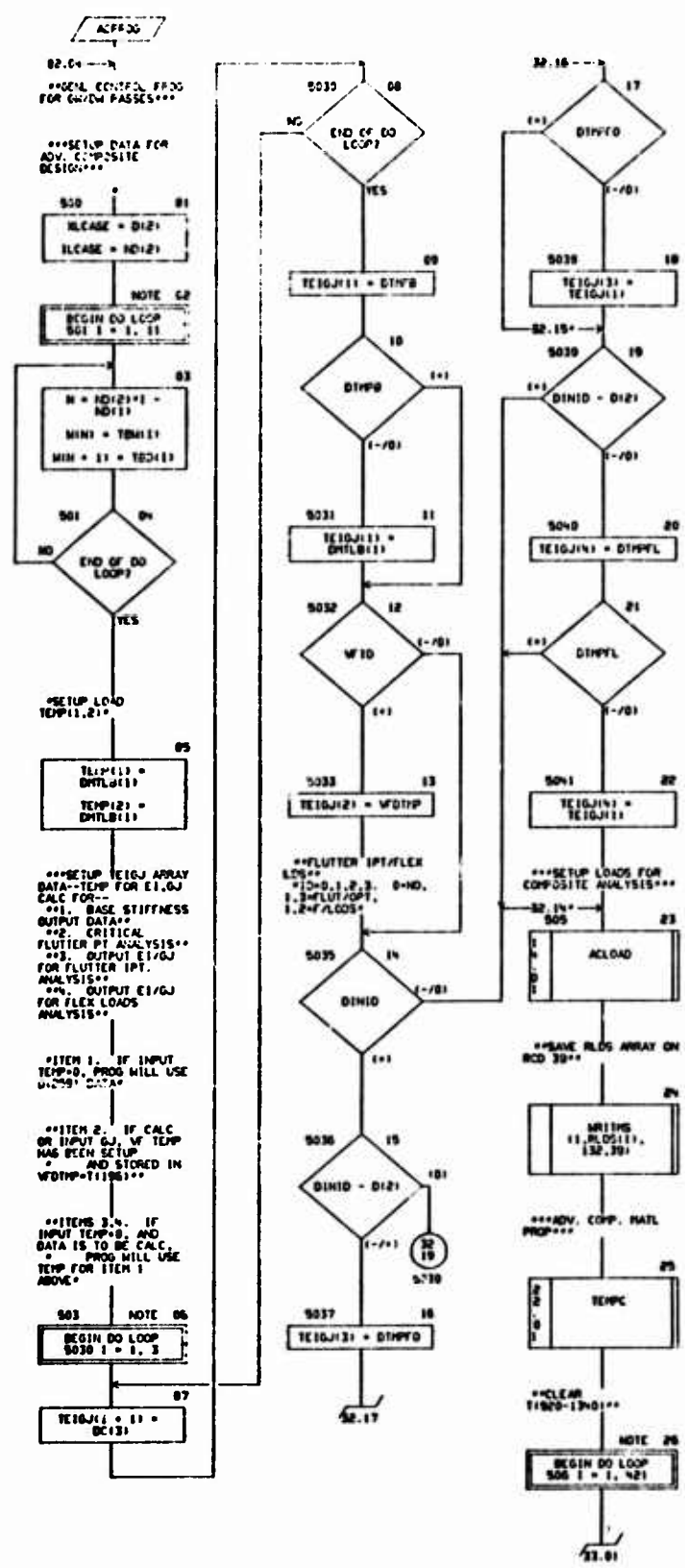


CHART TITLE - SUBROUTINE ALFROG

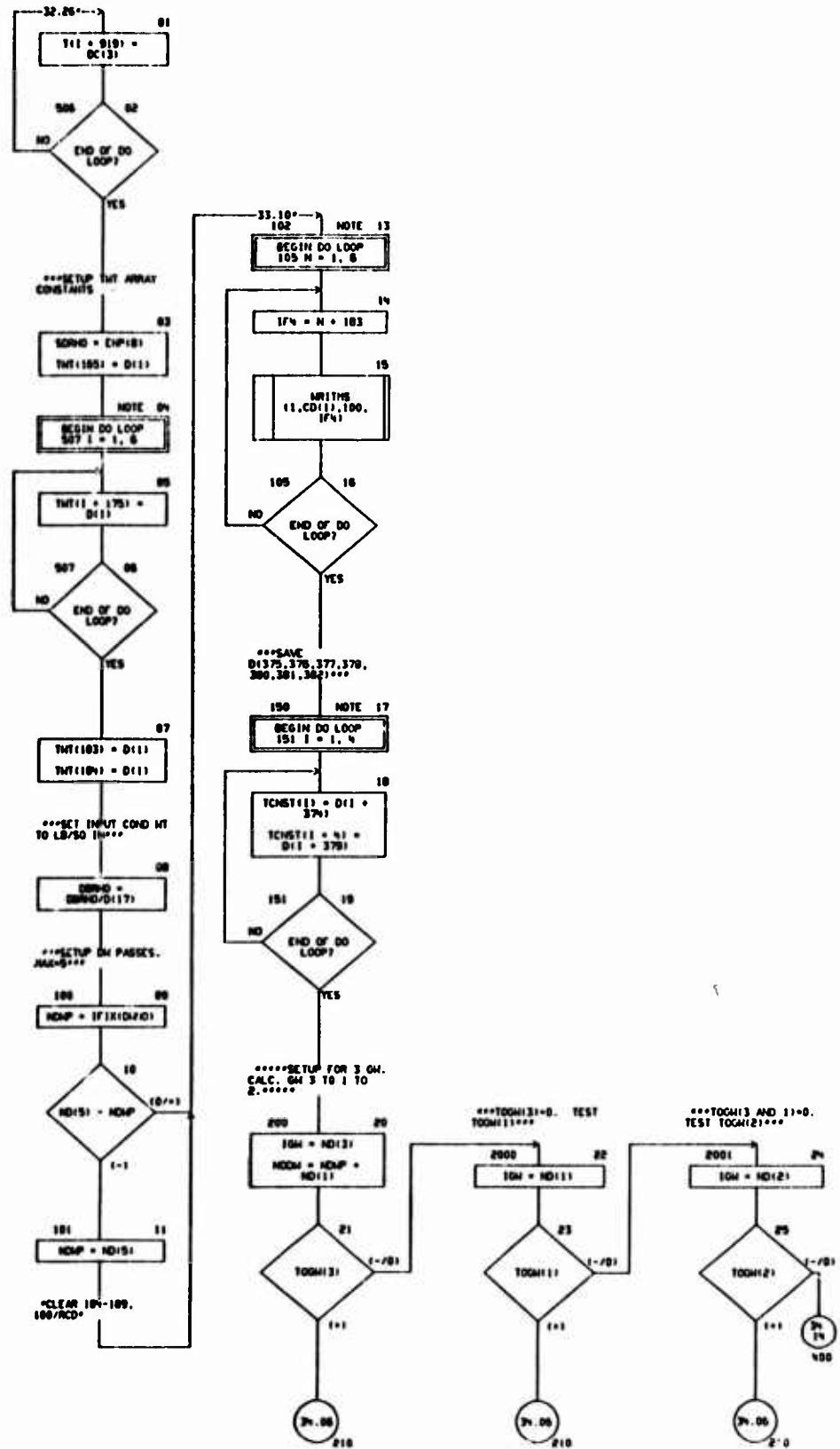
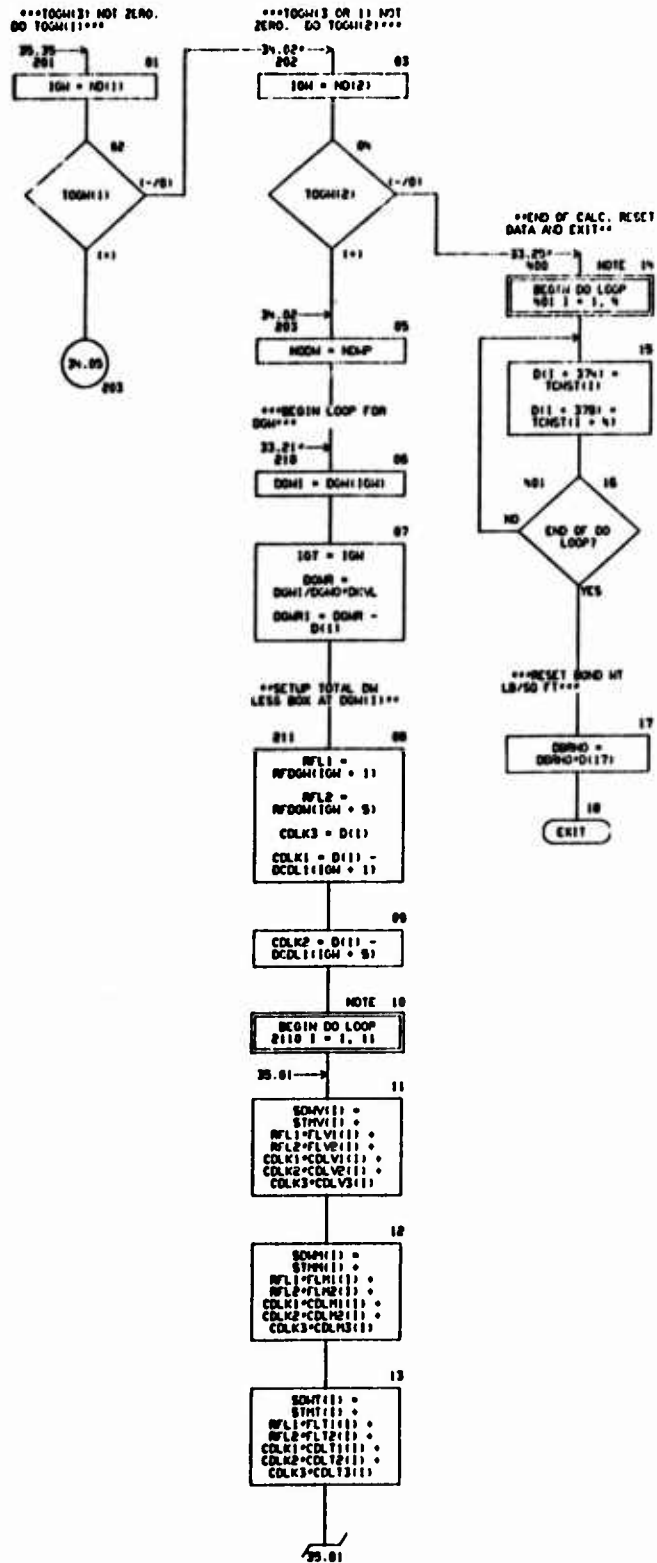


CHART TITLE - SUBROUTINE ACTROS



The flowchart illustrates the design process for a box girder, organized into several main sections:

- Initial Setup (Lines 1-11):**
  - Line 1: Decision diamond for "END OF DO LOOP?". If YES, proceed to Line 11 (34.11). If NO, proceed to Line 12.
  - Line 12: "READS (1, RDS(1), 132, 70)".
  - Line 13: "DATA".
  - Line 14: "\*\*\*\* TEST FOR CONST. BY GW \*\*\*\*".
  - Line 15: Decision diamond for "DCNST(1)". If YES, proceed to Line 16. If NO, proceed to Line 17.
- Design Data Calculation (Lines 16-20):**
  - Line 16: "D(175) = DCNST(1GW + 1)".
  - Line 17: "D(176) = DCNST(1GW + 4)".
  - Line 18: "D(177) = DCNST(1GW + 7)".
  - Line 19: "D(178) = DCNST(1GW + 10)".
  - Line 20: "D(180) = DCNST(1GW + 13)".
  - Line 21: "D(181) = DCNST(1GW + 16)".
  - Line 22: "D(182) = DCNST(1GW + 19)".
- Load and Design Data (Lines 23-25):**
  - Line 23: "\*\*\*\*GET LOADS AND DESIGN DATA\*\*\*\*".
  - Line 24: "AVLOAD".
  - Line 25: "CLEAR CT 1-1320".
- Iterative Loop (Lines 26-34):**
  - Line 26: "BEGIN DO LOOP 231 1 = 1, 1320".
  - Line 27: "CT(1) = DC(1)".
  - Line 28: "\*\*\*\*START DESIGN/SYNTHESIS\*\*\*\*".
  - Line 29: "AUFPT".
  - Line 30: "\*\*\*\*SAVE ASSURED MULTIPLY AND DIV DATA FOR ITERATION\*\*\*\*".
  - Line 31: "BEGIN DO LOOP 251 1 = 1, 11".
  - Line 32: "N = ND(12) - 1".
  - Line 33: "DM(1) = DM(1)".
  - Line 34: "DM(1) = ULTPH(1)".
  - Line 35: Decision diamond for "END OF DO LOOP?". If YES, proceed to Line 36. If NO, proceed to Line 37.
  - Line 36: "K = ND(1)".
  - Line 37: "DEAD".
  - Line 38: "\*\*\*\*TEST FOR NEXT ON PASS\*\*\*\*".
  - Line 39: "ND(1) = ND(1) - ND(1)".
  - Line 40: "DM(1) = DC(1)".
  - Line 41: Decision diamond for "ND(1)". If YES, proceed to Line 42. If NO, proceed to Line 43.
  - Line 42: "END OF DO LOOP?". If YES, proceed to Line 44. If NO, proceed to Line 45.
  - Line 43: "END OF DO LOOP?". If YES, proceed to Line 44. If NO, proceed to Line 45.
  - Line 44: "END OF DO LOOP?". If YES, proceed to Line 46. If NO, proceed to Line 47.
  - Line 45: "END OF DO LOOP?". If YES, proceed to Line 46. If NO, proceed to Line 47.
  - Line 46: "END OF DO LOOP?". If YES, proceed to Line 48. If NO, proceed to Line 49.
  - Line 47: "END OF DO LOOP?". If YES, proceed to Line 48. If NO, proceed to Line 49.
  - Line 48: "END OF DO LOOP?". If YES, proceed to Line 49. If NO, proceed to Line 50.
  - Line 49: "END OF DO LOOP?". If YES, proceed to Line 50. If NO, proceed to Line 51.
  - Line 50: "END OF DO LOOP?". If YES, proceed to Line 51. If NO, proceed to Line 52.
  - Line 51: "END OF DO LOOP?". If YES, proceed to Line 52. If NO, proceed to Line 53.
  - Line 52: "END OF DO LOOP?". If YES, proceed to Line 53. If NO, proceed to Line 54.
  - Line 53: "END OF DO LOOP?". If YES, proceed to Line 54. If NO, proceed to Line 55.
  - Line 54: "END OF DO LOOP?". If YES, proceed to Line 55. If NO, proceed to Line 56.
  - Line 55: "END OF DO LOOP?". If YES, proceed to Line 56. If NO, proceed to Line 57.
  - Line 56: "END OF DO LOOP?". If YES, proceed to Line 57. If NO, proceed to Line 58.
  - Line 57: "END OF DO LOOP?". If YES, proceed to Line 58. If NO, proceed to Line 59.
  - Line 58: "END OF DO LOOP?". If YES, proceed to Line 59. If NO, proceed to Line 60.
  - Line 59: "END OF DO LOOP?". If YES, proceed to Line 60. If NO, proceed to Line 61.
  - Line 60: "END OF DO LOOP?". If YES, proceed to Line 61. If NO, proceed to Line 62.
  - Line 61: "END OF DO LOOP?". If YES, proceed to Line 62. If NO, proceed to Line 63.
  - Line 62: "END OF DO LOOP?". If YES, proceed to Line 63. If NO, proceed to Line 64.
  - Line 63: "END OF DO LOOP?". If YES, proceed to Line 64. If NO, proceed to Line 65.
  - Line 64: "END OF DO LOOP?". If YES, proceed to Line 65. If NO, proceed to Line 66.
  - Line 65: "END OF DO LOOP?". If YES, proceed to Line 66. If NO, proceed to Line 67.
  - Line 66: "END OF DO LOOP?". If YES, proceed to Line 67. If NO, proceed to Line 68.
  - Line 67: "END OF DO LOOP?". If YES, proceed to Line 68. If NO, proceed to Line 69.
  - Line 68: "END OF DO LOOP?". If YES, proceed to Line 69. If NO, proceed to Line 70.
  - Line 69: "END OF DO LOOP?". If YES, proceed to Line 70. If NO, proceed to Line 71.
  - Line 70: "END OF DO LOOP?". If YES, proceed to Line 71. If NO, proceed to Line 72.
  - Line 71: "END OF DO LOOP?". If YES, proceed to Line 72. If NO, proceed to Line 73.
  - Line 72: "END OF DO LOOP?". If YES, proceed to Line 73. If NO, proceed to Line 74.
  - Line 73: "END OF DO LOOP?". If YES, proceed to Line 74. If NO, proceed to Line 75.
  - Line 74: "END OF DO LOOP?". If YES, proceed to Line 75. If NO, proceed to Line 76.
  - Line 75: "END OF DO LOOP?". If YES, proceed to Line 76. If NO, proceed to Line 77.
  - Line 76: "END OF DO LOOP?". If YES, proceed to Line 77. If NO, proceed to Line 78.
  - Line 77: "END OF DO LOOP?". If YES, proceed to Line 78. If NO, proceed to Line 79.
  - Line 78: "END OF DO LOOP?". If YES, proceed to Line 79. If NO, proceed to Line 80.
  - Line 79: "END OF DO LOOP?". If YES, proceed to Line 80. If NO, proceed to Line 81.
  - Line 80: "END OF DO LOOP?". If YES, proceed to Line 81. If NO, proceed to Line 82.
  - Line 81: "END OF DO LOOP?". If YES, proceed to Line 82. If NO, proceed to Line 83.
  - Line 82: "END OF DO LOOP?". If YES, proceed to Line 83. If NO, proceed to Line 84.
  - Line 83: "END OF DO LOOP?". If YES, proceed to Line 84. If NO, proceed to Line 85.
  - Line 84: "END OF DO LOOP?". If YES, proceed to Line 85. If NO, proceed to Line 86.
  - Line 85: "END OF DO LOOP?". If YES, proceed to Line 86. If NO, proceed to Line 87.
  - Line 86: "END OF DO LOOP?". If YES, proceed to Line 87. If NO, proceed to Line 88.
  - Line 87: "END OF DO LOOP?". If YES, proceed to Line 88. If NO, proceed to Line 89.
  - Line 88: "END OF DO LOOP?". If YES, proceed to Line 89. If NO, proceed to Line 90.
  - Line 89: "END OF DO LOOP?". If YES, proceed to Line 90. If NO, proceed to Line 91.
  - Line 90: "END OF DO LOOP?". If YES, proceed to Line 91. If NO, proceed to Line 92.
  - Line 91: "END OF DO LOOP?". If YES, proceed to Line 92. If NO, proceed to Line 93.
  - Line 92: "END OF DO LOOP?". If YES, proceed to Line 93. If NO, proceed to Line 94.
  - Line 93: "END OF DO LOOP?". If YES, proceed to Line 94. If NO, proceed to Line 95.
  - Line 94: "END OF DO LOOP?". If YES, proceed to Line 95. If NO, proceed to Line 96.
  - Line 95: "END OF DO LOOP?". If YES, proceed to Line 96. If NO, proceed to Line 97.
  - Line 96: "END OF DO LOOP?". If YES, proceed to Line 97. If NO, proceed to Line 98.
  - Line 97: "END OF DO LOOP?". If YES, proceed to Line 98. If NO, proceed to Line 99.
  - Line 98: "END OF DO LOOP?". If YES, proceed to Line 99. If NO, proceed to Line 100.
  - Line 99: "END OF DO LOOP?". If YES, proceed to Line 100. If NO, proceed to Line 101.
  - Line 100: "END OF DO LOOP?". If YES, proceed to Line 101. If NO, proceed to Line 102.
  - Line 101: "END OF DO LOOP?". If YES, proceed to Line 102. If NO, proceed to Line 103.
  - Line 102: "END OF DO LOOP?". If YES, proceed to Line 103. If NO, proceed to Line 104.
  - Line 103: "END OF DO LOOP?". If YES, proceed to Line 104. If NO, proceed to Line 105.
  - Line 104: "END OF DO LOOP?". If YES, proceed to Line 105. If NO, proceed to Line 106.
  - Line 105: "END OF DO LOOP?". If YES, proceed to Line 106. If NO, proceed to Line 107.
  - Line 106: "END OF DO LOOP?". If YES, proceed to Line 107. If NO, proceed to Line 108.
  - Line 107: "END OF DO LOOP?". If YES, proceed to Line 108. If NO, proceed to Line 109.
  - Line 108: "END OF DO LOOP?". If YES, proceed to Line 109. If NO, proceed to Line 110.
  - Line 109: "END OF DO LOOP?". If YES, proceed to Line 110. If NO, proceed to Line 111.
  - Line 110: "END OF DO LOOP?". If YES, proceed to Line 111. If NO, proceed to Line 112.
  - Line 111: "END OF DO LOOP?". If YES, proceed to Line 112. If NO, proceed to Line 113.
  - Line 112: "END OF DO LOOP?". If YES, proceed to Line 113. If NO, proceed to Line 114.
  - Line 113: "END OF DO LOOP?". If YES, proceed to Line 114. If NO, proceed to Line 115.
  - Line 114: "END OF DO LOOP?". If YES, proceed to Line 115. If NO, proceed to Line 116.
  - Line 115: "END OF DO LOOP?". If YES, proceed to Line 116. If NO, proceed to Line 117.
  - Line 116: "END OF DO LOOP?". If YES, proceed to Line 117. If NO, proceed to Line 118.
  - Line 117: "END OF DO LOOP?". If YES, proceed to Line 118. If NO, proceed to Line 119.
  - Line 118: "END OF DO LOOP?". If YES, proceed to Line 119. If NO, proceed to Line 120.
  - Line 119: "END OF DO LOOP?". If YES, proceed to Line 120. If NO, proceed to Line 121.
  - Line 120: "END OF DO LOOP?". If YES, proceed to Line 121. If NO, proceed to Line 122.
  - Line 121: "END OF DO LOOP?". If YES, proceed to Line 122. If NO, proceed to Line 123.
  - Line 122: "END OF DO LOOP?". If YES, proceed to Line 123. If NO, proceed to Line 124.
  - Line 123: "END OF DO LOOP?". If YES, proceed to Line 124. If NO, proceed to Line 125.
  - Line 124: "END OF DO LOOP?". If YES, proceed to Line 125. If NO, proceed to Line 126.
  - Line 125: "END OF DO LOOP?". If YES, proceed to Line 126. If NO, proceed to Line 127.
  - Line 126: "END OF DO LOOP?". If YES, proceed to Line 127. If

## CHRY: TITLE - NON-CLASSIFIED STATIONARY

2005

08/14/74

AUTOTECN CHART SLT - SHEEP WIND AND EMISSIONS HOUSE - PAGE 37

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE CKSTAD\*\*\*\*\*

\*\*\*COMP/SEOR STABILITY CHECK FOR ADV. COMP. PANELS\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE C1STAB,D,L,M,N,P,NKY,FACT,FCRS,FCMS,LEAS,TCNPL1

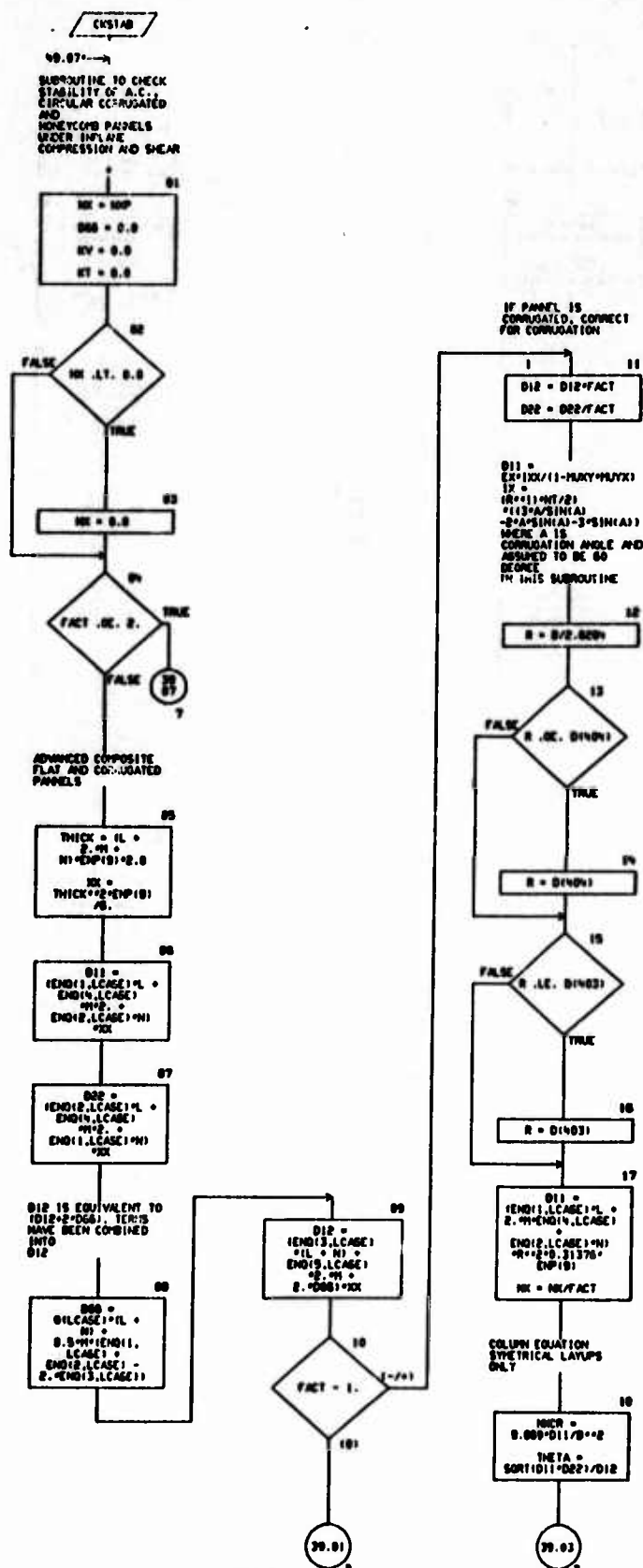
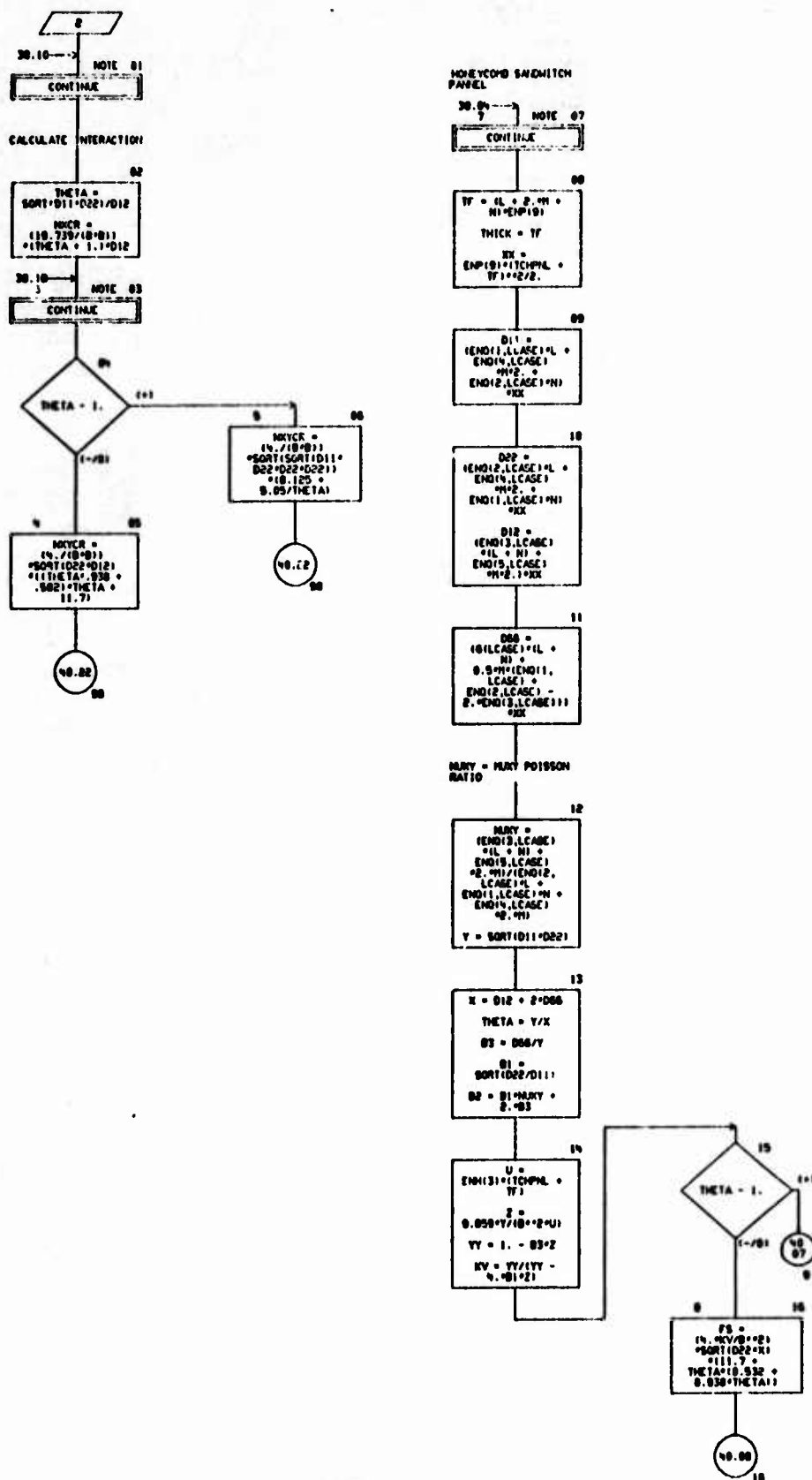


CHART TITLE - SUBROUTINE (NSTAB,D,B,L,M,N,IMP,NVY,FACT,PERC,PCFS,LCASE,TCFPA)





2009

CHART TITLE - SUBROUTINE C-STARTR, R, L, M, N, HOP, NXY, FACT, PERC, PERH, LEAC, TCH, LI



CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(1615)
DIMENSION D(2000),CD(2000),ND(100),TH(500),CT(2000),
ENP(10),ENH(10),
END(15,20),ENC(10),
APRT(10,12),
Q(20)
EQUIVALENCE (D(1),T(2001)),(CD(1),T(4121)),(ND(1),T(6121)),
(TH(1),T(8221)),(CT(1),T(7121)),
(ENP(1),D(1155)),(ENH(1),D(1164)),
(ENC(1),CT(2043)),(END(1,1),TH(60)),
(APRT(1,1),T(1070)),(HMAX,ND(3)),(HSTAT,ND(55)),
(10(1),CT(2023))
REAL NXP
REAL KV,MURV,KT,L,M,N,NX,NXY,NXR,NXYR
205 FORMAT (1MD/,2NH0 '**CKSTAD SUBR -- STA,12,12N LOAD CASE ,12,B1
PT ND=14,NH B=F6.2,BH FACT=F4.2,NH** )
206 FORMAT (2X,3F6.1,F7.4,3X,2E15.0,3X,3E15.0,/304,2E15.0,3X,3E15.0,/1
2X,715.0,3X,2E15.0,3X,3E15.0/12X,F0.6,3X,2E15.0)

```

06/14/76

AUTOFLOW CHART SET - SWEEP    MING AND EFFERAGE RECORD -    PAGE 43

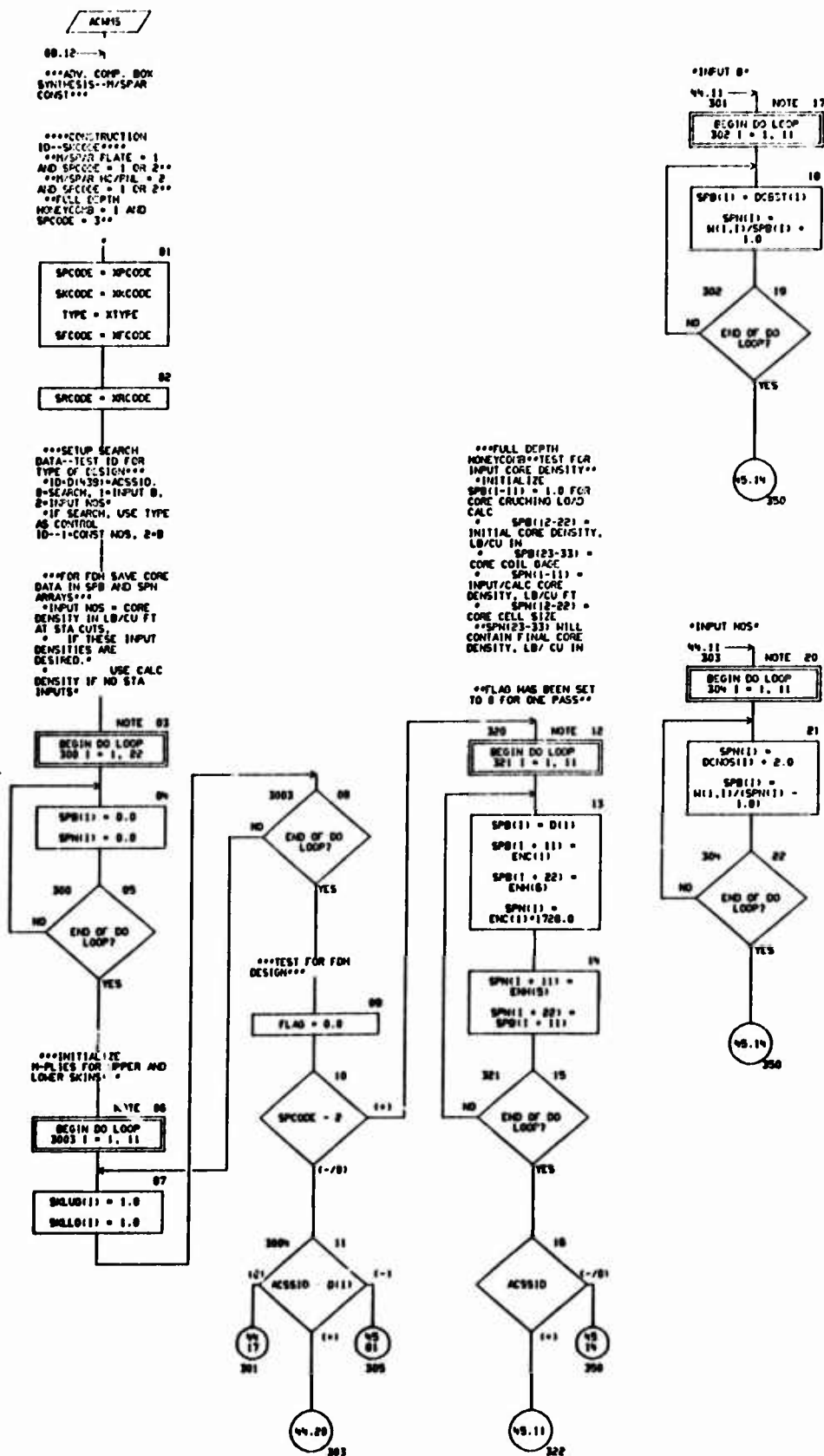
CHART TITLE - INTRODUCTORY CONTENTS

\*\*\*\*\*

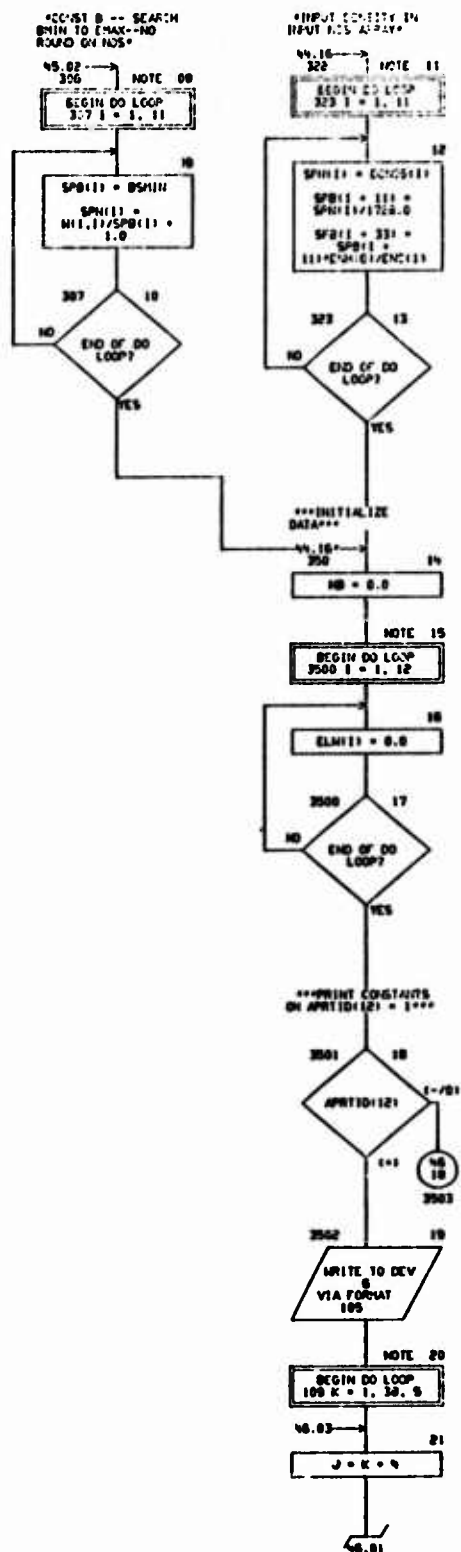
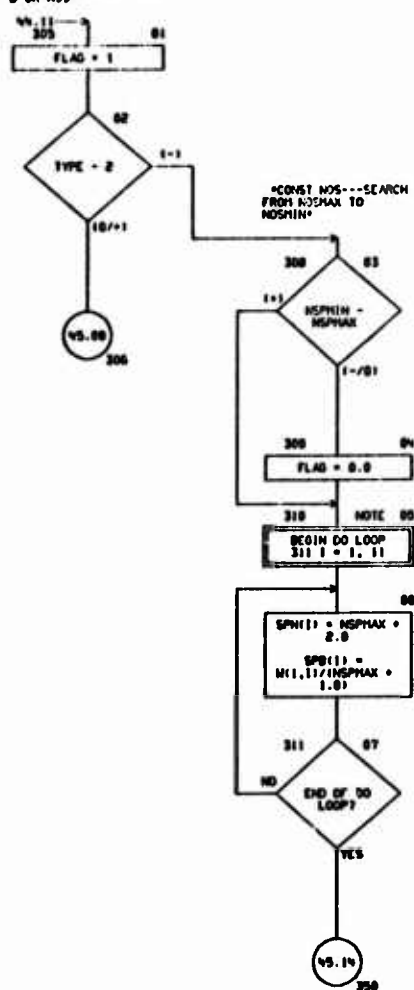
\*\*\*\*\*SUBROUTINE ACMS\*\*\*\*\*

\*\*\*M/SPAR, FDM TORQUE-BOX SYNTHESIS - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*



• LEARN--TEST TYPE  
OF ORIENTATION--CONST  
0 OR NDS.



2015

•-TUESDAY-•

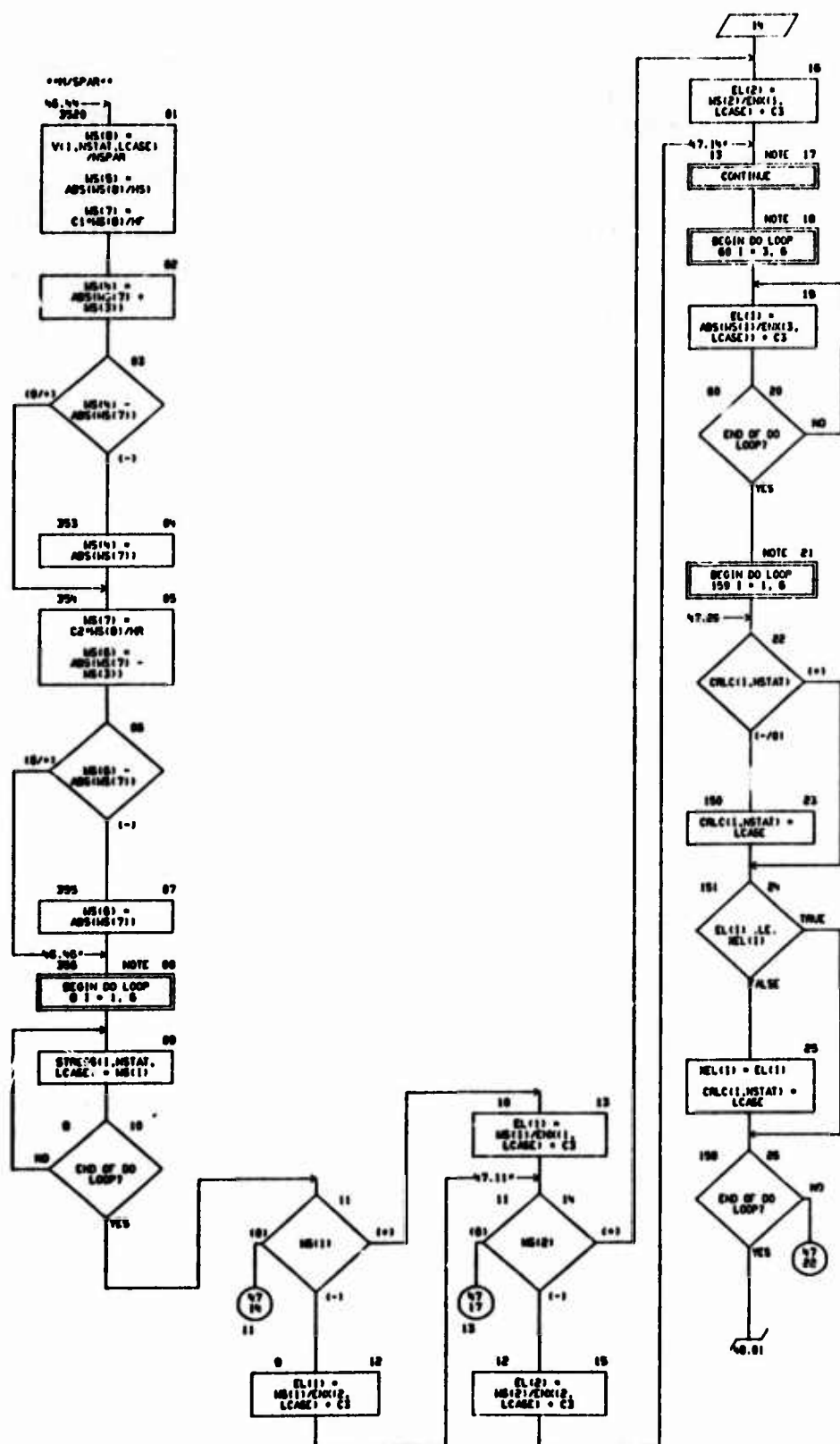




CHART TITLE - SUBROUTINE ACN13

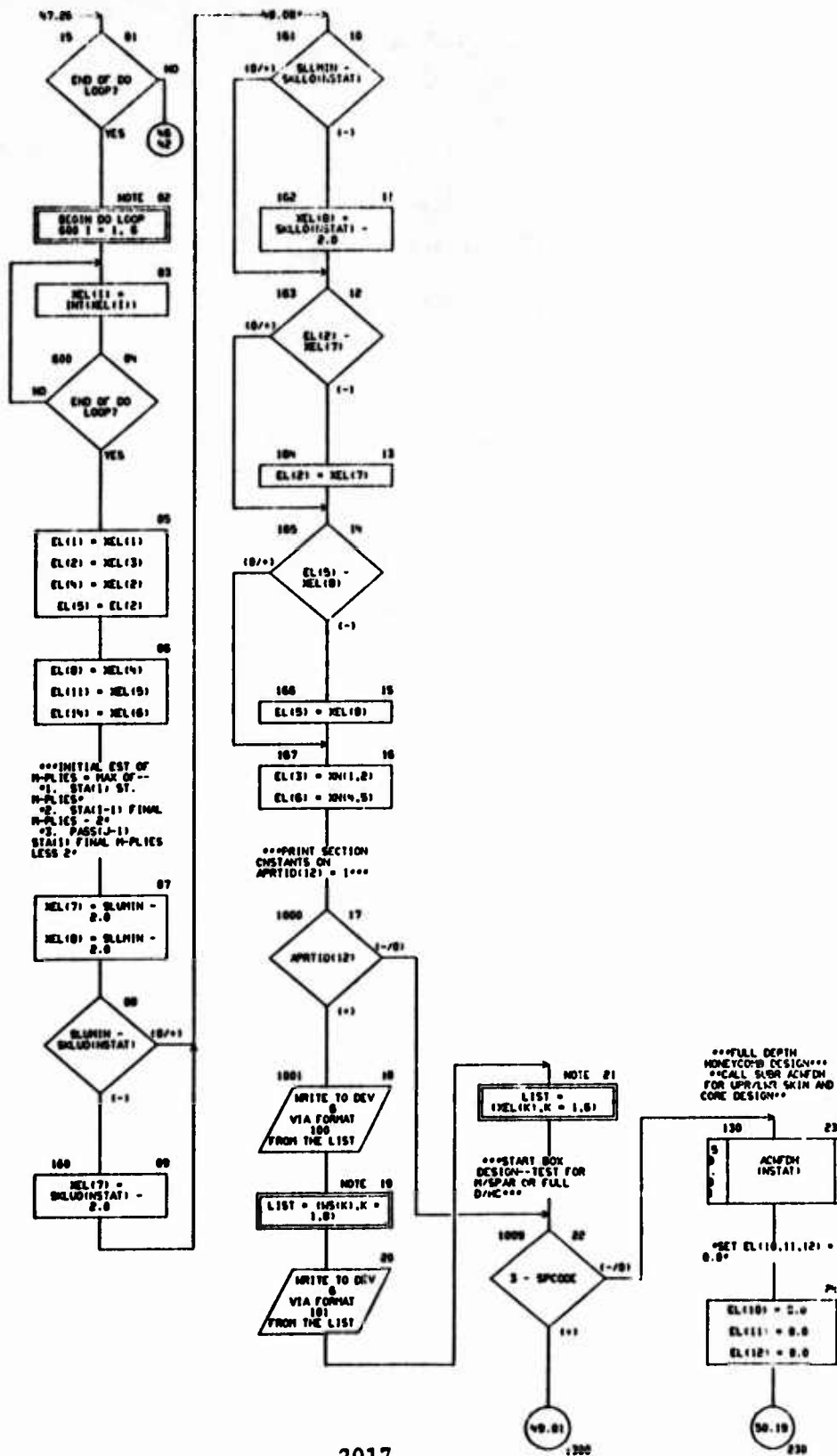


CHART TITLE - ELECTROSTATIC ANALYSIS

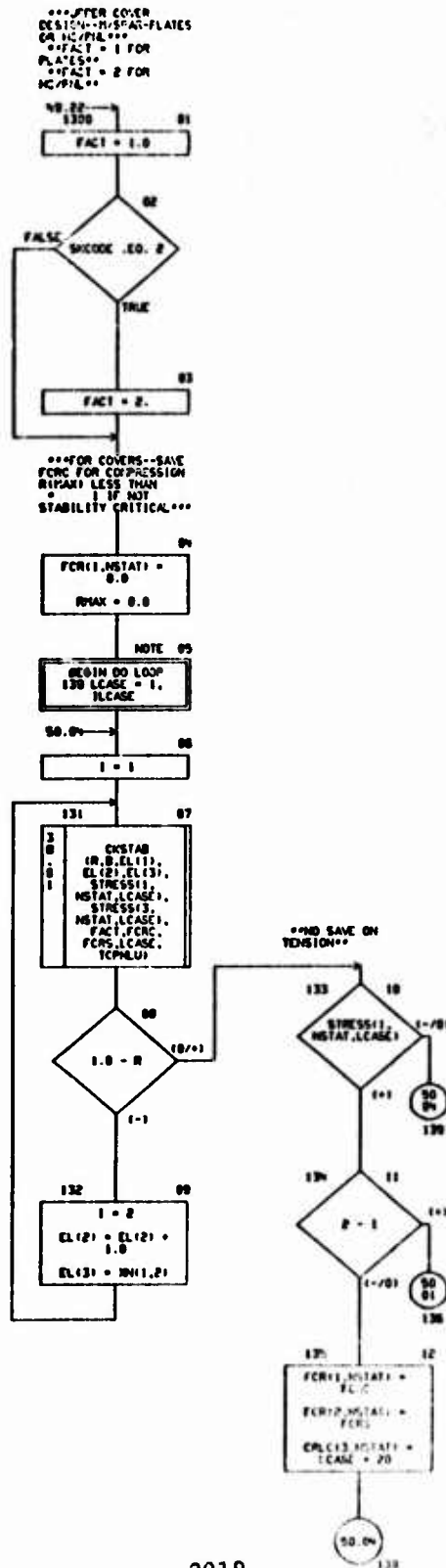


CHART TITLE - SUBROUTINE ACING

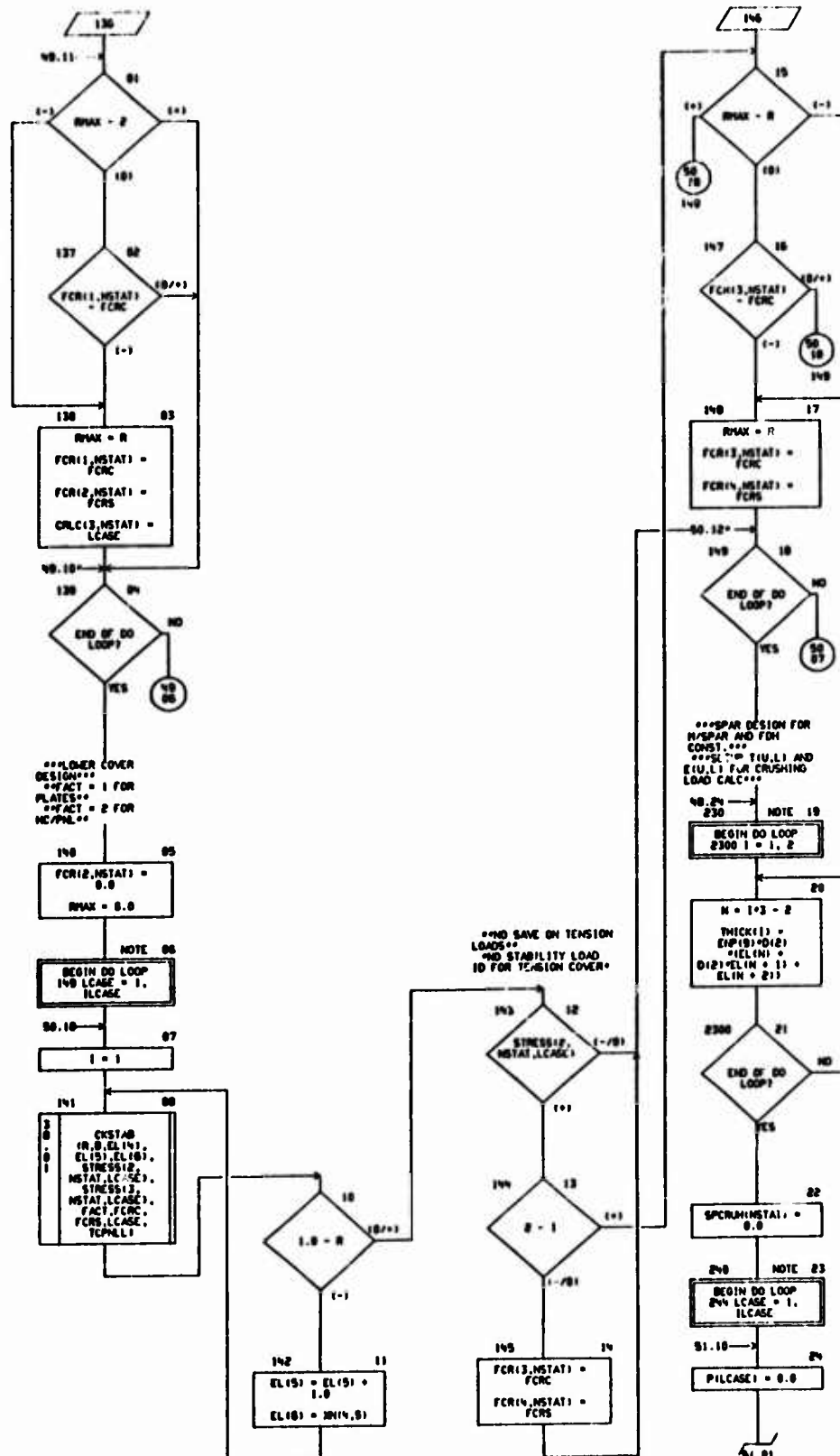


CHART TITLE - SHEEP/TIME ACPTS

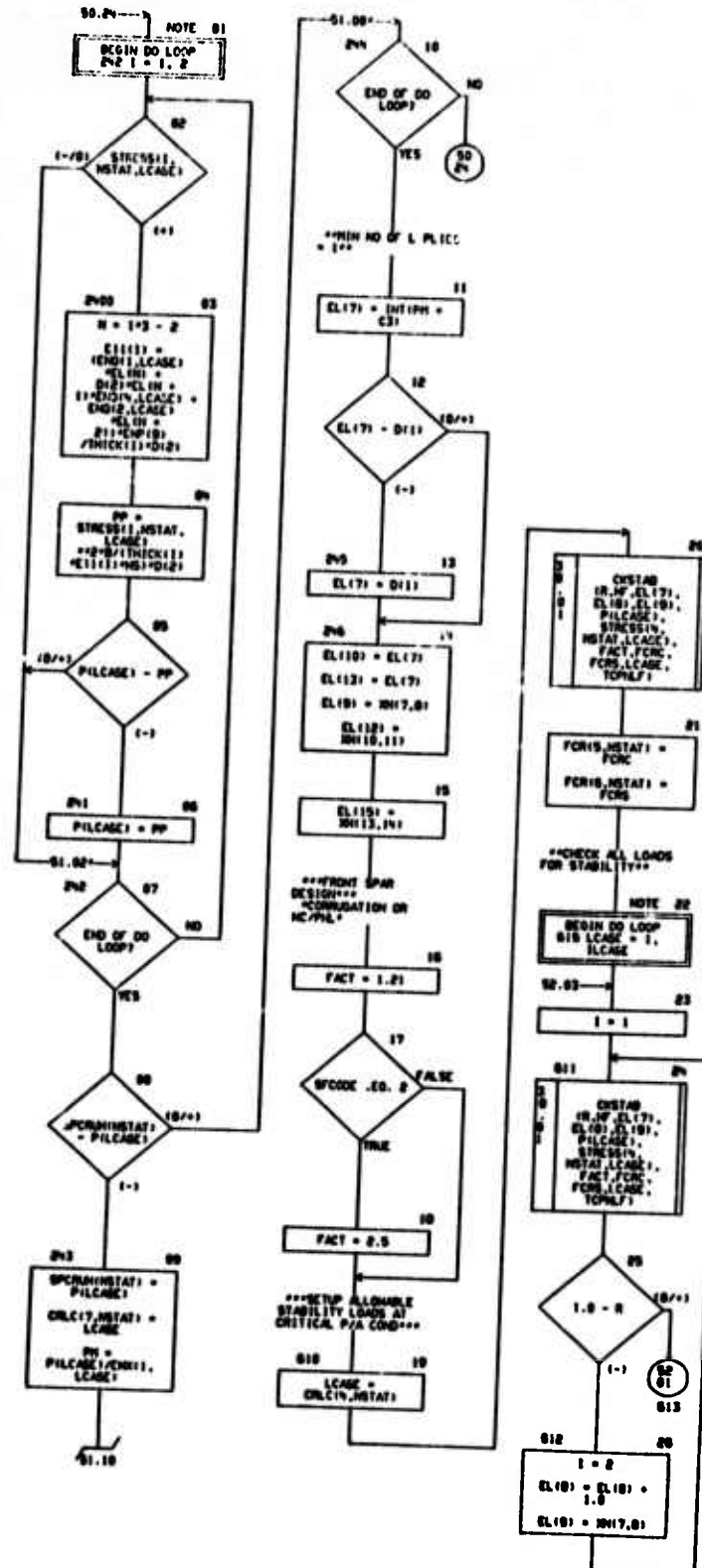


CHART TITLE - SUBROUTINE ACMS

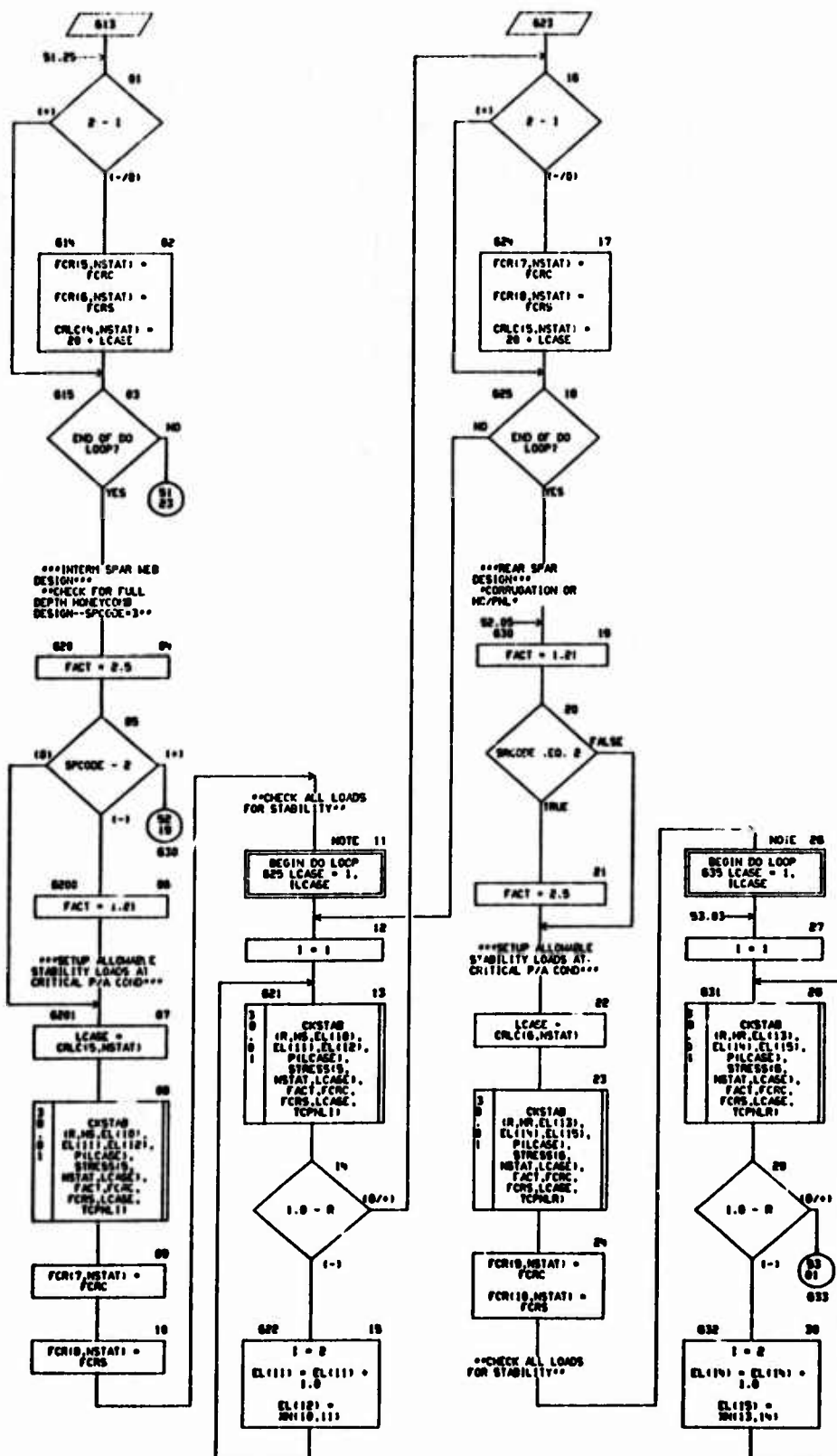


CHART TITLE - SUBROUTINE ACIMS

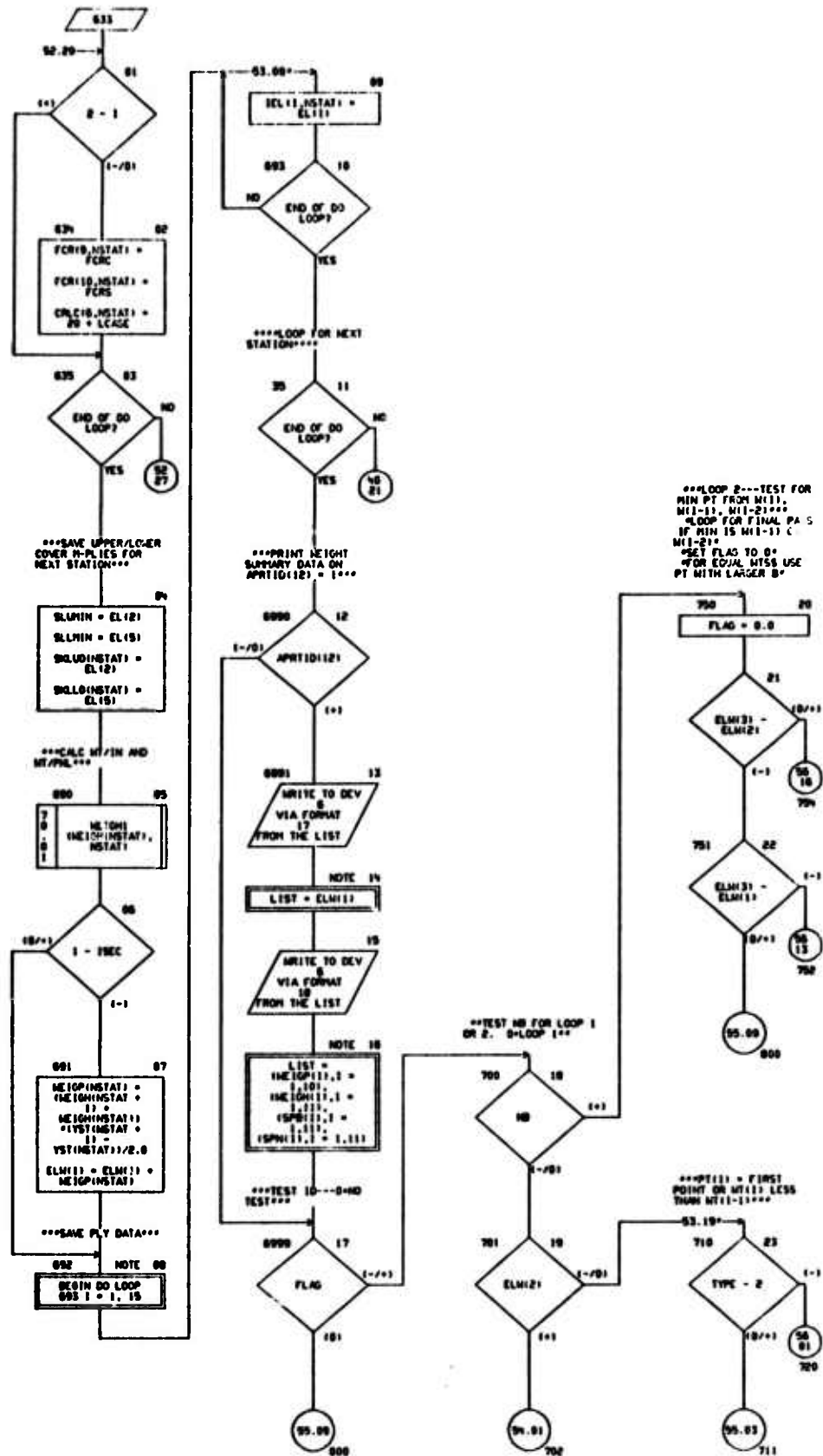
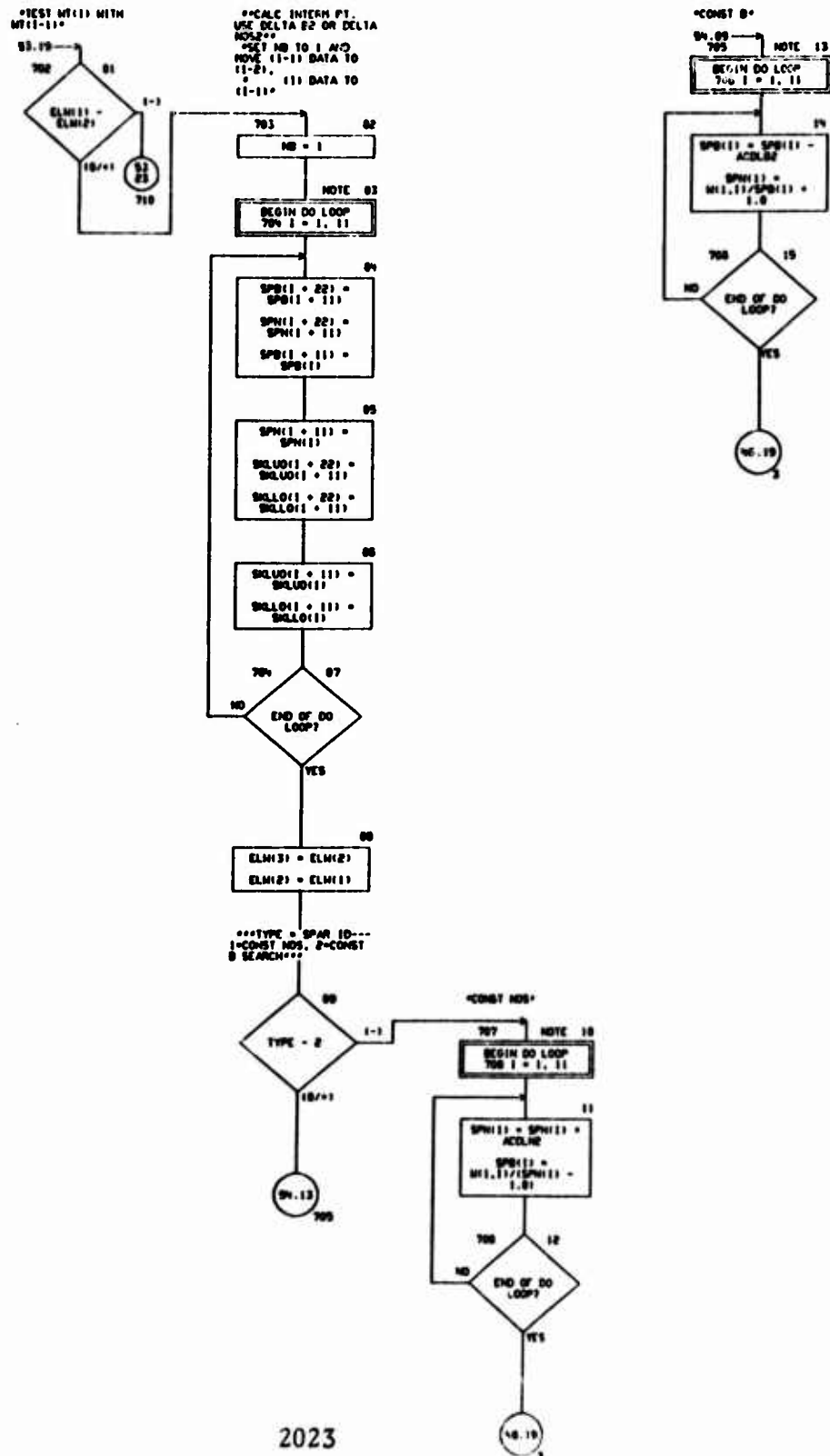


CHART TITLE - SUBROUTINE ACMP5



```

..CONST 0
SEARCH--..ICST IF
PTIII IS AT ENAX..

```

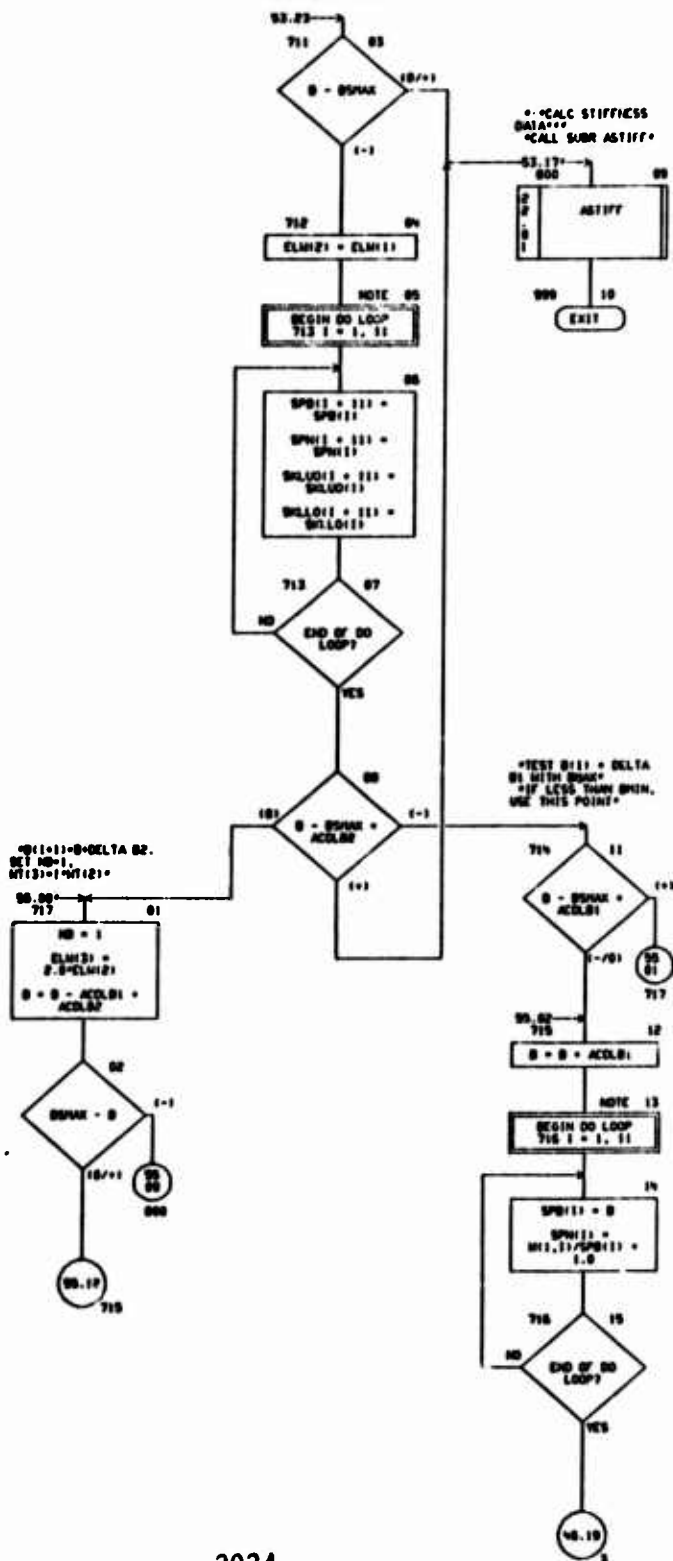
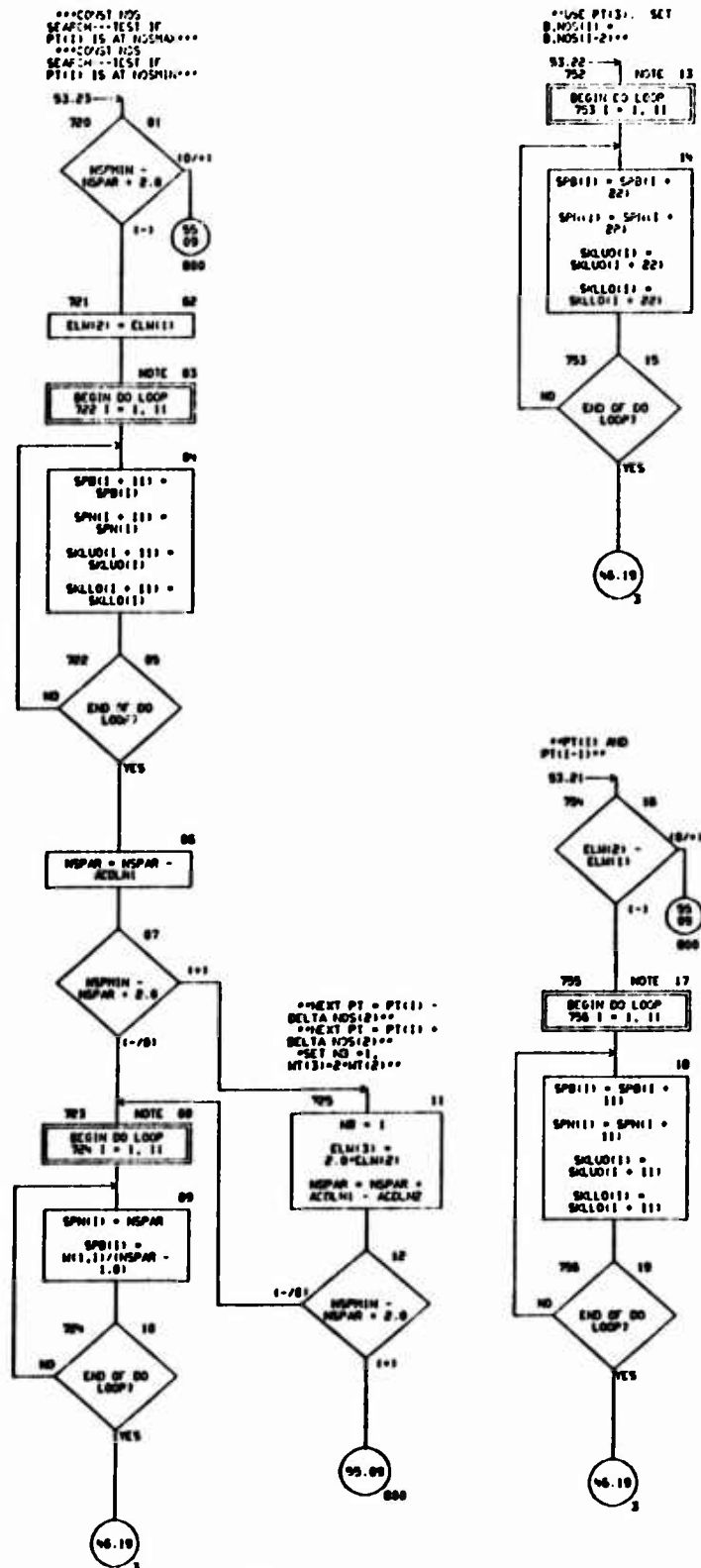




CHART TITLE - SUBROUTINE ACMP5



[illegible]

06/14/74

AUTOFLOW CHART SET - SLEEP WING AND LIFETIME PROBLE - PAGE 50

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACWFM\*\*\*\*\*

\*\*\*FULL-DEPTH NC SECTION OPTIMIZATION - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE ACFMDH(N)

ACFMDH

40.23--&gt;

\*\*\*SUB FOR SIZING  
OF FULL DEPTH  
NOKEYCUTS  
TORQUE-BOX\*\*\*  
\*\*CHECK SECTION  
COVER AND CORE HEIGHTS  
FOR CORE STABILITY\*\*  
\* WRINKLING AND  
CRUSHING\*

\*\*\*SIZINGS TO BE  
BASED ON STATUS OF  
SIZING ID--ACFMC\*\*\*  
\*\*ACFMC = D14341\*\*  
\* 1. OPTIMUM  
SKIN/COE  
COMBINATION--ID-0  
\* 2. CONSTANT  
CORE/VARIABLE  
SKIN--ID-1  
\* 3. CONSTANT  
SKIN/VARIABLE CORE  
DENSITY--ID-2

\*\*\*\* NOTE.  
IF 131.321 MUST NOT BE  
USED. USED BY  
ACFMDH\*\*\*\*  
\*\*\* N = NSTAT\*\*\*

\*\*\*SIZE UPPER AND  
LOWER COVER IN TWO  
PASSES\*\*\*  
\*\*SAVE FCR FOR  
COMPRESSION RMAX LESS  
THAN U  
\*\*SAVE FCR FOR  
COMPRESSION RMAX LESS  
THAN I IF NOT  
\*\* CRITICAL FOR  
WRINKLING OR  
CRUSHING\*\*  
\*IS = STABILITY ID  
AT LOAD FOR SKINS.  
I=NO, 2=YES\*  
\*IC = STABILITY ID  
AT LOAD FOR CORE.  
I=NO, 2=YES\*

\*\*\*SETUP DATA FOR  
LOAD LOOP AND EXSFON  
SUBR\*\*\*

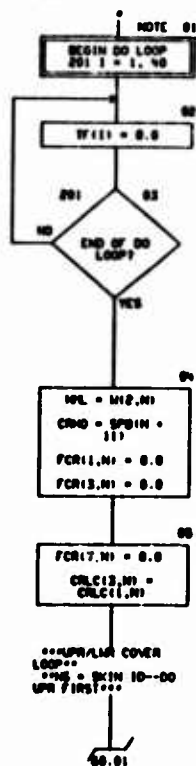


CHART TITLE - SKEEP/TYPE ACWZ-4101

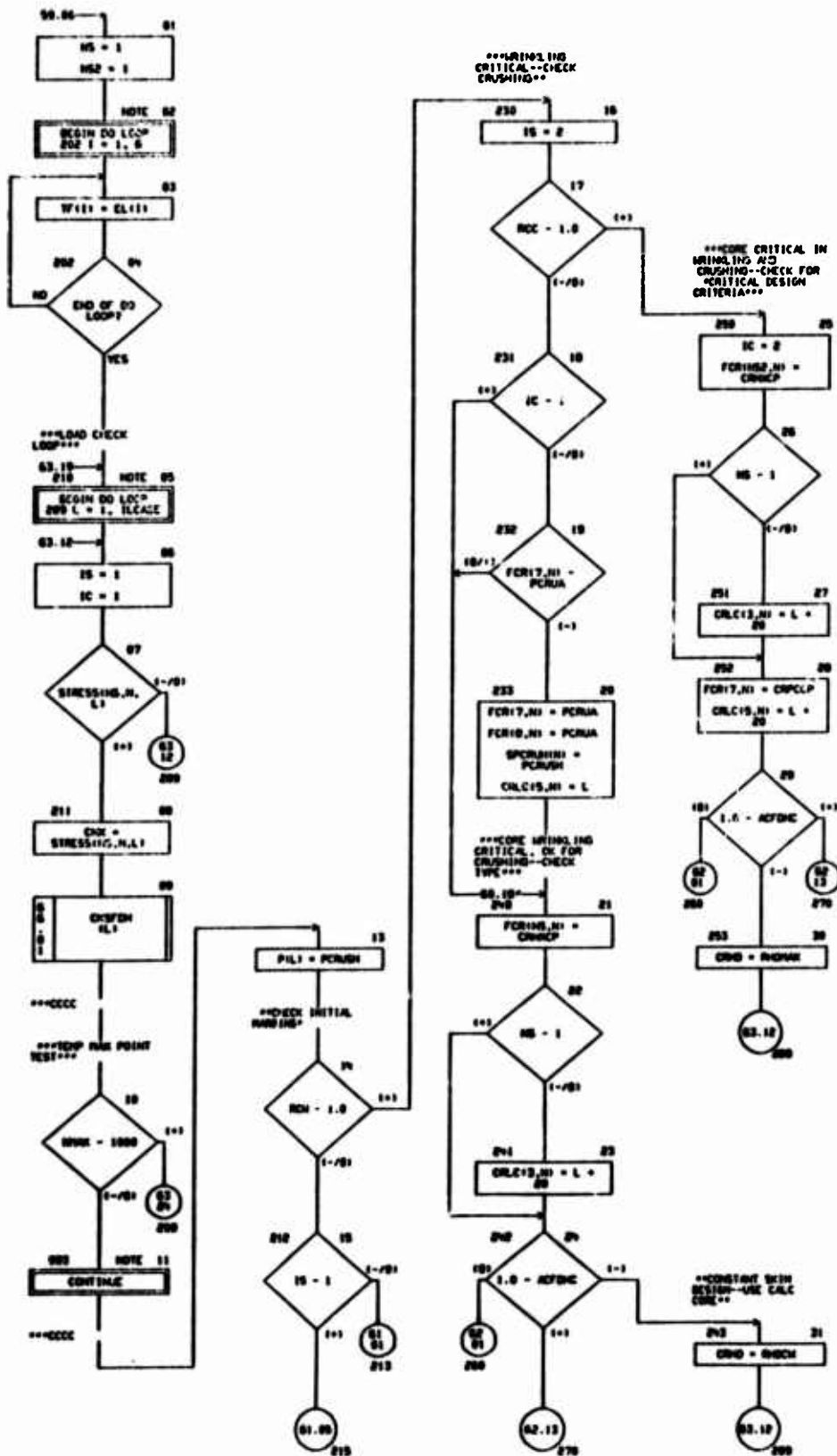
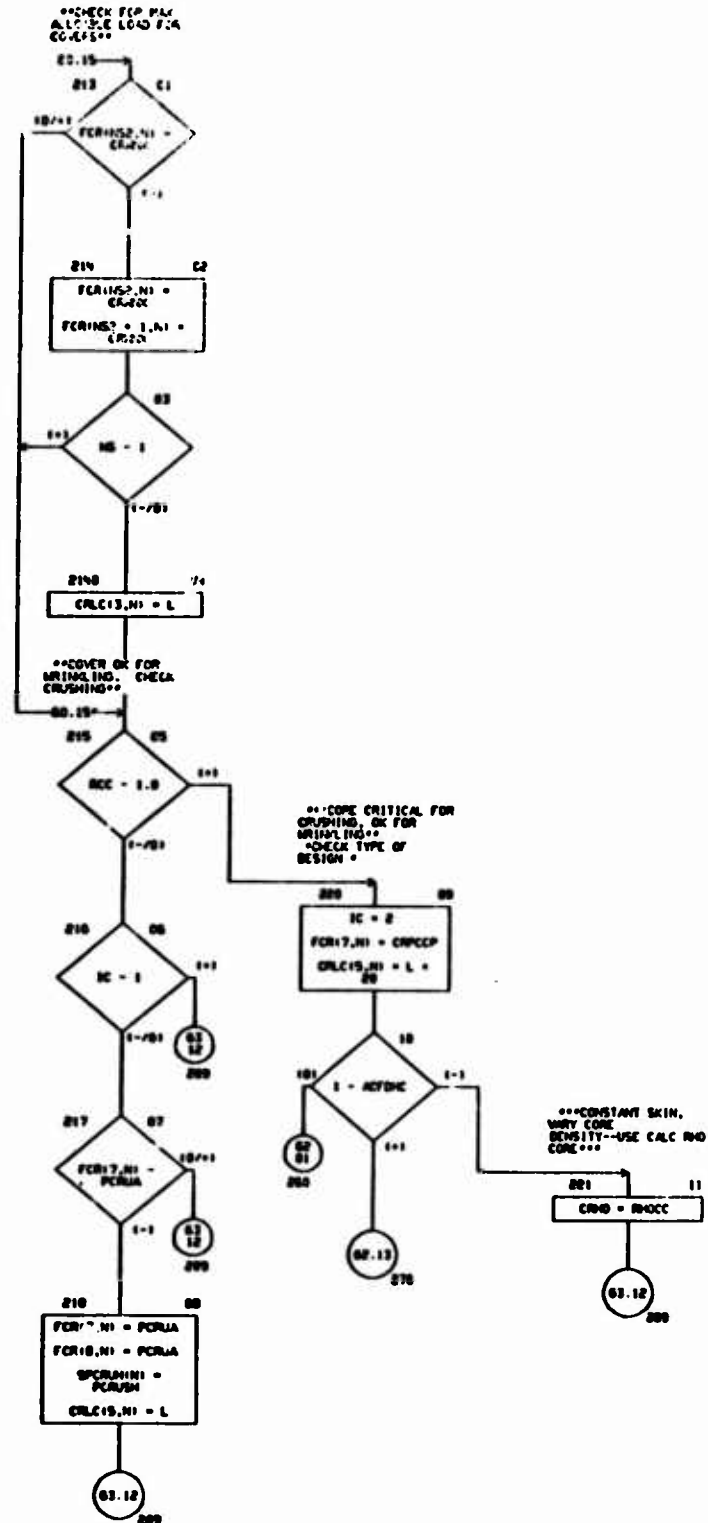
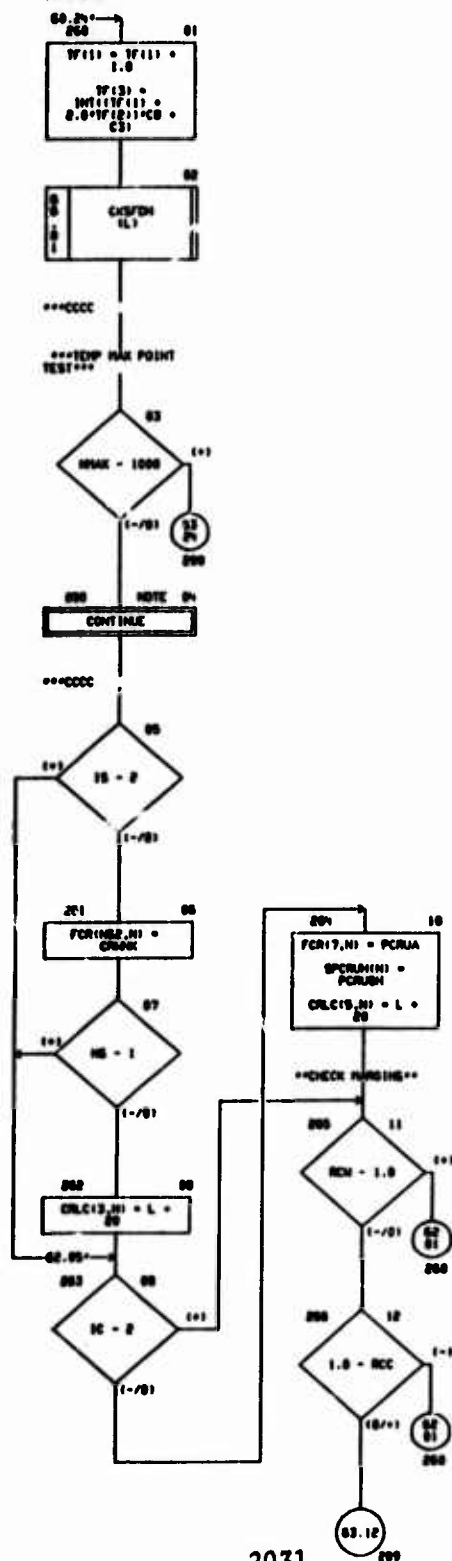


CHART TITLE - SUBROUTINE ALGFORM



\*\*\*VARY SKIN  
ONLY--ADD ONE L-PLY  
IN STEPS\*\*\*



\*\*\*VARY SKIN AND  
CORE--ADD ONE L-PLY  
IN STEPS\*\*\*

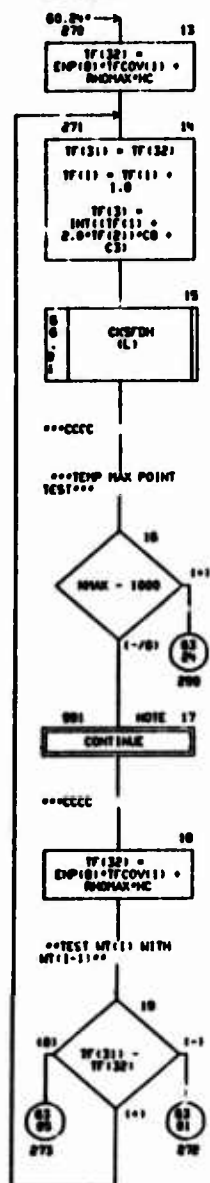


CHART TITLE - SUBROUTINE ACWFENH1

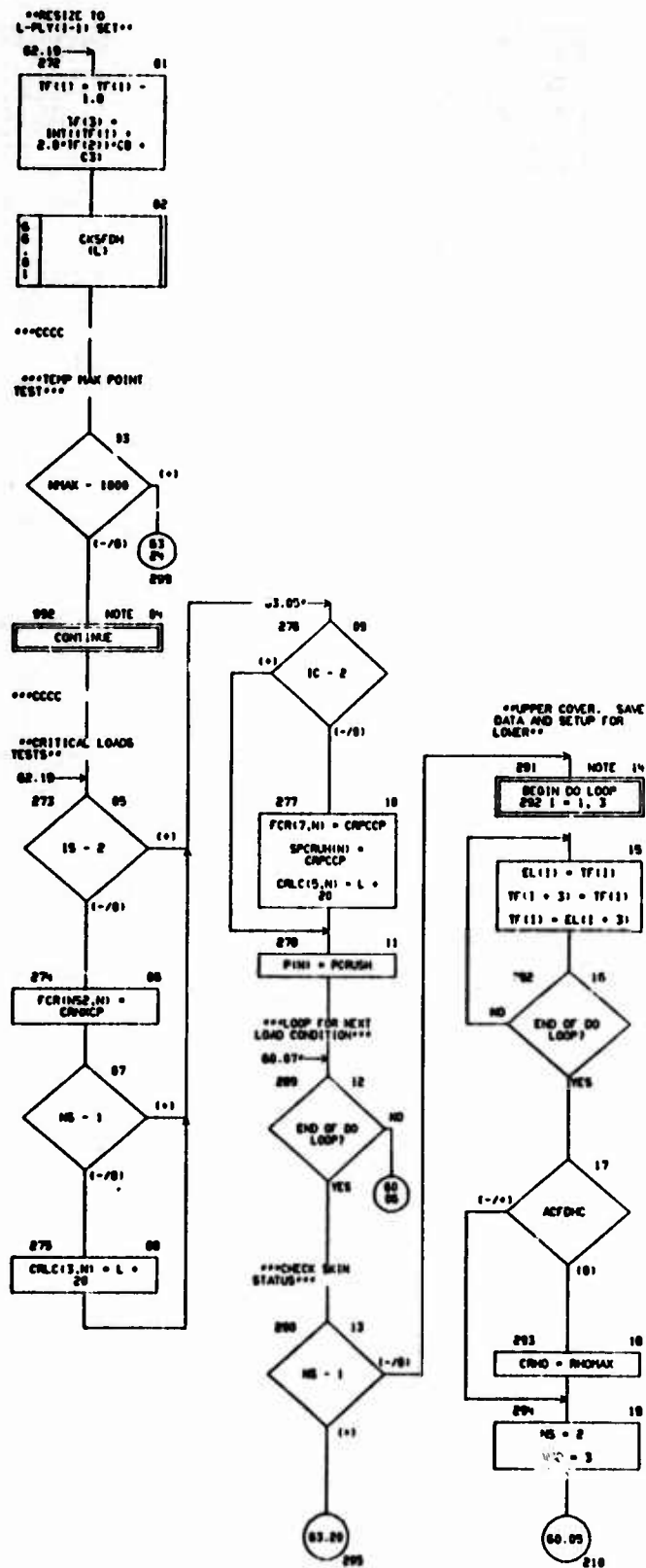




CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON (ZC60),D(2C60),CD(200),ND(100),TH(900),CT(2040)
DIMENSION EXP(5),TF(16),ENC(3),
EL(15),END(5,20),
STRESS(6,11,20),CRLC(7,11),SPCRUH(11),P(20),
PCR(10,11),M(2,11),
CNT(9),TFCOV(2),
SPB(33),SPH(33),
TF(40)
EQUIVALENCE (EXP(1),D(1155)),(ENH(1),D(1104)),(ENC(1),CT(2043)),
(EL(1),T(1300)),(END(1,1),TH(601)),(SPC55(1,1,1),CT(1)),
(CRLC(1,1),T(1501)),(SPCRUH(1),T(1632)),(P(1),T(1836)),
(PCR(1,1),T(1100)),(CNT(1),T(154)),(C3,CNT(13)),(C0,CNT(23)),
(M(1,1),CT(193)),
(SPB(1),T(1232)),(SPH(1),T(1255)),
(ACFPMC,D(1434)),(ILC/SE,ND(14))
EQUIVALENCE (TF(1),T(202)),
(CNK,TF(7)),(CRND,TF(8)),(HCL,TF(9)),(TFCOV(1),TF(10)),
(CRNDK,TF(18)),(PCRUSH,TF(19)),(PCAU,TF(20)),
(RCH,TF(21)),(RCC,TF(22)),
(RHOCN,TF(23)),(RHOC,TF(24)),(HC,TF(25)),
(CRNDKP,TF(28)),(CRPCCP,TF(29)),
(RNDKX,ND(31)),
(RNDKX,TF(30))

```

06/14/76

AUTOFLOW CHART SET - SWEEP MINS AND ENDFRAME MODULE - PAGE 05

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*ROUTINE CRSFEM\*\*\*\*\*

\*\*\*STABILITY EVAL FOR FULL DEPTH HC CORE/SKINS - ADV. COMP. ANALYSIS

\*\*\*\*\*

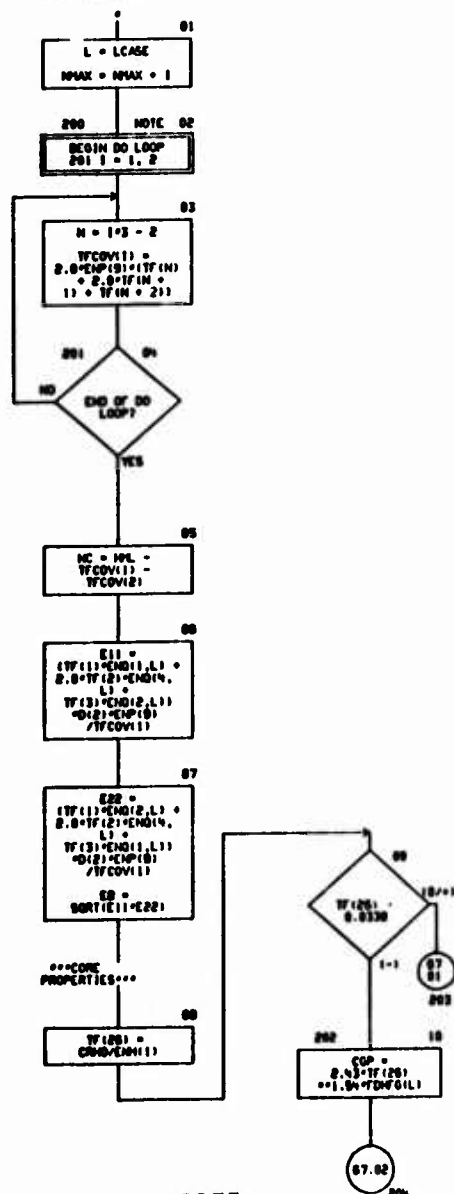


CHART TITLE - SUBROUTINE CRUSHMILCASE1

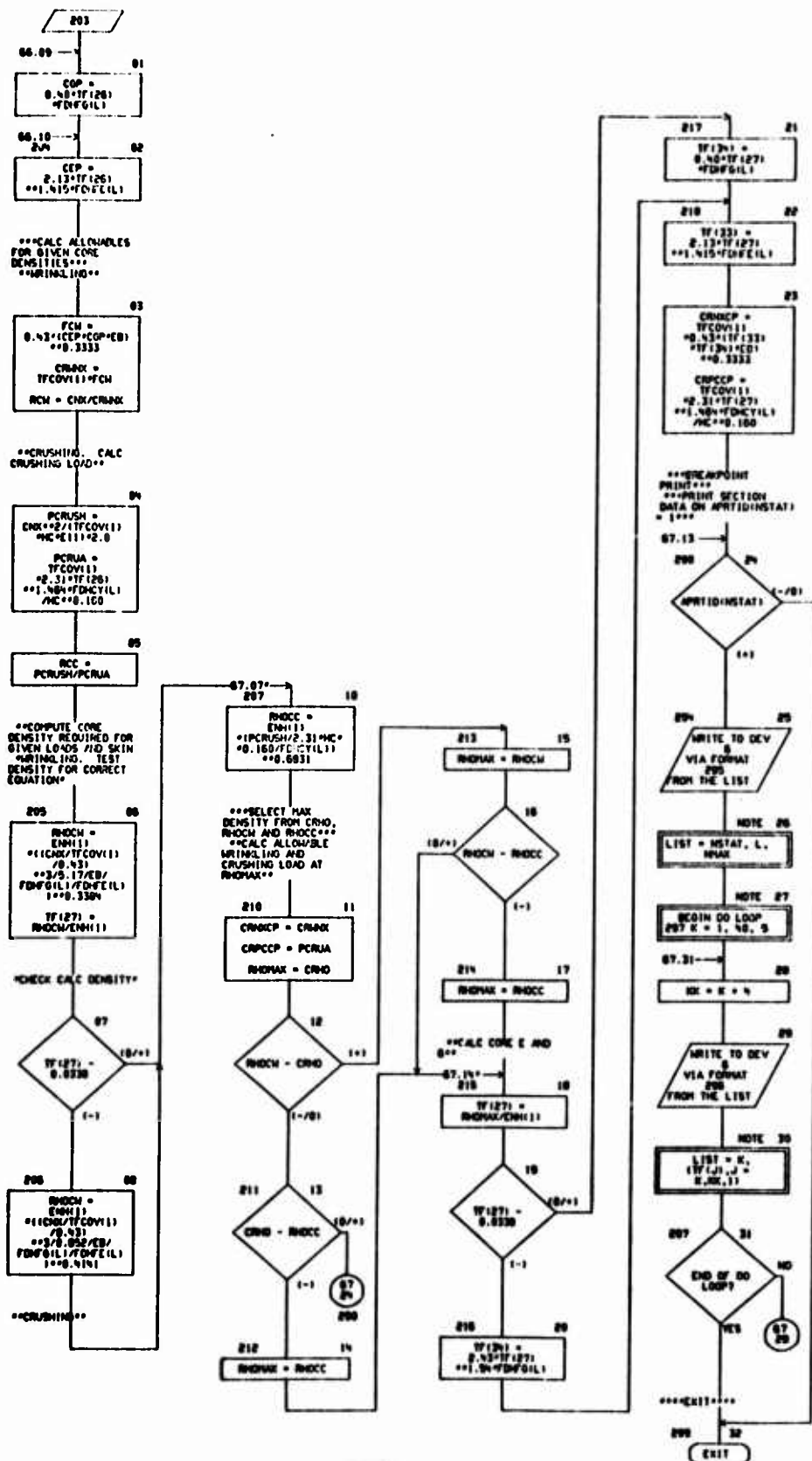


CHART TITLE - WIND-PROCEEDURAL STATEMENTS

```

COMMON T(2000),D(2000),CD(2000),ND(100),TH(900),CT(2049)
DIMENSION EMP(9),ENH(6),EN(3),P(1),
FDHCV(20),FDHFE(20),FDHFG(20),
APRT(10),
TF(40),TFCOV(2)
EQUIVALENCE (EMP(1),D(155)),(ENH(1),D(104)),(EN(1),P(1),TH(60)),
(FDHCV(1),TH(61)),(FDHFE(1),TH(66)),(FDHFG(1),TH(80)),
(TF(1),T(2021)),(EN(7),TF(7)),(CRND,TF(8)),(HPL,TF(9)),
(TFCOV(1),TF(10)),(E1,TF(12)),(E2,TF(13)),(E3,TF(14)),
(CEP,TF(15)),(COP,TF(16)),(FCM,TF(17)),(CRWAK,TF(18)),
(IPCRUSH,TF(19)),(PCRJA,TF(20)),(RCM,TF(21)),(RCC,TF(22)),
(CRBCP,TF(23)),(CRPCCP,TF(29)),(RMQMAX,TF(30)),
(APRT(1),T(1070)),(HMAX,ND(31)),(HSTAT,ND(55)),
(RMDCM,TF(25)),(CC,TF(24)),(MC,TF(25))
205 FORMAT (1H0/,ENH) ***CKSFDM SUBR -- STA,12,12H LOAD CASE ,12,0H
PT ND=14,ND*** ,/B13 TF 1
206 FORMAT (3X,12,3X,5E10.0)

```

06/14/76

AUTOFLOW CHART SET - SHEEP WIND AND EXTERNSIDE MODULE - PAGE 83

CHART TITLE - INTRODUCTORY CONTENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE MESH\*\*\*\*\*

\*\*\*SECTION ME PER INCH FOR ADV. COMP. INSULATION TGAUE-BOX\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE WEIGHLINE1,INITAT1

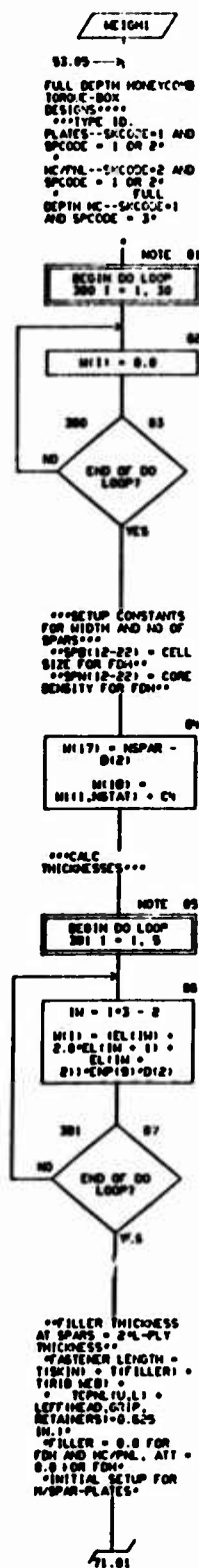
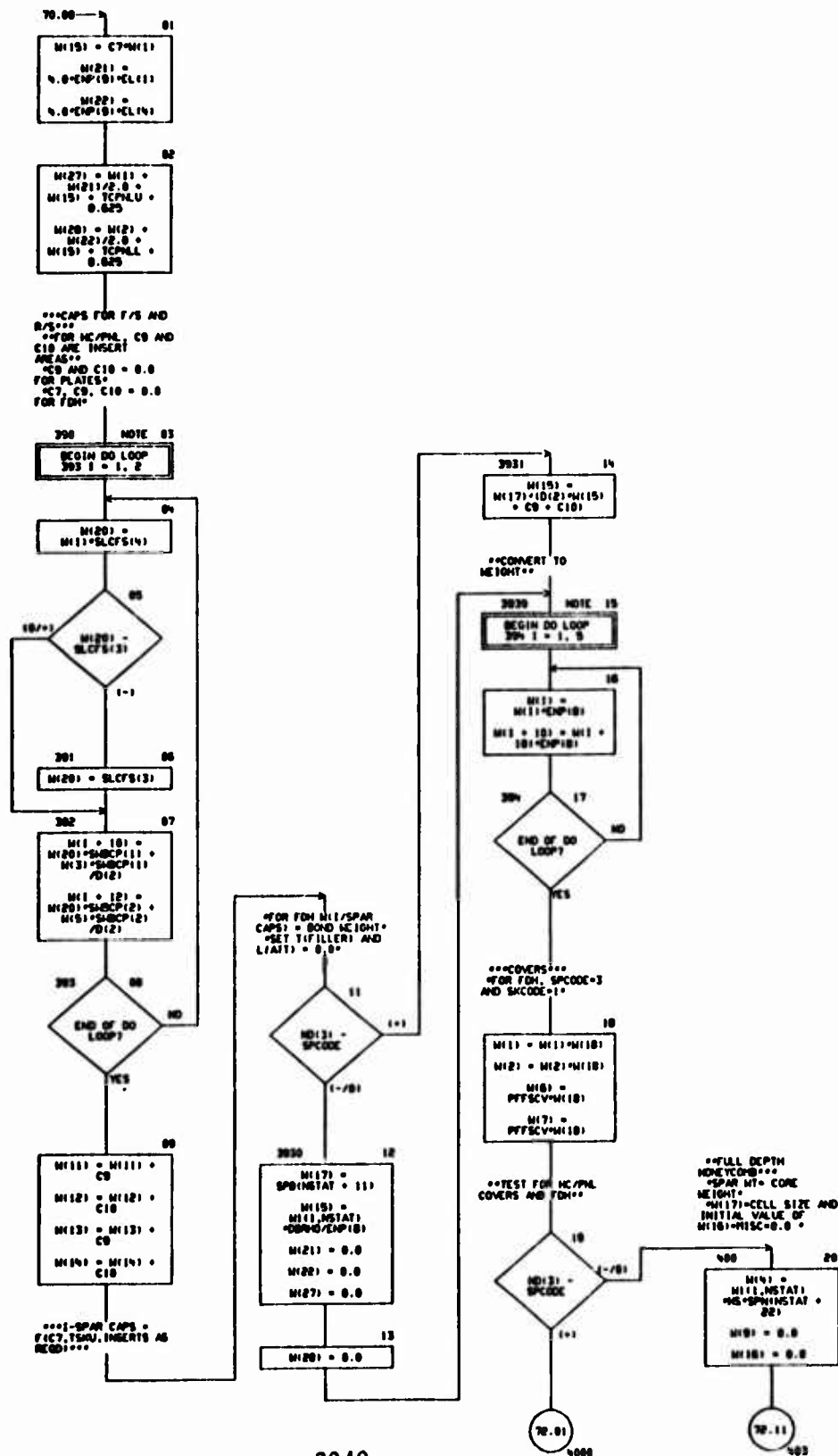


CHART TITLE - SUBROUTINE NEIGHTIME1, NSTAT1





2041

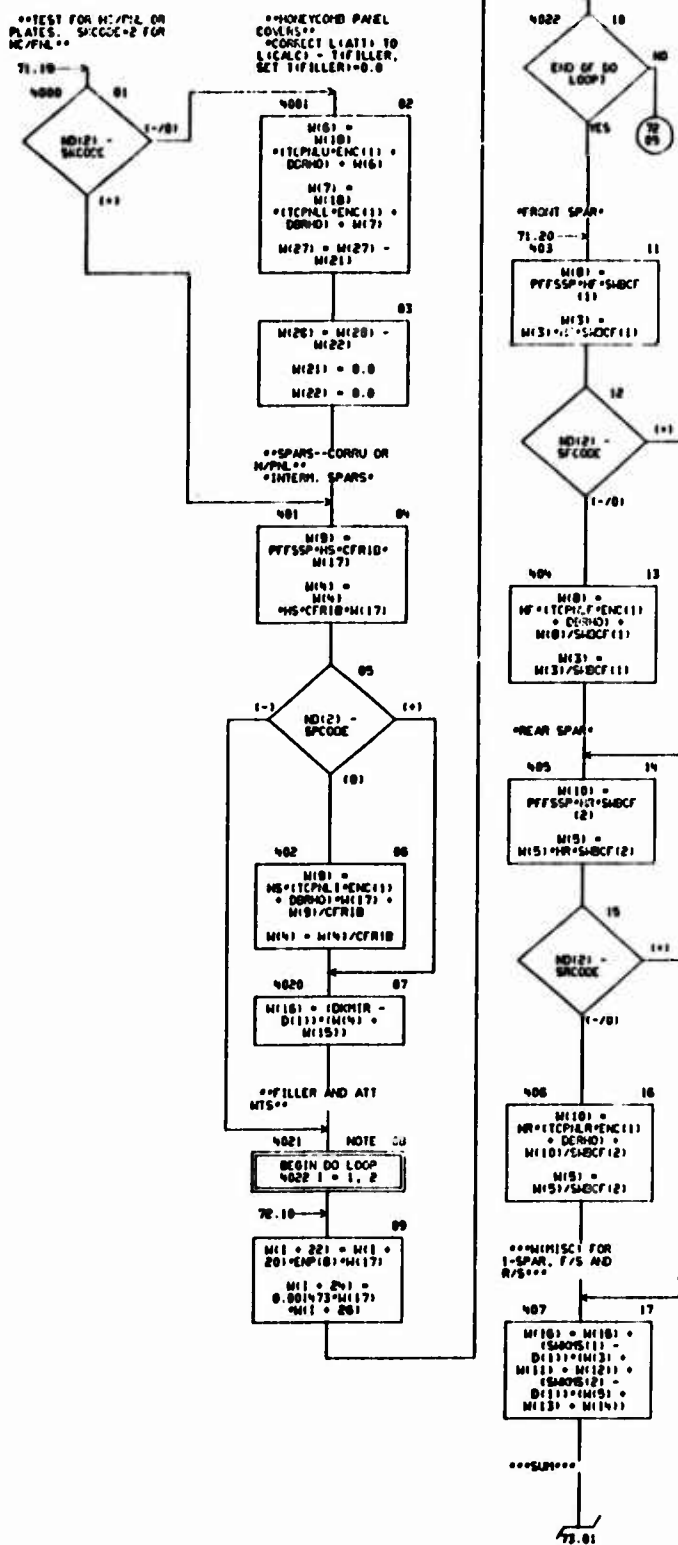


CHART TITLE - SUBROUTINE NEIGHING, NSTAT

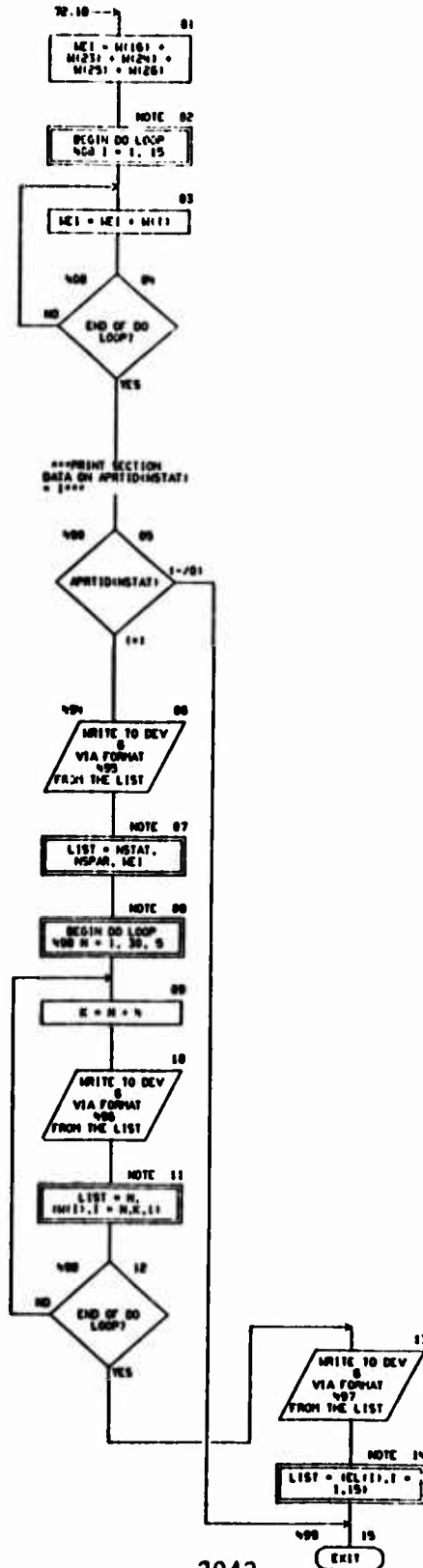


CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T101001
DIMENSION D1200(1),CT1204(1),ND1100(1),
EMP1(1),ET0101(1),ENC1(1),EL11(1),
M130(1),
SLCFS1(1),S10CP1(1),S10MS1(1),S10CF1(1),
SF013(1),SF0133(1),
APRT101(1),
M112(1),CNT13(1)
EQUIVALENCE ID1(1),T1206(1),ICT1(1),T1712(1),ID1(1),T1612(1),
IEMP1(1),D1115(1),IENH1(1),D1116(1),IEN1(1),CT1204(1),
IEL1(1),T1130(1),ICNT1(1),T1154(1),IFFFSOV,CT1204(1),
IFFFSOV,CT1204(1),ICFR10,D1404(1),ICFR10,D1400(1),ISICCF1(1),D1427(1),
ITCPHLV,CNT120(1),ITCPHLL,CNT130(1),ITCPHL1,CNT131(1),
ITCPHLF,CNT132(1),ITCPHLR,CNT133(1),IC4,CNT114(1),INSPAR,CNT121(1),
M15,CNT124(1),M1,CNT125(1),M1,CNT126(1),
ISFCODE,ND145(1),ISACODE,ND146(1),
M11(1),CT1100(1),
ISFCODE,ND142(1),ISFCODE,ND143(1),
ICB,CNT134(1),IC10,CNT135(1),IC7,CNT122(1),ID121R,D124(1),
ISLCFS1(1),D1147(1),IS10CP1(1),D1423(1),IS10MS1(1),D1410(1),
ISPB1(1),T1123(1),ISPH1(1),T11205(1),
IAPRT101(1),T1107(1)
INTEGER SPCODE,SACODE
INTEGER SFCODE,SACODE
REAL NSPAR
405 FORMAT (24H0 ***EIGH SUEP -- STA,13,BH NSPAR=,F7.1,BH MT/IN=,
406 FB.4,M1***, /6H0 M 1
406 FORMAT (3X,12,2X,SF12.4)
407 FORMAT (12H0 EL11-15)=,3F5.1,2X,3F5.1,2X,3F5.1,2X,3F5.1,2X,3F5.1,2X,3F5.1)

```

06/14/76

AUTOFLOW CHART SET - SIZER MIND AND EFFERAGE NIDLE - PAGE 75

CHART TITLE - INTRODUCTORY COZENTS

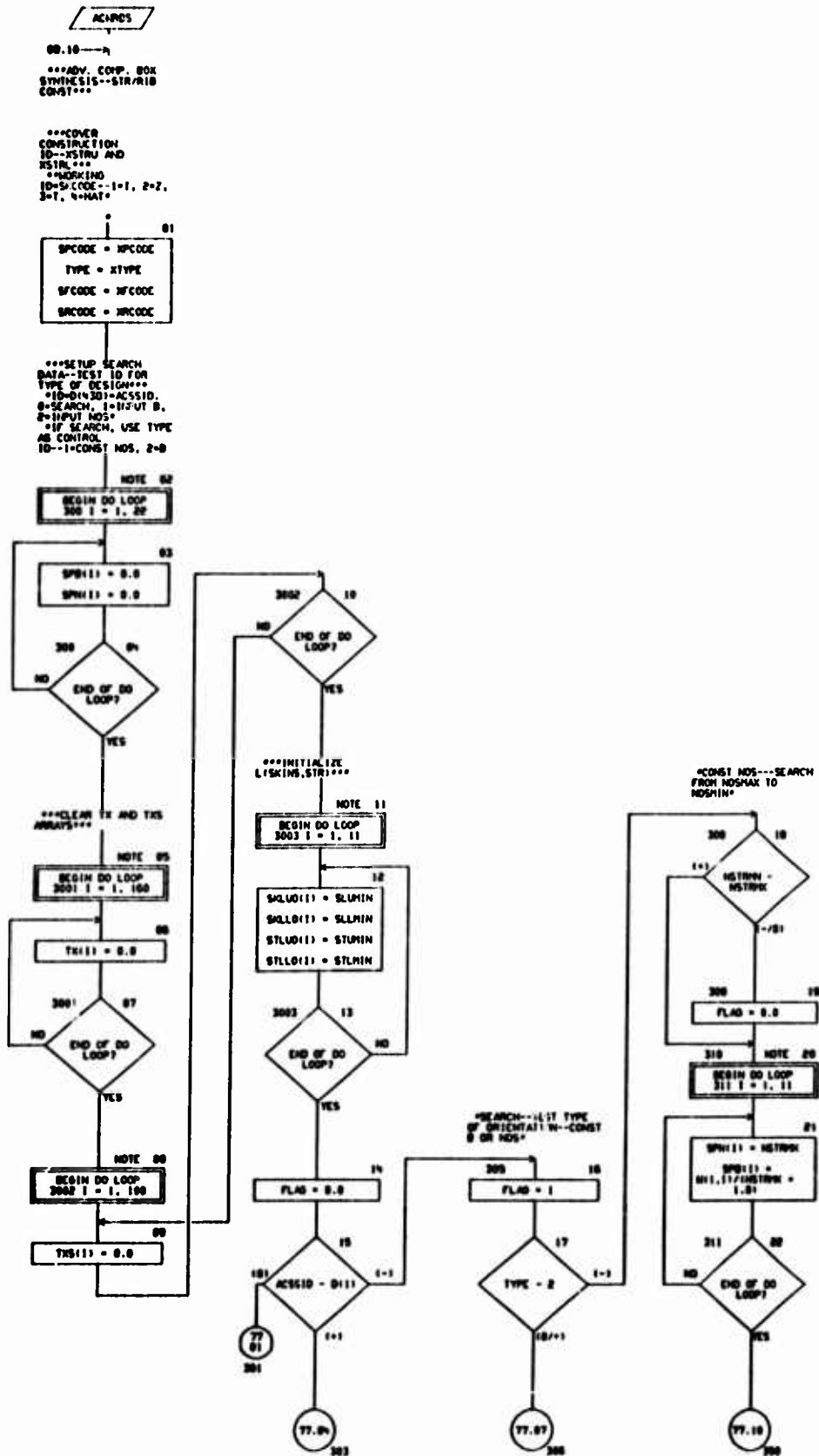
\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACTUS\*\*\*\*\*

\*\*\*\*\*TORQUE-BOX SYNTHESIS - ADV. COMP. ANALYSIS\*\*\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE ACNRS



```

graph TD
    subgraph INPUT
        IN1[INPUT NOS] --> 76.10
        76.10 --> 301
        301 --> 302
        302 --> 303
        303 --> 304
        304 --> 305
        305 --> 306
        306 --> 307
        307 --> 308
        308 --> 309
        309 --> 310
        310 --> 311
        311 --> 312
        312 --> 313
    end

    subgraph SEARCH
        313 --> 314
        314 --> 315
        315 --> 316
        316 --> 317
        317 --> 318
        318 --> 319
        319 --> 320
        320 --> 321
        321 --> 322
        322 --> 323
        323 --> 324
        324 --> 325
        325 --> 326
        326 --> 327
        327 --> 328
        328 --> 329
        329 --> 330
        330 --> 331
        331 --> 332
        332 --> 333
        333 --> 334
        334 --> 335
        335 --> 336
        336 --> 337
        337 --> 338
        338 --> 339
        339 --> 340
        340 --> 341
        341 --> 342
        342 --> 343
        343 --> 344
        344 --> 345
        345 --> 346
        346 --> 347
        347 --> 348
        348 --> 349
        349 --> 350
        350 --> 351
        351 --> 352
        352 --> 353
        353 --> 354
        354 --> 355
        355 --> 356
        356 --> 357
        357 --> 358
        358 --> 359
        359 --> 360
        360 --> 361
        361 --> 362
        362 --> 363
        363 --> 364
        364 --> 365
        365 --> 366
        366 --> 367
        367 --> 368
        368 --> 369
        369 --> 370
        370 --> 371
        371 --> 372
        372 --> 373
        373 --> 374
        374 --> 375
        375 --> 376
        376 --> 377
        377 --> 378
        378 --> 379
        379 --> 380
        380 --> 381
        381 --> 382
        382 --> 383
        383 --> 384
        384 --> 385
        385 --> 386
        386 --> 387
        387 --> 388
        388 --> 389
        389 --> 390
        390 --> 391
        391 --> 392
        392 --> 393
        393 --> 394
        394 --> 395
        395 --> 396
        396 --> 397
        397 --> 398
        398 --> 399
        399 --> 400
        400 --> 401
        401 --> 402
        402 --> 403
        403 --> 404
        404 --> 405
        405 --> 406
        406 --> 407
        407 --> 408
        408 --> 409
        409 --> 410
        410 --> 411
        411 --> 412
        412 --> 413
        413 --> 414
        414 --> 415
        415 --> 416
        416 --> 417
        417 --> 418
        418 --> 419
        419 --> 420
        420 --> 421
        421 --> 422
        422 --> 423
        423 --> 424
        424 --> 425
        425 --> 426
        426 --> 427
        427 --> 428
        428 --> 429
        429 --> 430
        430 --> 431
        431 --> 432
        432 --> 433
        433 --> 434
        434 --> 435
        435 --> 436
        436 --> 437
        437 --> 438
        438 --> 439
        439 --> 440
        440 --> 441
        441 --> 442
        442 --> 443
        443 --> 444
        444 --> 445
        445 --> 446
        446 --> 447
        447 --> 448
        448 --> 449
        449 --> 450
        450 --> 451
        451 --> 452
        452 --> 453
        453 --> 454
        454 --> 455
        455 --> 456
        456 --> 457
        457 --> 458
        458 --> 459
        459 --> 460
        460 --> 461
        461 --> 462
        462 --> 463
        463 --> 464
        464 --> 465
        465 --> 466
        466 --> 467
        467 --> 468
        468 --> 469
        469 --> 470
        470 --> 471
        471 --> 472
        472 --> 473
        473 --> 474
        474 --> 475
        475 --> 476
        476 --> 477
        477 --> 478
        478 --> 479
        479 --> 480
        480 --> 481
        481 --> 482
        482 --> 483
        483 --> 484
        484 --> 485
        485 --> 486
        486 --> 487
        487 --> 488
        488 --> 489
        489 --> 490
        490 --> 491
        491 --> 492
        492 --> 493
        493 --> 494
        494 --> 495
        495 --> 496
        496 --> 497
        497 --> 498
        498 --> 499
        499 --> 500
        500 --> 501
        501 --> 502
        502 --> 503
        503 --> 504
        504 --> 505
        505 --> 506
        506 --> 507
        507 --> 508
        508 --> 509
        509 --> 510
        510 --> 511
        511 --> 512
        512 --> 513
        513 --> 514
        514 --> 515
        515 --> 516
        516 --> 517
        517 --> 518
        518 --> 519
        519 --> 520
        520 --> 521
        521 --> 522
        522 --> 523
        523 --> 524
        524 --> 525
        525 --> 526
        526 --> 527
        527 --> 528
        528 --> 529
        529 --> 530
        530 --> 531
        531 --> 532
        532 --> 533
        533 --> 534
        534 --> 535
        535 --> 536
        536 --> 537
        537 --> 538
        538 --> 539
        539 --> 540
        540 --> 541
        541 --> 542
        542 --> 543
        543 --> 544
        544 --> 545
        545 --> 546
        546 --> 547
        547 --> 548
        548 --> 549
        549 --> 550
        550 --> 551
        551 --> 552
        552 --> 553
        553 --> 554
        554 --> 555
        555 --> 556
        556 --> 557
        557 --> 558
        558 --> 559
        559 --> 560
        560 --> 561
        561 --> 562
        562 --> 563
        563 --> 564
        564 --> 565
        565 --> 566
        566 --> 567
        567 --> 568
        568 --> 569
        569 --> 570
        570 --> 571
        571 --> 572
        572 --> 573
        573 --> 574
        574 --> 575
        575 -->
```

CHART TITLE - SHEROUTINE ACHRS5

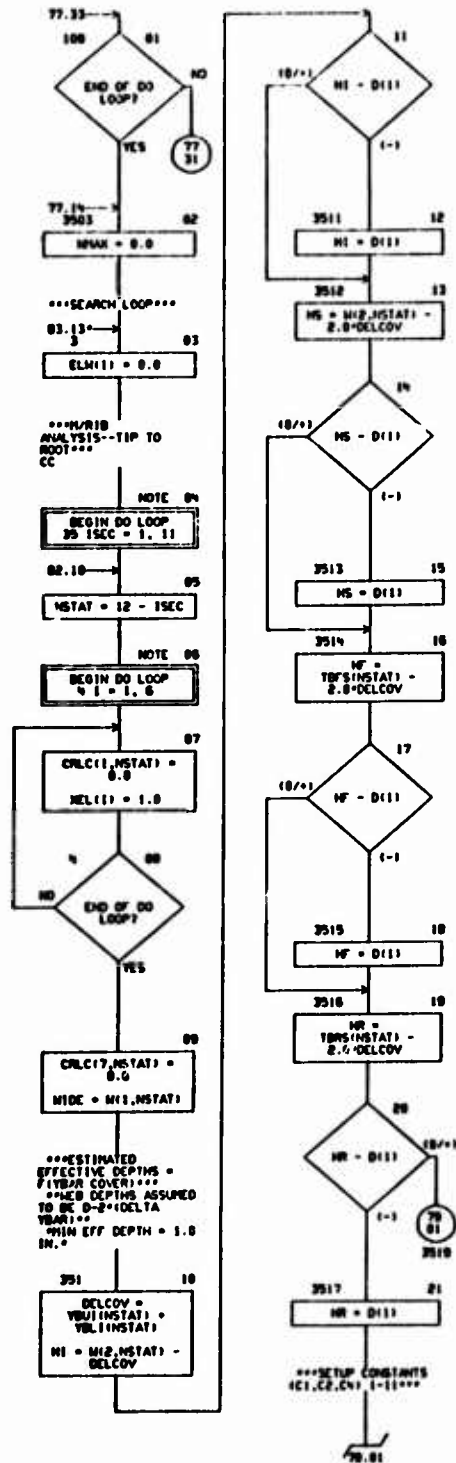


CHART TITLE - SUBROUTINE ACMPUS

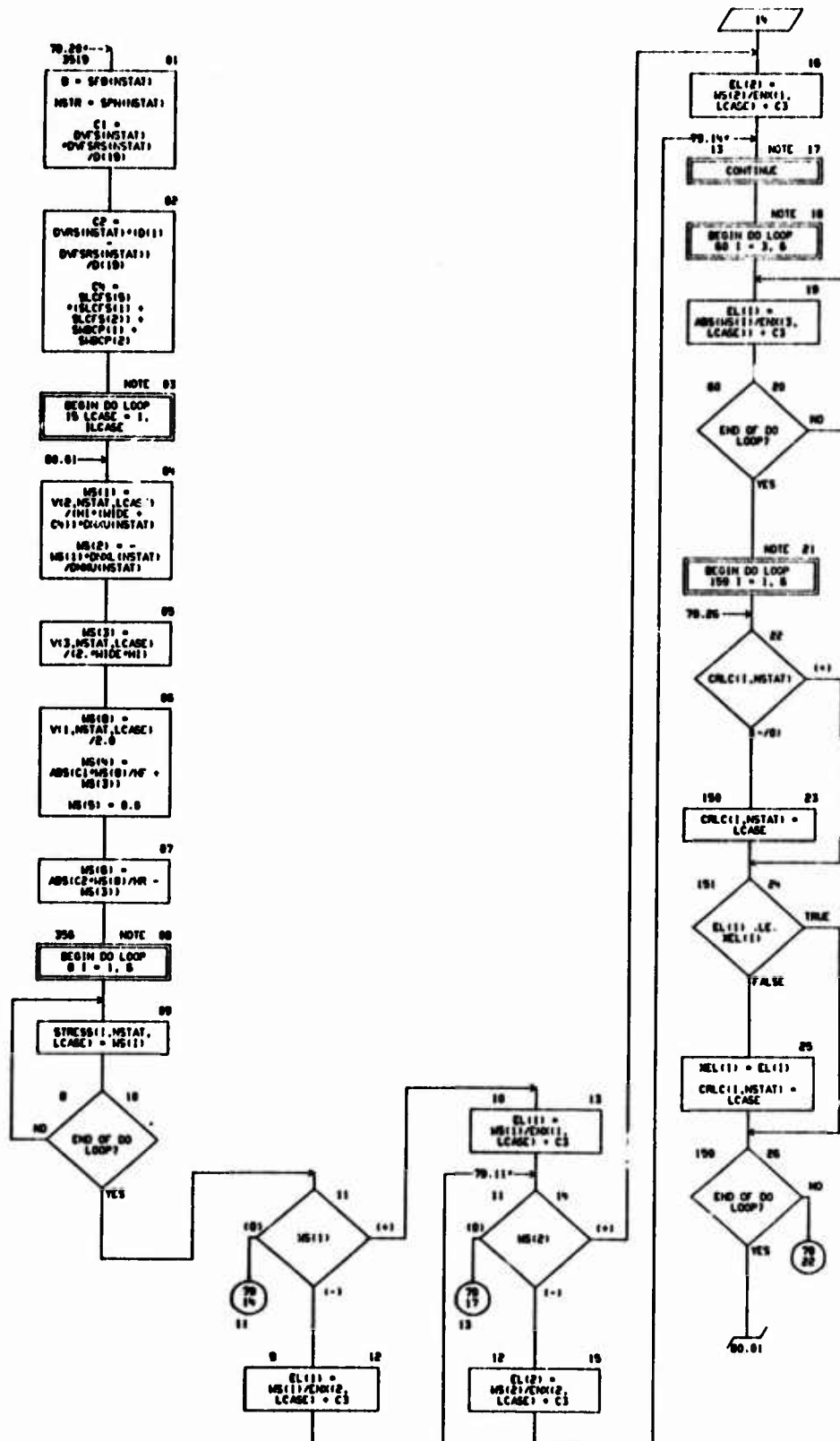




CHART TITLE - SUBROUTINE ACIPBS

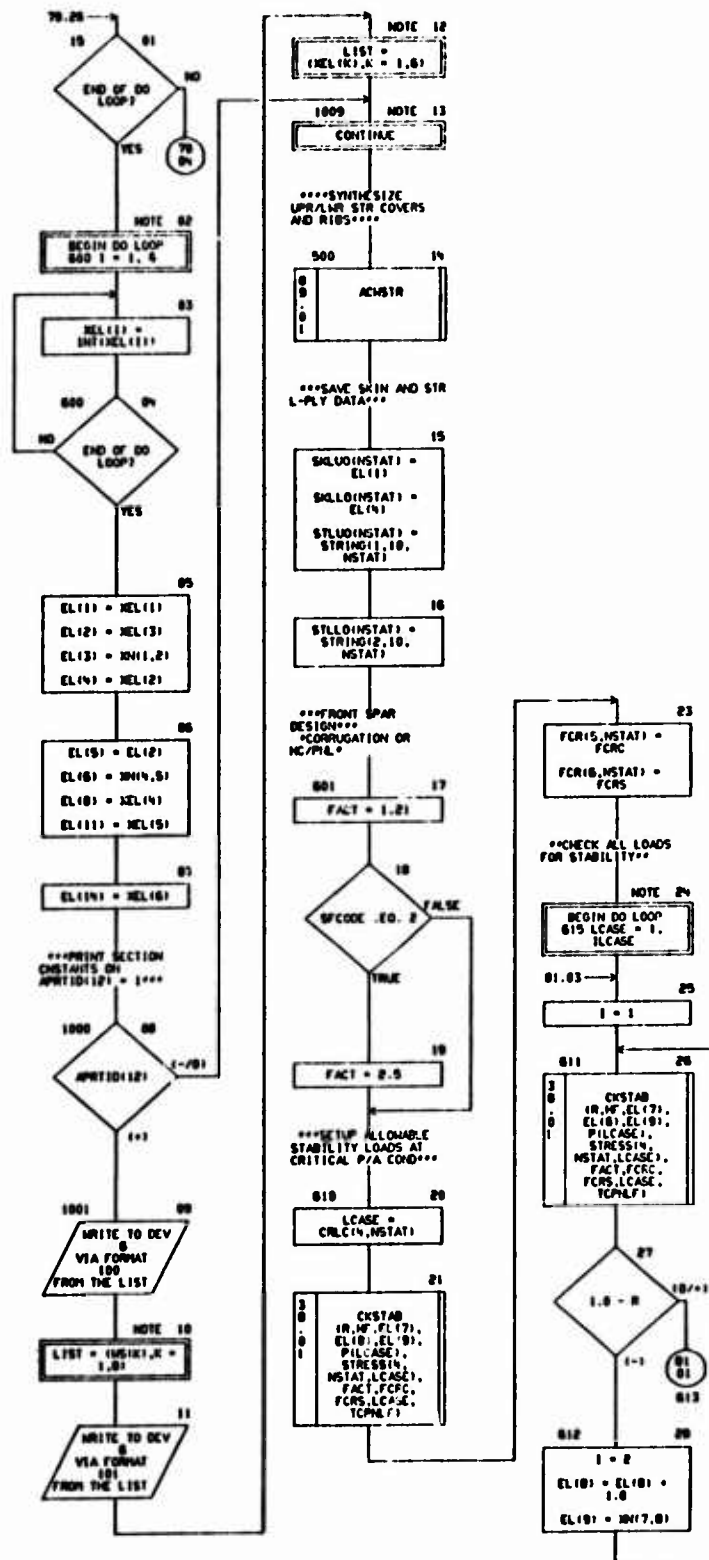


CHART TITLE - SUBROUTINE ACSES

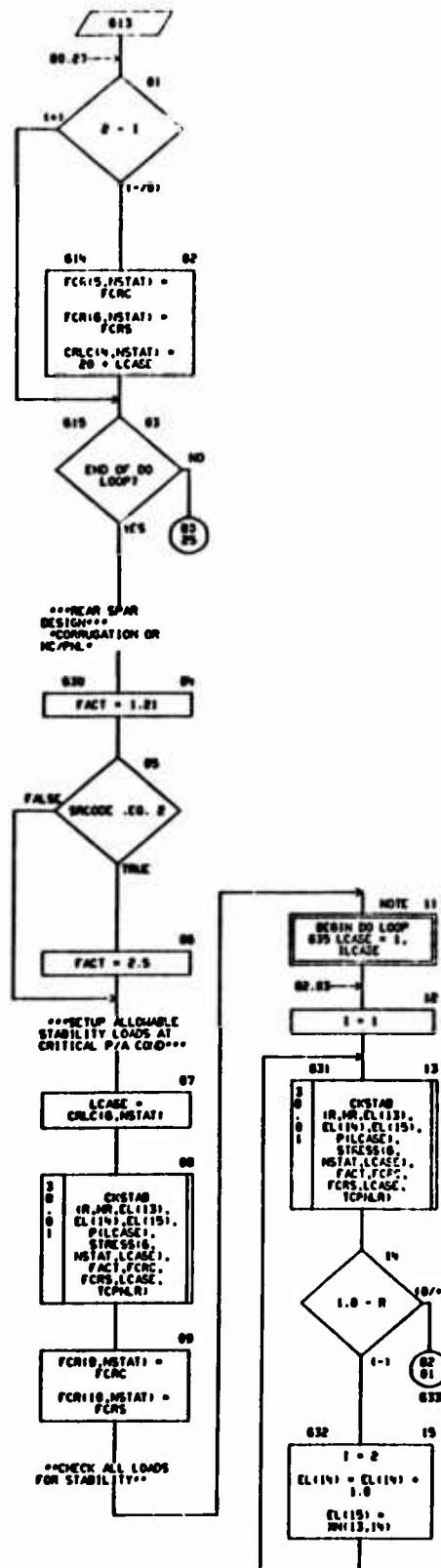


CHART TITLE - SURVEILLANCE ALARMS

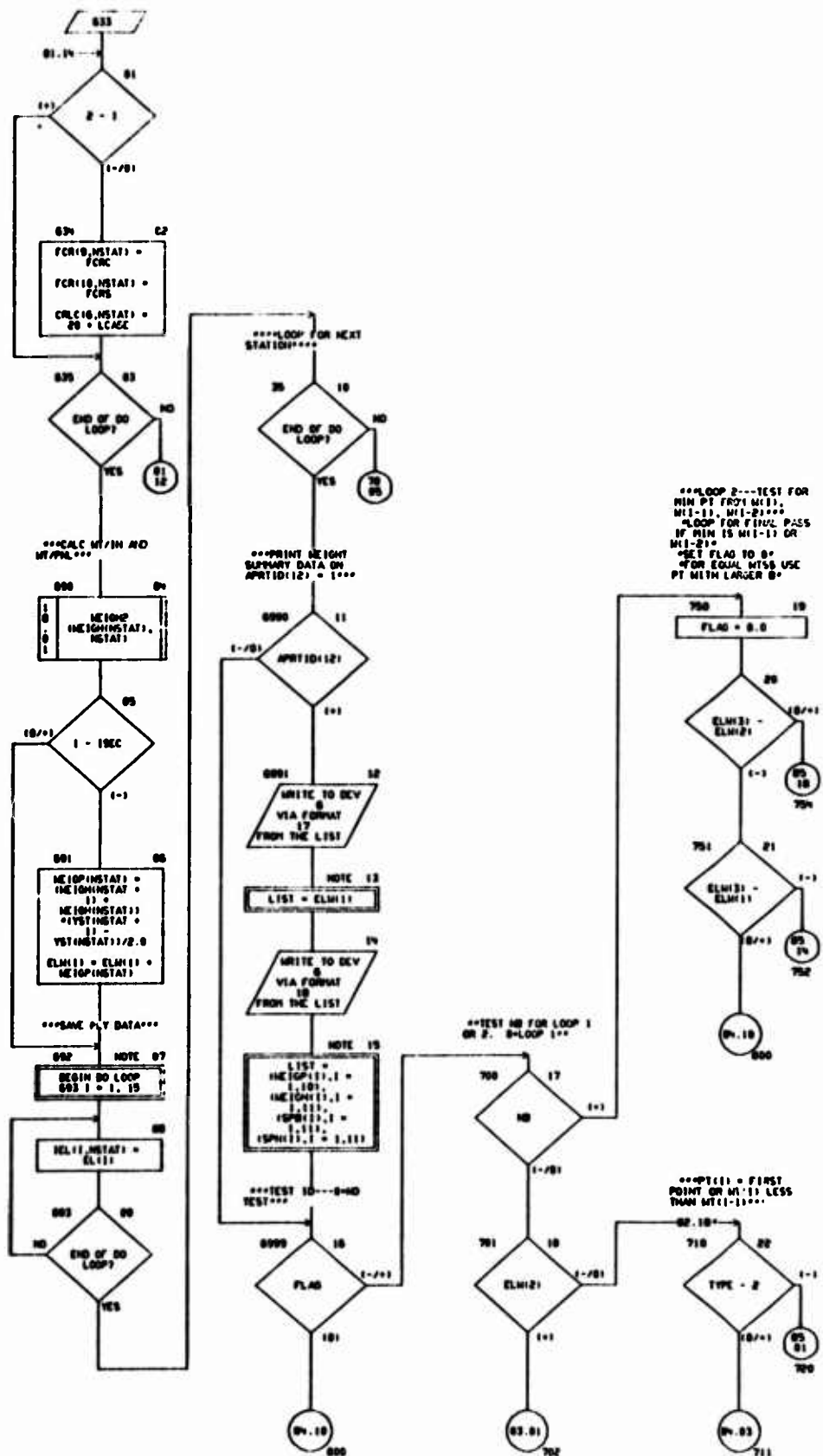


CHART TITLE - SIGNATURE ACRES

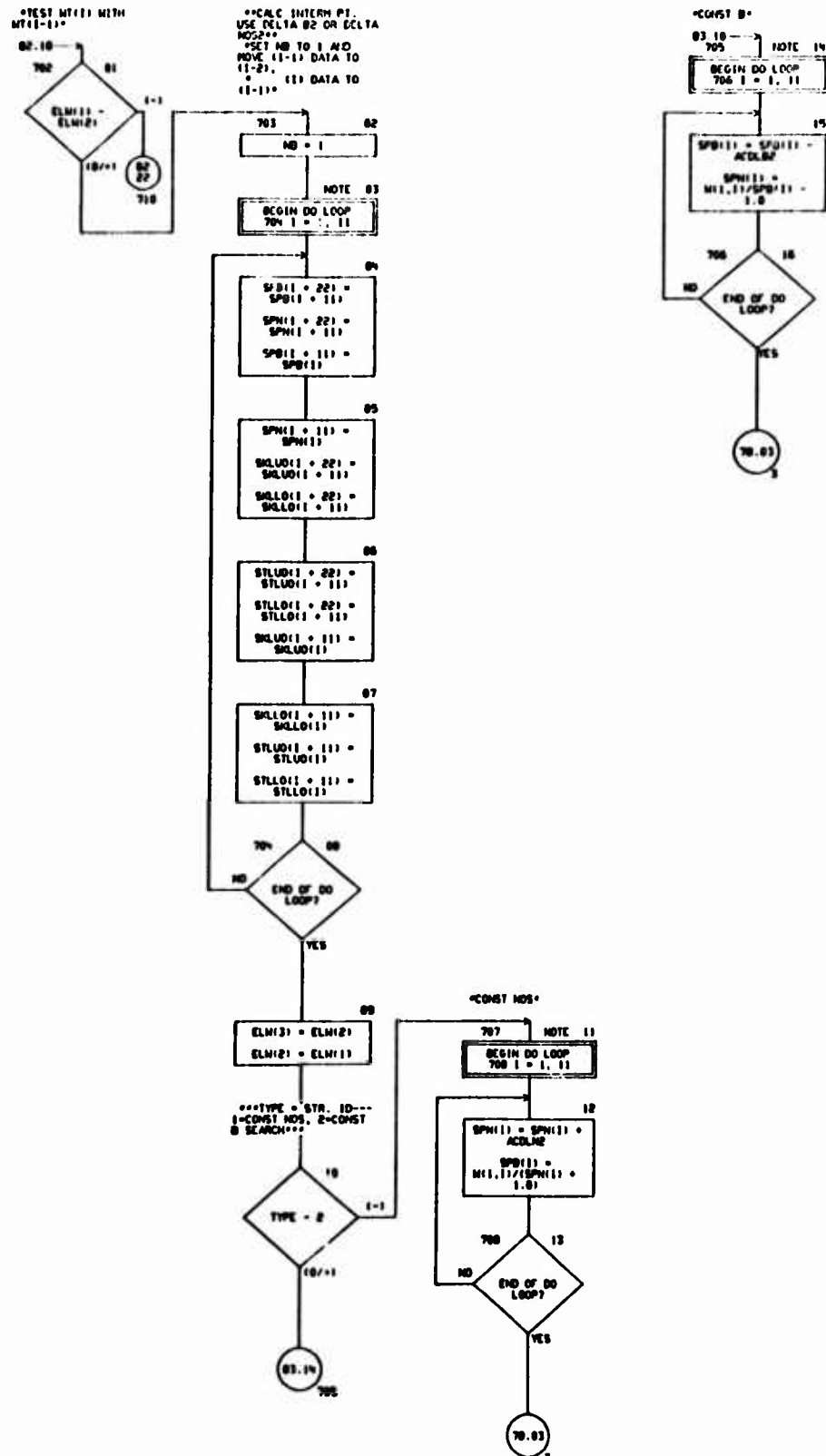


CHART TITLE - SLEEPWING ALLOYS

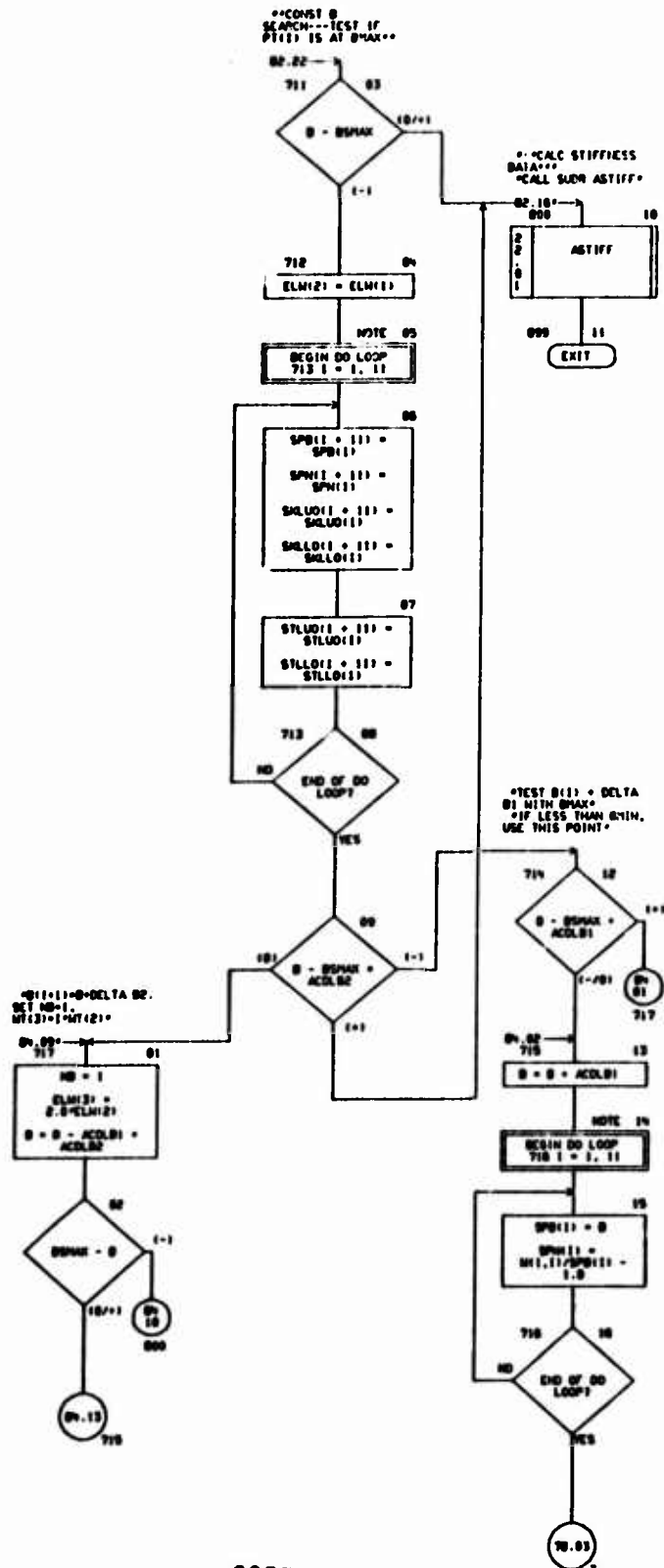


CHART TITLE - SLEDOUTLINE AC/FBI

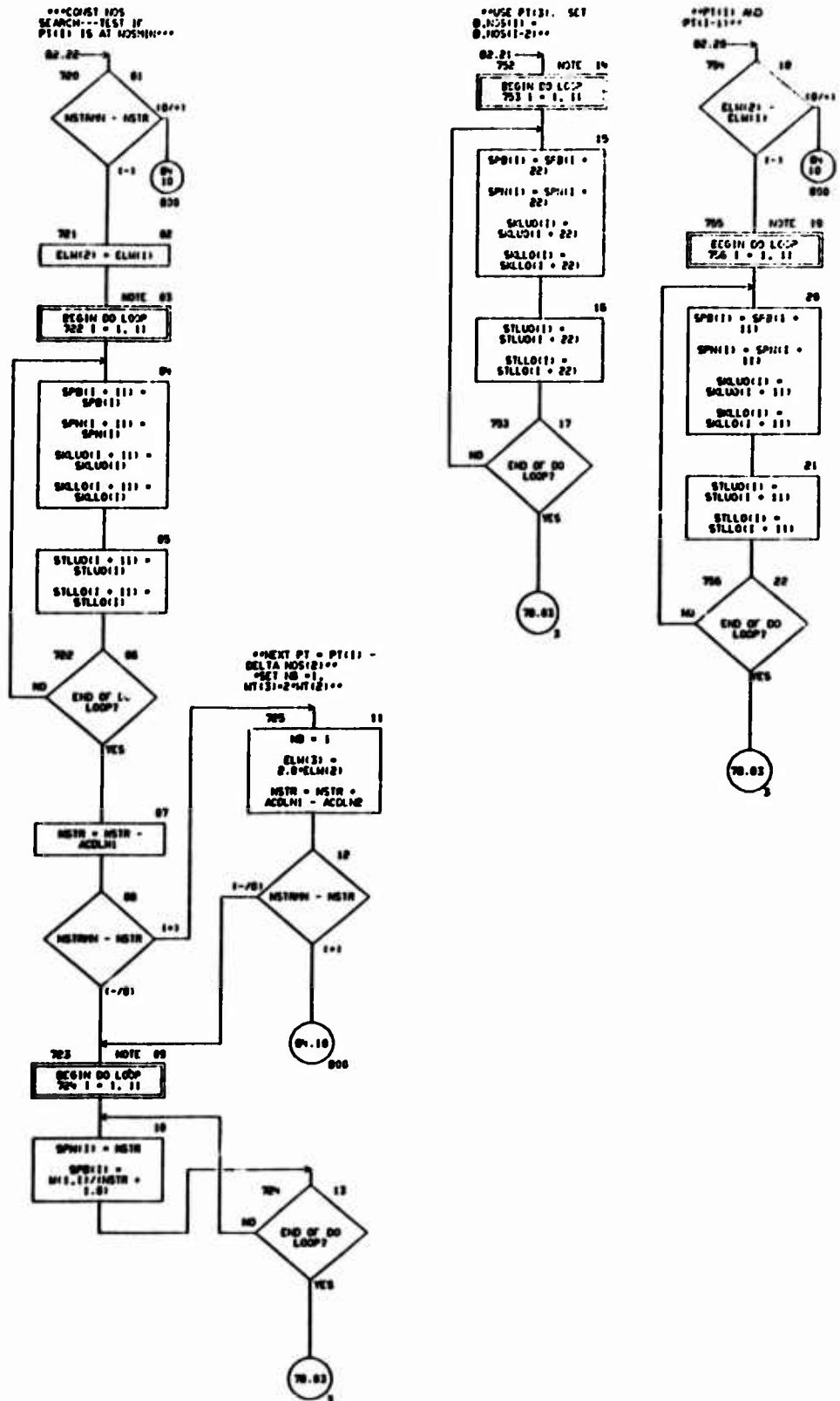


CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(9169)
DIMENSION D(200),CD(2000),ND(100),TH(900),CT(2048),
EMP(9),ENH(6),CNT(6),
END(5,P0),ENK(3,20),EL(15),NS(8),ENC(3),ELM(32),MEL(10),
P(20),MEIGH(11),SPCRUM(11),FCR(10,11),IEL(15,11),
DWS(11),CWS(11),DFSRS(11),SLCFS(5),
TWS(11),TWS(11),YST(11),
SPH(33),SPH(33),DCBS(11),DCMS(11),MECP(10),
THICK(4),SKLU(33),SKLO(33),STLU(33),STLO(33),
W(2,11),V(3,11,P0),STRESS(6,11,20),CALC(7,11),STRMS(2,10,11),
YBU(11),YC(11),
DOP2(4),DOP3(4),
APRT(10,12),
BMBP(2),DMM(11),DML(11),
TX(100),TX(100)
EQUIVALENCE (D(1),T(2061)),(CD(1),T(4121)),(ND(1),T(6121)),
(TH(1),T(6221)),(CT(1),T(7121)),(THICK(1),T(1016)),
(EMP(1),D(1155)),(ENH(1),D(1184)),
(ENH(1),TH(601)),(ENK(1,1),TH(701)),(ENC(1),CT(2043)),
(EL(1),T(1300)),(NS(1),T(1315)),(CNT(1),T(1541)),
(STRMS(1,1,1),T(1676)),(MEIGH(1),T(1655)),(SPCRUM(1),T(1632)),
(CALC(1,1),T(1660)),(P(1),T(1896)),(IEL(1,1),TH(1)),
(V(1,1),CT(1321)),(W(1,1),CT(1001)),(STRESS(1,1),CT(1)),
(FCR(1,1),T(1100)),(ELM(1),T(1643)),
(ELCASE,ND(41)),(MEL(1),T(1323)),(MECP(1),T(1655)),
(SPCODE,ND(43)),(SF CODE,ND(45)),(SACODE,ND(46)),(SKCODE,ND(42)),
(ITYPE,ND(44)),(MXCODE,CNT(19)),(IMP CODE,CNT(20)),(MFCODE,CNT(27)),
(IXCODE,CNT(26)),(MSTR,CNT(21)),(MSTRU,CNT(11)),(MSTRL,CNT(12)),
(IXTYPE,CNT(10)),(BMHIN,CNT(3)),
(BMMAK,CNT(4)),(BMHIN,CNT(5)),(BMMAK,CNT(6)),(BMHIN,CNT(7)),
(ICI,CNT(11)),(IC2,CNT(12)),(ICS,CNT(13)),(IC4,CNT(14)),
(MSTRMM,CNT(17)),(MSTRUK,CNT(18)),(MS,CNT(24)),
(MF,CNT(25)),(MM,CNT(26)),
(TCPML,CNT(31)),(TCPMLF,CNT(32)),(TCPMLR,CNT(33))
EQUIVALENCE (SP(1),T(1232)),(SPN(1),T(1265)),
(OCBS(1),D(1705)),(OCHDS(1),D(1701)),
(TWS(1),T(153)),(TWS(1),T(1105)),(YST(1),T(511)),
(DWS(1),D(1842)),(DWS(1),D(853)),(DWSRS(1),D(1924)),
(ELCFS(1),D(1470)),(ACSS(1),D(430)),
(YBU(1),T(679)),(YBL(1),T(680)),
(DOP2(1),D(1367)),(DOP3(1),D(1371)),
(ACDLN1,DOP2(3)),(ACDLN2,DOP2(4)),
(ACDLB1,DOP3(3)),(ACDLB2,DOP3(4))
, (TX(1),CD(1)),(TX(1),CD(161)),(BS,TX(30)),(WIDE,TX(31))
, (STLU(1),CD(261)),(SKLO(1),CD(294)),(STLU(1),CD(327))
, (STLO(1),CD(368)),(STLUMIN,CNT(8)),(STLLMIN,CNT(9))
, (STUMIN,CNT(15)),(STLMIN,CNT(16)),(B,TX(30))
, (BMBP(1),D(1823)),(DMM(1),D(193)),(DML(1),D(1842))
, (APRT(1),T(1070)),(MMAK,ND(31)),(MSTAT,ND(95)),(ISEC,ND(62))
INTEGER SPCODE,SKCODE,TYPE
INTEGER SF CODE,SKCODE
INTEGER FLAG
REAL MSTR
REAL MSTRMM,MSTRUK,IEL
100 FORMAT (7H) MS=,4E16.0,7X,4E16.0)
101 FORMAT (7H) MEL=,8E16.0)
102 FORMAT (7H) EMP=,5E16.0,7X,4E16.0)
103 FORMAT (8H) END)
104 FORMAT (8H) ENK)
105 FORMAT (8H) CNT)
106 FORMAT (1H ,3X,13,5E16.0)
17 FORMAT (15H) CALC MEIGH=F10.4)
18 FORMAT (10H) MPAL= 1079.3,10H) MT/IN= 1179.3,10H) B= 117

```

06/14/74

AUTOFLOW CHART SET - SHEEP WING AND ENTERPAGE MODULE - PAGE 07

CHART TITLE - NON-PROCEDURAL STATEMENTS

0.3.1040 NOS= 1100.3



08/14/79

AUTOFLOW CHART SET - SHEET WING AND ENGINE NOSE - PAGE 60

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*SUBROUTINE ACMSR\*\*\*\*

\*\*\*SKIN-STRIP SECTION OPTIMIZATION - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

CHART TITLE - S-ROUTINE ACNSTR

ACNSTR

00.14 →

\*\*\*SUB FOR COVER  
AND RCD SIZING-M/RIB  
DESIGN\*\*\*

\*\*\*M/RIB STATION  
ANALYSIS -- TIP TO  
ROOT\*\*\*

\*\*\*SETUP INITIAL EST  
FOR SKIN AND STR  
L-PLIES\*\*\*

\*\*\*SELECT STATION  
STARTING L-PLIES AS  
LARGER OF--

- 1. FINAL SKIN/STR  
L-PLIES FOR EST PASS
- 2. CURRENT PASS  
STATION--11 FINAL  
L-PLIES LESS 1 OR IF  
CURRENT TOTAL  
ST PLIES LESS THAN  
OUTDO

START AT BASIC  
MIN L-PLIES FOR  
CURRENT STATION

3. MIN SPECIFIED  
L-PLIES--SETUP IN  
L-PLY ARRAYS

100

SKINUP =  
SKINUP(STAT)

SKINLN =  
SKINLN(STAT)

STRUPN =  
STRUPN(STAT)

STRLLN =  
STRLLN(STAT)

\*\*\*TEST FOR TIP  
STATION\*\*\*

11 - INSTAT

101

102

\*\*\*INITIAL SKIN DELTA  
L-PLIES = 0.0 FOR TIP  
STATION\*\*\*

101

THS(1) = 0.0

THS(2) = 0.0

102

200

\*\*\*STATIONS 1-10.  
CHECK FOR 0.5% L-PLY  
VALUES FOR  
CURRENT STATION  
STARTING VALUES\*\*\*

00.12

102

SLAD = THS(12) -  
1.0

SLTO = THS(13) -  
1.0

SLDO = THS(14) -  
EL(1)

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

CHART TITLE - SCHEDULE ACWSTR

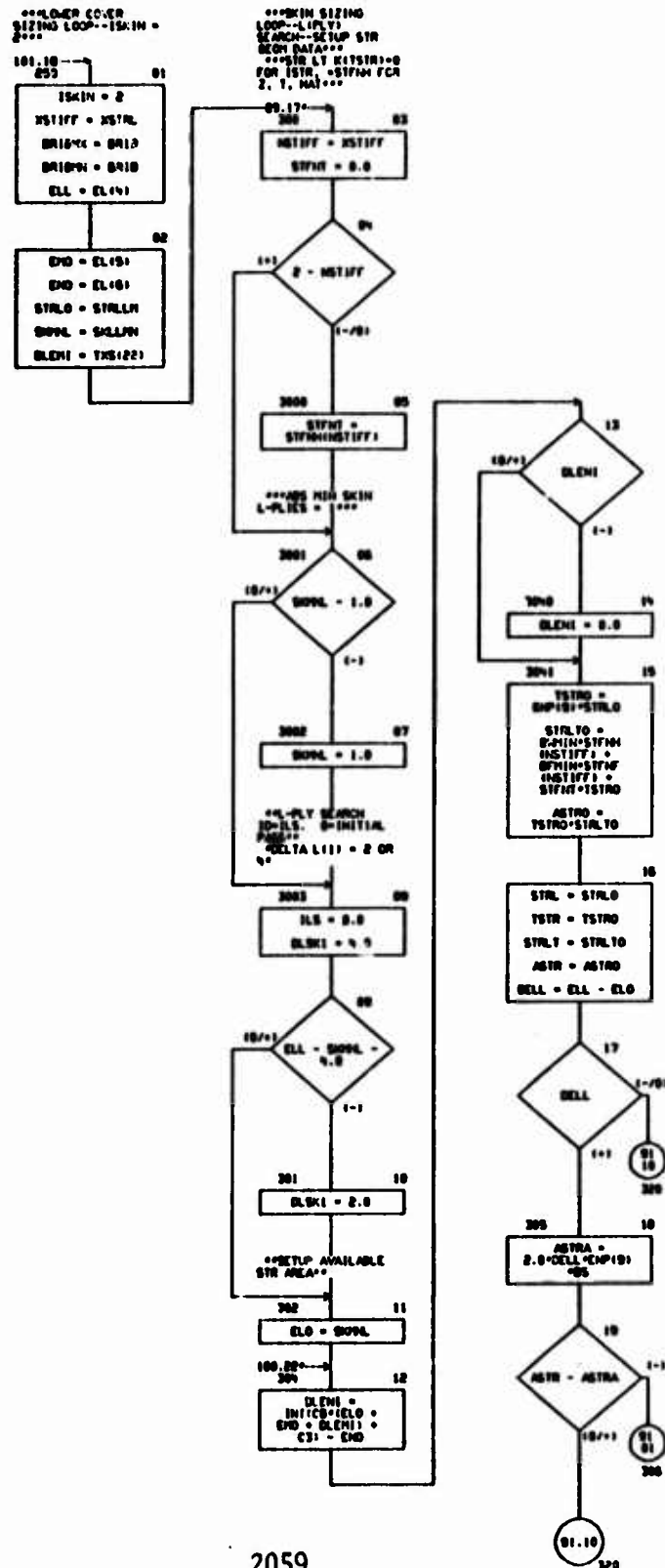


CHART TITLE - SUBROUTINE ACNSTR

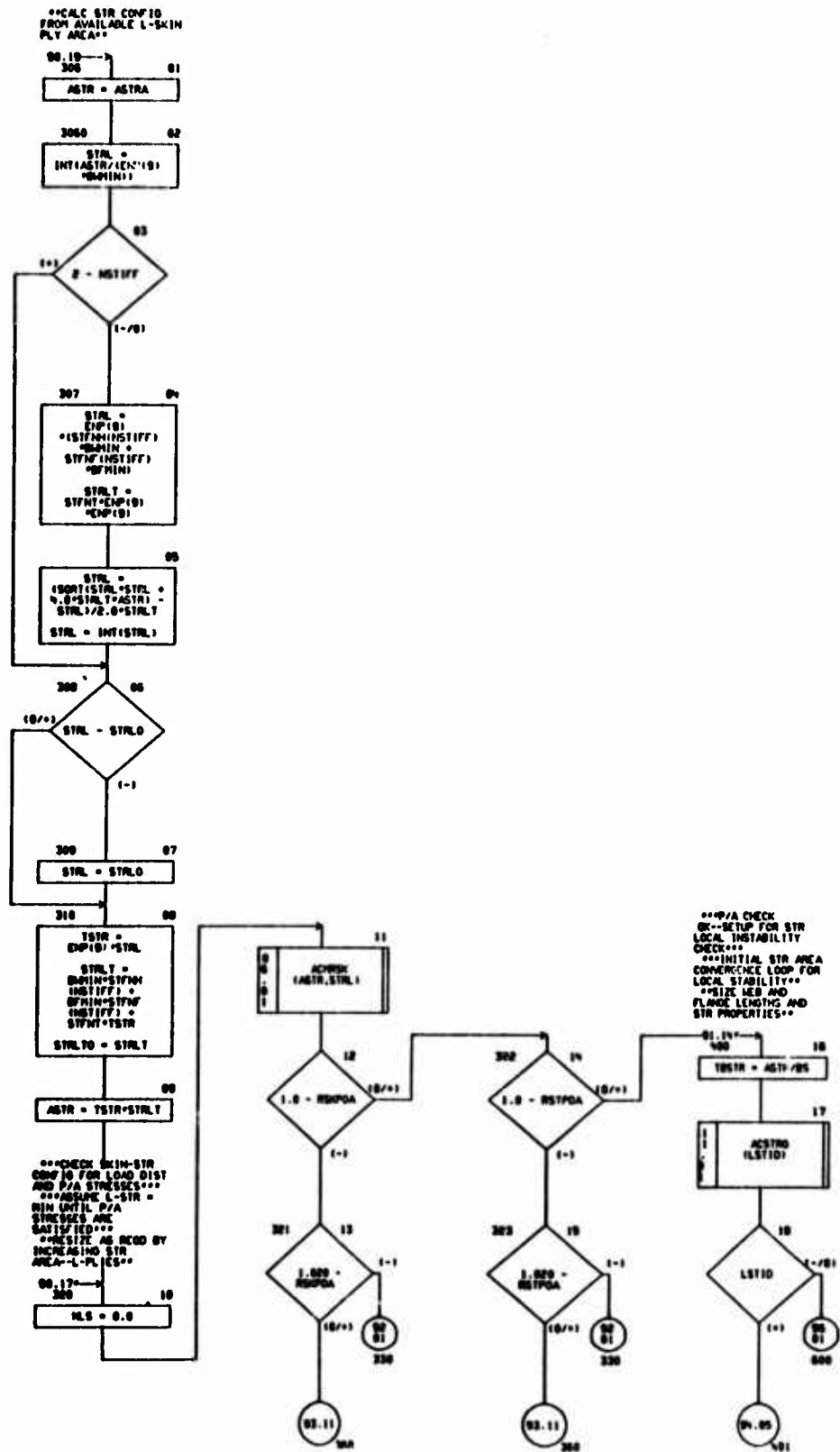
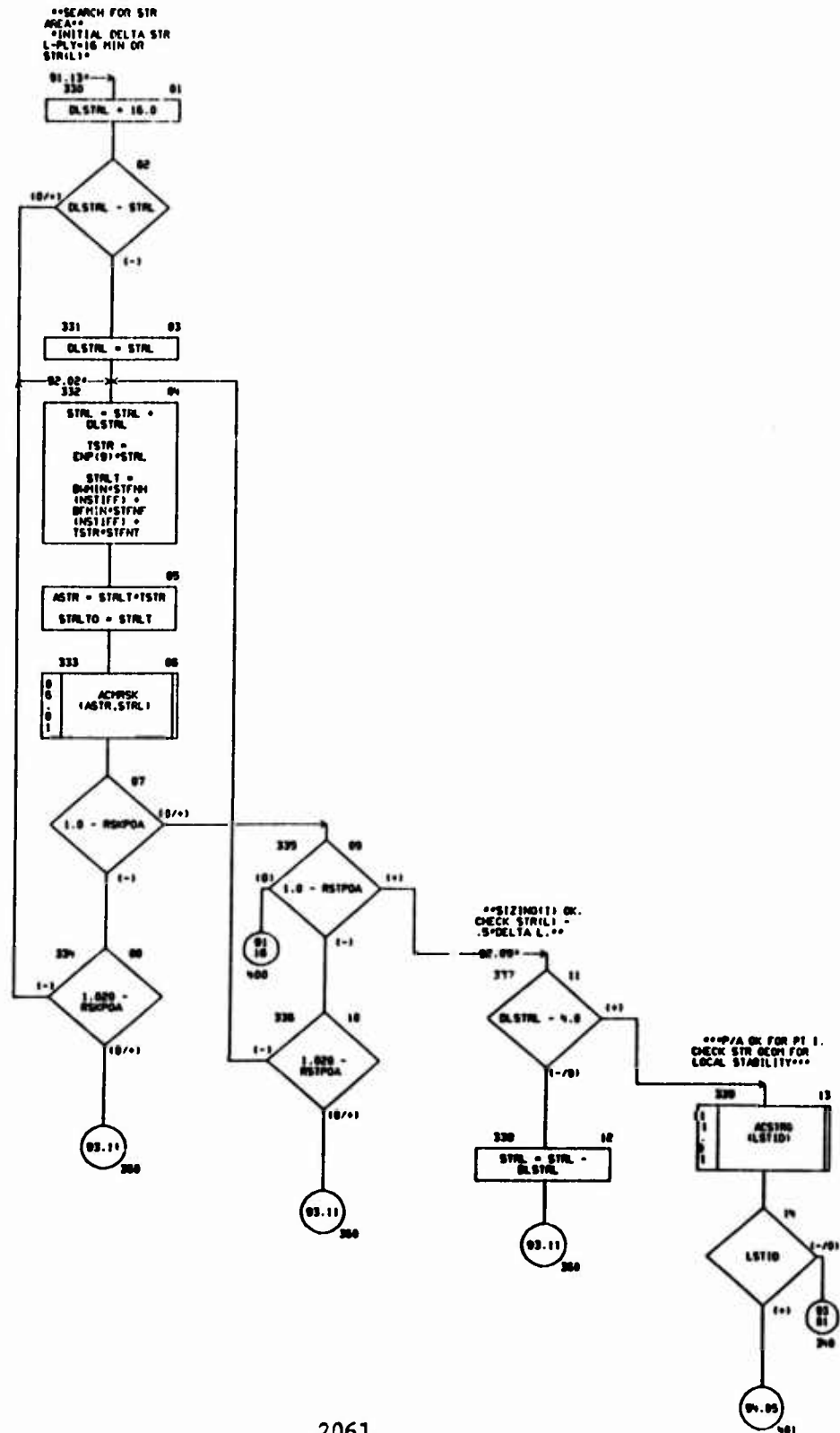


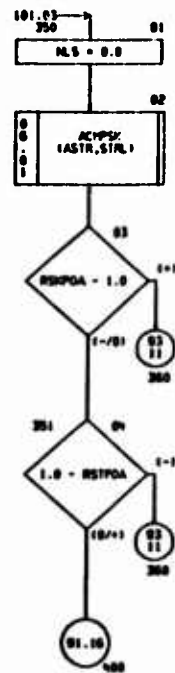
CHART TITLE - SUBROUTINE ACWSTR



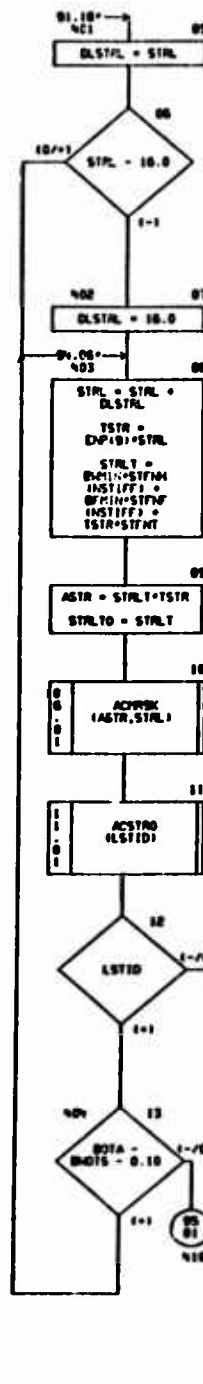
[illegible]

CHART TITLE SUBROUTINE ACNSTR

405 = SEARCH  
CONTROL ID. 0=FIRST  
PASS  
1=RESIZING BY  
L-PLY INCREASE BY 2  
2=RESIZING BY  
L-STR DECREASE BY 1



401 INITIAL DELTA  
L-PLY = 16 CM STR  
L(1)



405 STR OK. CHECK AT  
DELTA L/D

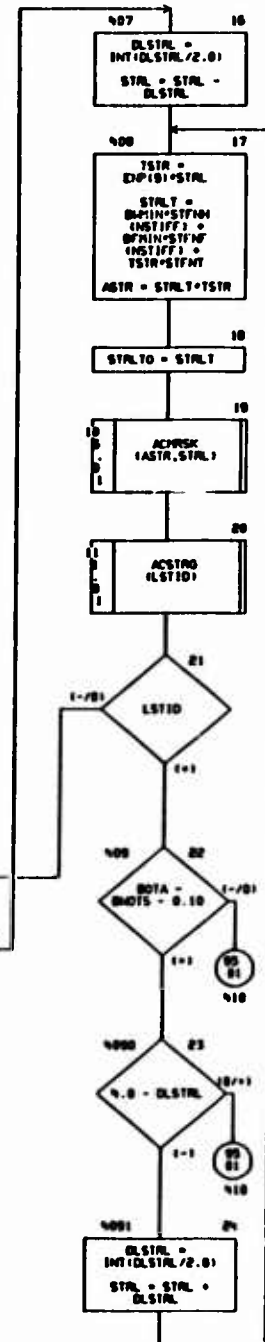
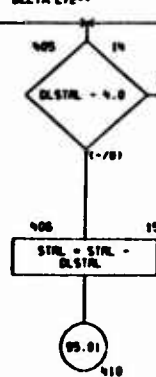


CHART TITLE - SUBROUTINE ACWSTR

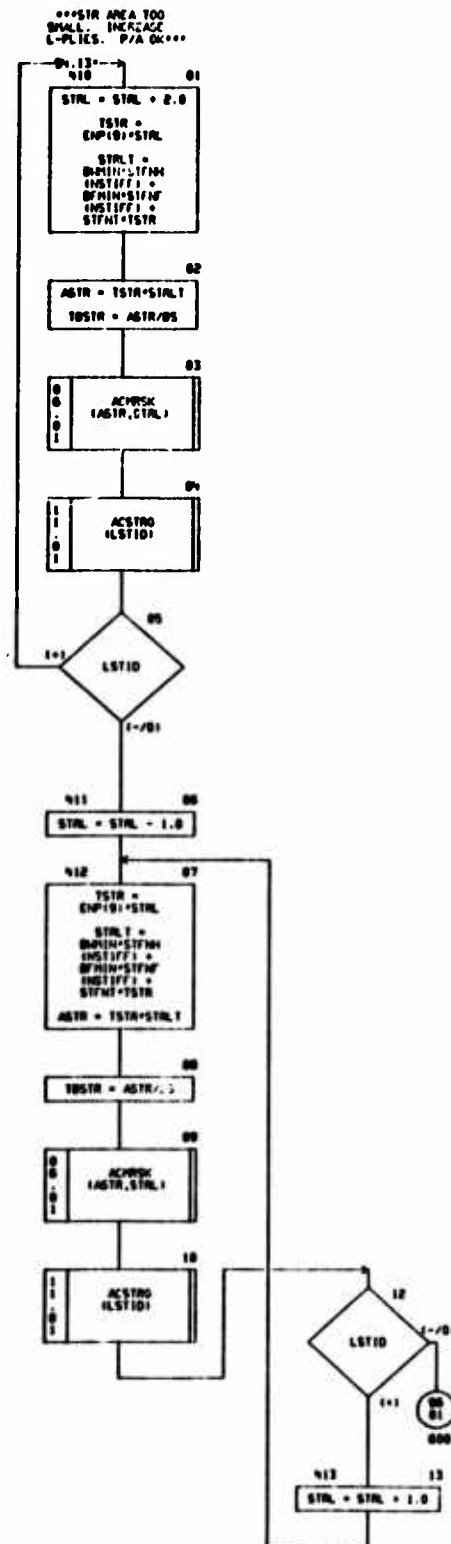
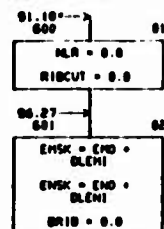


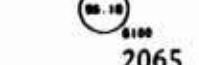
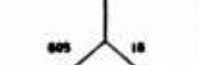
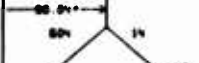
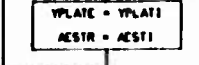
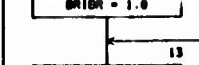
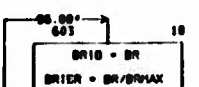
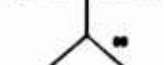
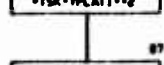
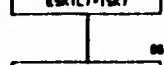
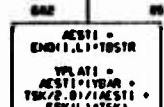
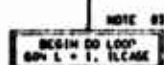


CHART TITLE - SUBROUTINE ACNSTR

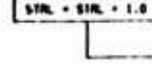
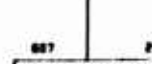
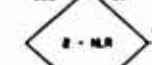
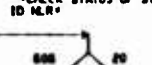
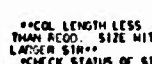
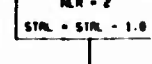
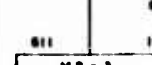
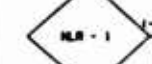
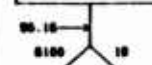
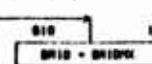
\*\*\*CHECK GENL  
INSTABILITY AND SIZE  
RIBS FOR CRUSHING  
AND COLUMN  
SUPPORT\*\*\*  
\*\*STRINGER AREA  
CONTROL ID=MLR\*\*



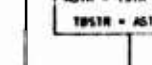
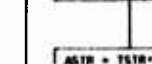
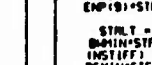
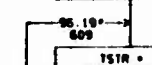
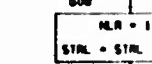
\*\*MIN COL LENGTH FOR  
ALL LOADS\*\*



\*\*COL LENGTH OK.  
CHECK STATUS OF STR  
ID MLR\*\*  
EXIT ON 0 OR 2.  
LOOP ON 1\*\*



\*\*COL LENGTH LESS  
THAN RECD. SIZE WITH  
LARGER STR\*\*  
CHECK STATUS OF STR  
ID MLR



...SIN AREA ON  
DESIGN AIDS FOR  
STRENGTH AND  
STIFFNESS...

••TENSION COVER.  
N-PLIES OF, CHECK  
L-PLIES••



CHART TITLE - SUBROUTINE ACNSTA

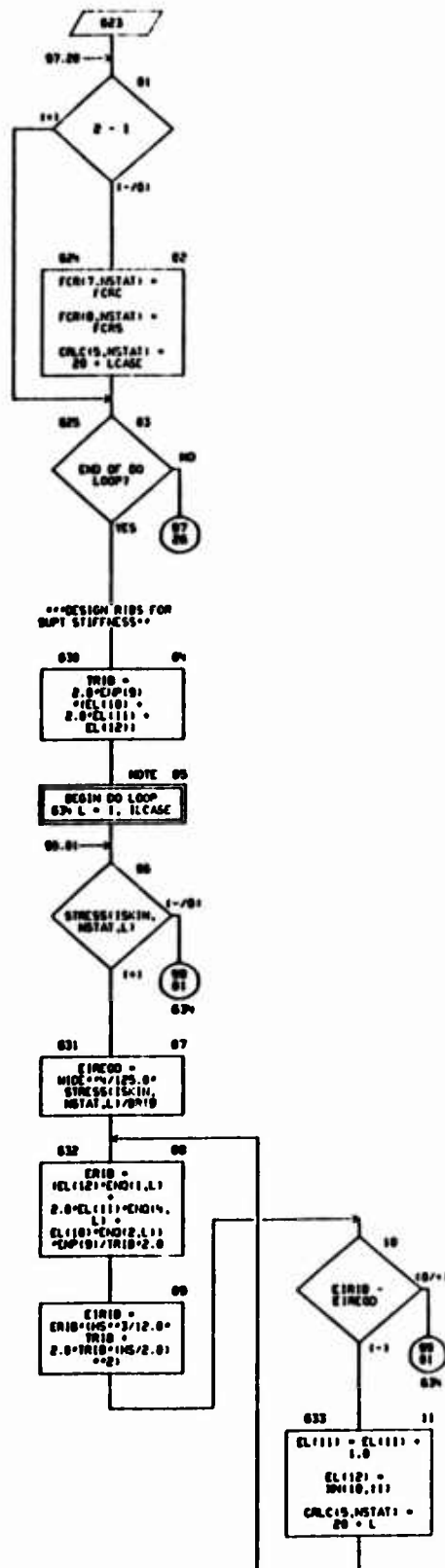


CHART 9: FILE - SUBROUTINE ACSTR

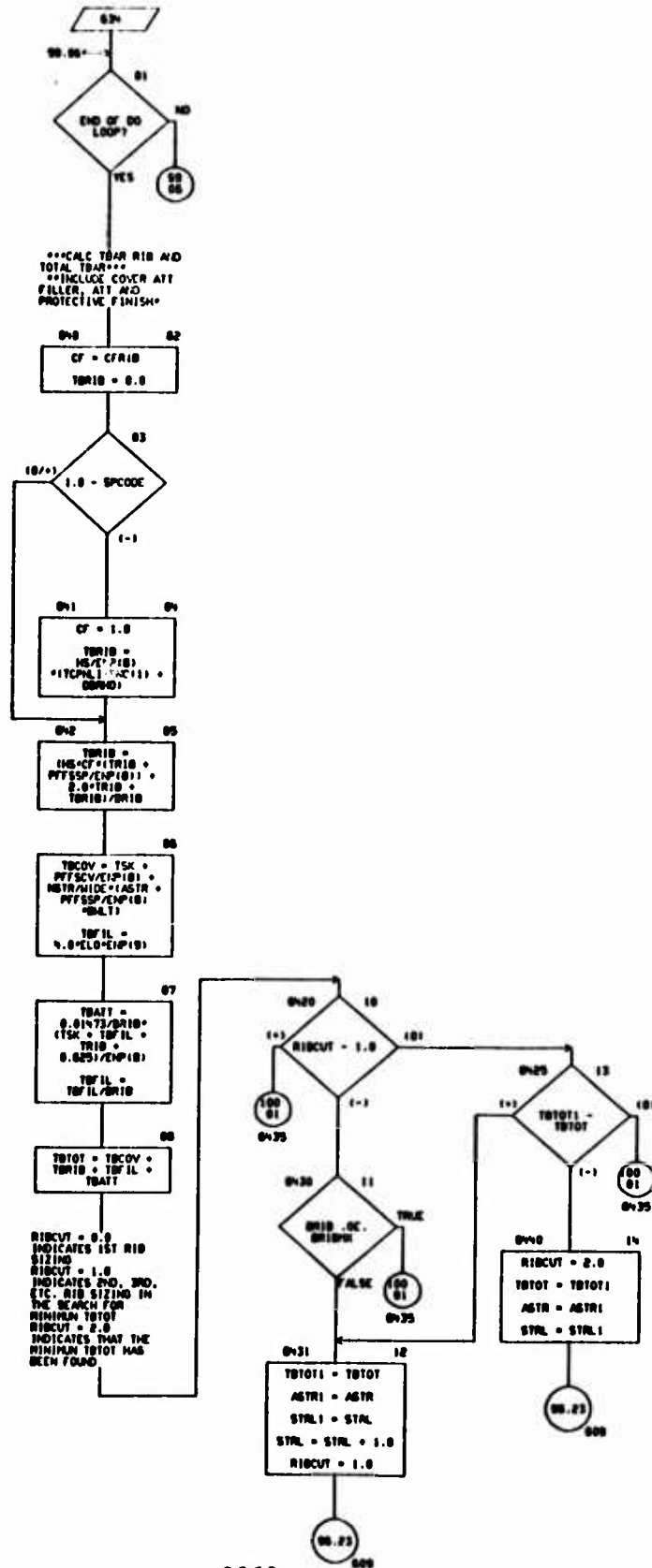


CHART TITLE - SUBROUTINE ACNSTR

\*\*\*COVER SIZING  
COMPLETED--CHECK FOR  
L-SKIN SEARCH\*\*

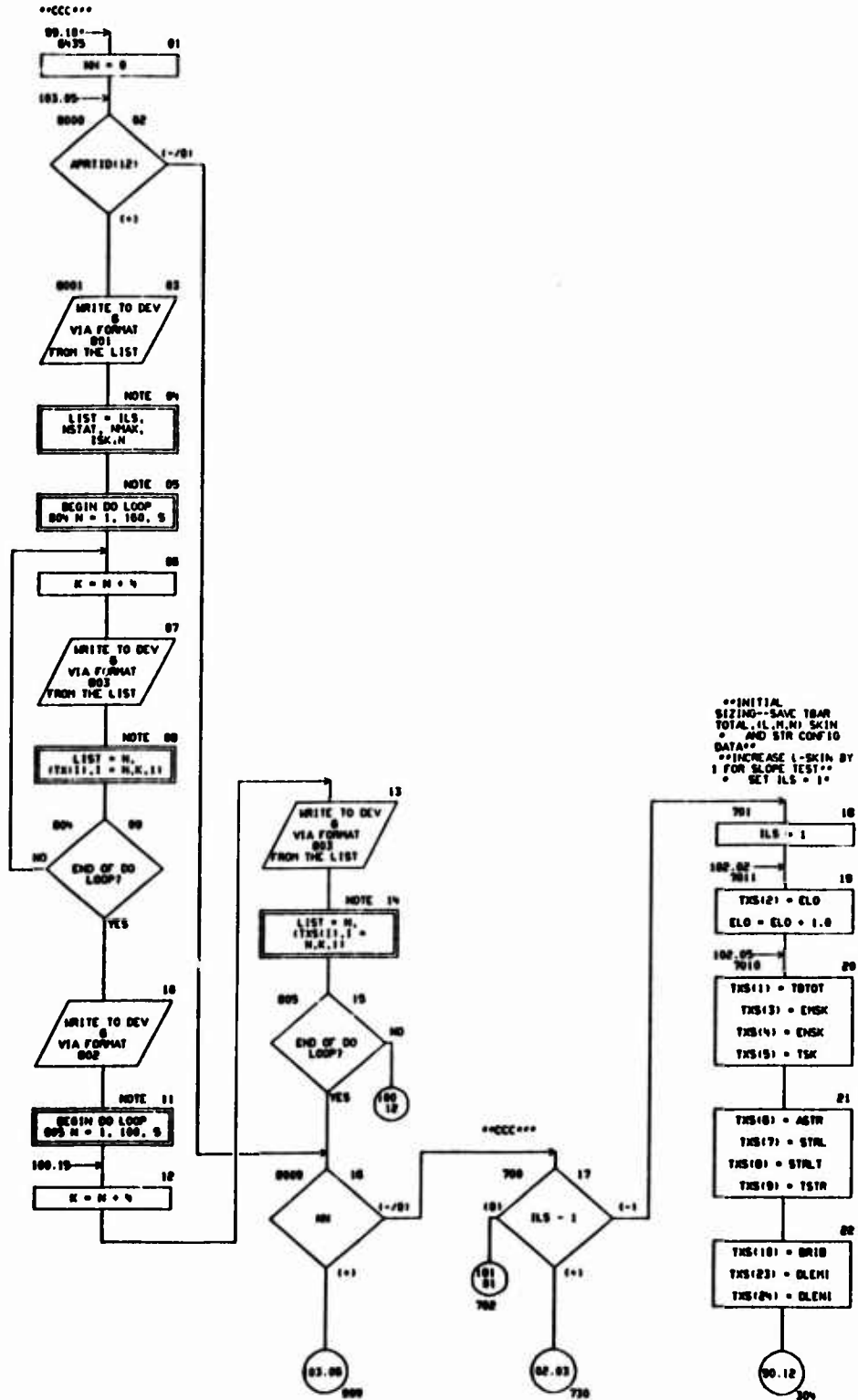


CHART TITLE - SUBROUTINE ACWSTR

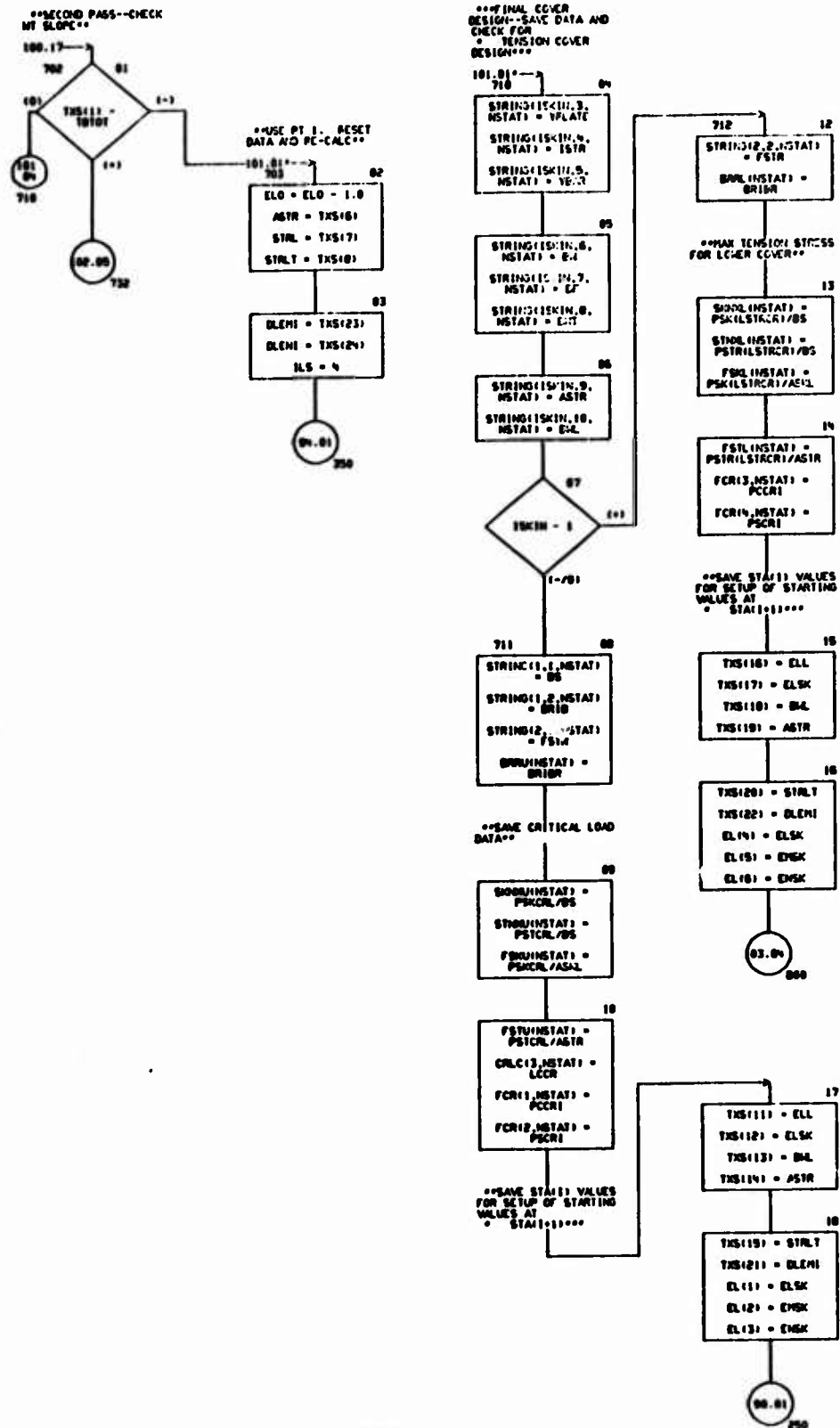


CHART TITLE - SUBROUTINE ACVSTR

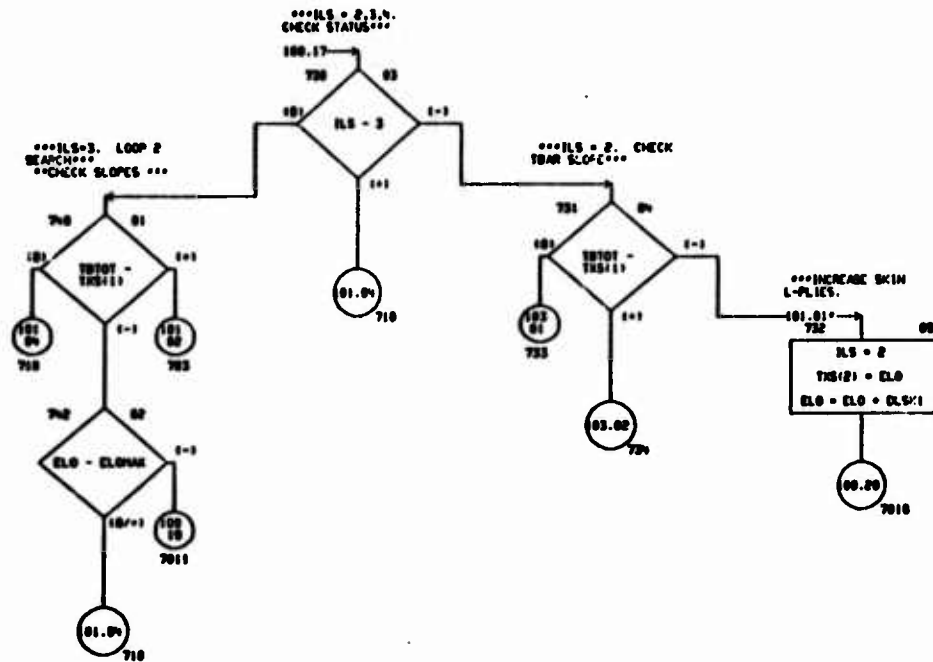


CHART TITLE - SUBROUTINE ACNSTR

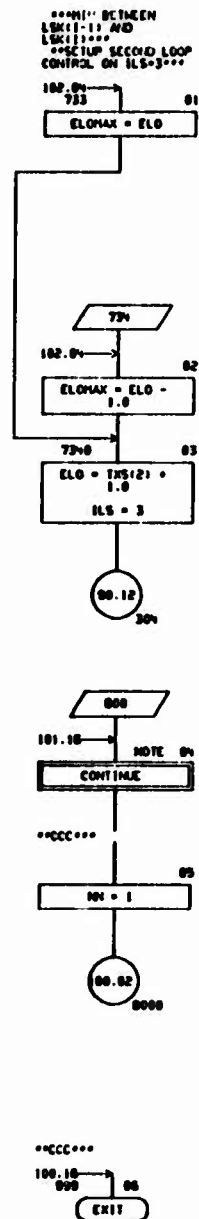




CHART TITLE - MVI-PROCEDURAL STATEMENTS

```

COMMON T(2063),D(2060),CD(2063),ND(100),TH(900),CT(2040)
DIMENSION EL(15),EXP(9),END(5,20),ENK(3,20),ENH(6),ENC(3),DC(100),
STRESS(6,11,20),CLC(17,11),P(20),SPCRU(11),FCR(10,11),
STRID(2,10,11),THICK(4),CNT(9),IEL(15,11),
TX(100),TPS(100),
SHOU(11),SPDL(11),SHOU(11),STDL(11),
FSKU(11),FSTU(11),FSKL(11),FSL(11),
ESK(20),STFHH(5),STFHF(5),
SLUD(33),SKLO(33),STLUD(33),STLLO(33),
PSK(20),PSTR(20),
APRT(10,12),
BRUH(11),BRUL(11)
EQUIVALENCE (EL(1),T(1300)),(ENP(1),D(1155)),(END(1,1),TH(601)),
(ENK(1,1),TH(701)),(STRESS(1,1),CT(1)),(CLC(1,1),T(1501)),
(P(1),T(1006)),(SPCRU(11),T(1632)),(FCR(1,1),T(1100)),
(STRID(1,1,1),T(1676)),(THICK(1),T(1016)),(CNT(1),T(1194)),
(TX(1),CD(1)),(THS(1),CD(161)),
(INSTR(1),CNT(1)),(INSTR(1),CNT(2)),(IBR(1),CNT(3)),(IBRMAX,CNT(4)),
(IBRMAX,CNT(7)),(IBRMIN,CNT(40)),(IBRMAX,CNT(41)),(IBRMIN,CNT(42)),
(INSTR,CNT(21)),(C3,CNT(13)),(C8,CNT(23)),
(SPCODE,ND(43)),(ILCASE,ND(41)),(ITYPE,ND(44)),
(APRT(10,1),T(1070)),(INSTAT,ND(55)),(INMAX,ND(131)),
(IOC(1),D(1401)),(STFHH(1),D(1340)),(STFHF(1),D(1353)),
(STLUD(1),CD(261)),(SKLO(1),CD(2041)),
(STLUD(1),CD(327)),(STLLO(1),CD(360)),(CTIX,D(1407))
EQUIVALENCE (ENH(1),D(1164)),(ENC(1),CT(2043)),(IEL(1,1),TH(1)),
(INB,CNT(24)),(ICPL(1),CNT(31)),
(FCR(10,D(400)),(DCRD,D(1424)),(PFFSCV,CT(2047)),(PFFSF,CT(2040)),
(SHOU(1),TH(166)),(SHOU(1),TH(177)),
(FSKU(1),TH(100)),(FSTU(1),TH(100)),(SKLO(1),TH(210)),
(STHL(1),TH(201)),(FSKL(1),TH(232)),(FSL(1),TH(213)),
(INSTIFF,CNT(40)),
(INSTIFF,ND(33)),(ILS,ND(34)),(ILS,ND(35)),(ILR,ND(36)),
(PSK(1),TX(101)),(PSTR(1),TX(121)),(ASL,TX(6)),(ILSTRCR,ND(37)),
(INDTS,TX(76)),(BOTA,TX(70)),
(BRUH(1),TH(294)),(BRUL(1),TH(265))
EQUIVALENCE (BS,TX(30)),(WIDE,TX(31)),(ELL,TX(32)),(ELO,TX(33)),
(END,TX(34)),(END,TX(35)),(ELSK,TX(36)),(EMSK,TX(37)),
(ENBK,TX(38)),(DELL,TX(39)),(ASTRA,TX(40)),(SHOPL,TX(41)),
(OLSK(1),TX(42)),(SKLUPN,TX(43)),(SKLLPN,TX(44)),(STRLUN,TX(45)),
(STRLLN,TX(46)),(BRIBR,TX(47)),(OLSTRL,TX(48)),(ASTRO,TX(49)),
(STRLO,TX(50)),(STRLO,TX(51)),(BRIBFC,TX(52)),(BRIBFC,TX(53)),
(BRIB,TX(54)),(ASIR,TX(55)),(STRL,TX(56)),(STRLT,TX(57)),
(AESTR,TX(58)),(TOSTR,TX(59)),(TSTR,TX(60)),(FSTR,TX(61)),
(BW,TX(62)),(BF,TX(63)),(TSTR,TX(64)),(YBAR,TX(65)),
(YPLATE,TX(66)),(TRIB,TX(67)),(EIRCOO,TX(68)),(EIRIB,TX(69)),
(EIRIB,TX(70)),(IBTOT,TX(71)),(IBCOV,TX(72)),(IBRIB,TX(73)),
(TBFL,TX(74)),(TBATT,TX(75)),
(ESK(1),TX(101)),(TSK,TX(41)),(ASKT,TX(51)),(OLENT,TX(111)),
(OLENT,TX(121)),(PSKRL,TX(141)),(PSTCL,TX(111)),
(IPCCT(1),TX(110)),(PSCRI,TX(101)),(PSKPOA,TX(101)),(IRSTPOA,TX(101)),
(STFHT,TX(70)),(STSTR,TX(60)),
(INDL,TX(30)),(IBMT,TX(31)),(IBLT,TX(32))
REAL ISTR,INSTR,IEL
INTEGER SPCODE,TYPE
001 FORMAT (20H1 ***ACMSTR SUBR----ILS=12,6H STA=12,6H PT=14,10H
COV 10=12,6H TX )
002 FORMAT (6H TX)
003 FORMAT (3X,13,3X,5E10.0)

```

08/14/74

AUTOFLOW CHART SET - SHEEP MINS AND EXPERIMENTAL MODULE - PAGE 109

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACPSA\*\*\*\*\*

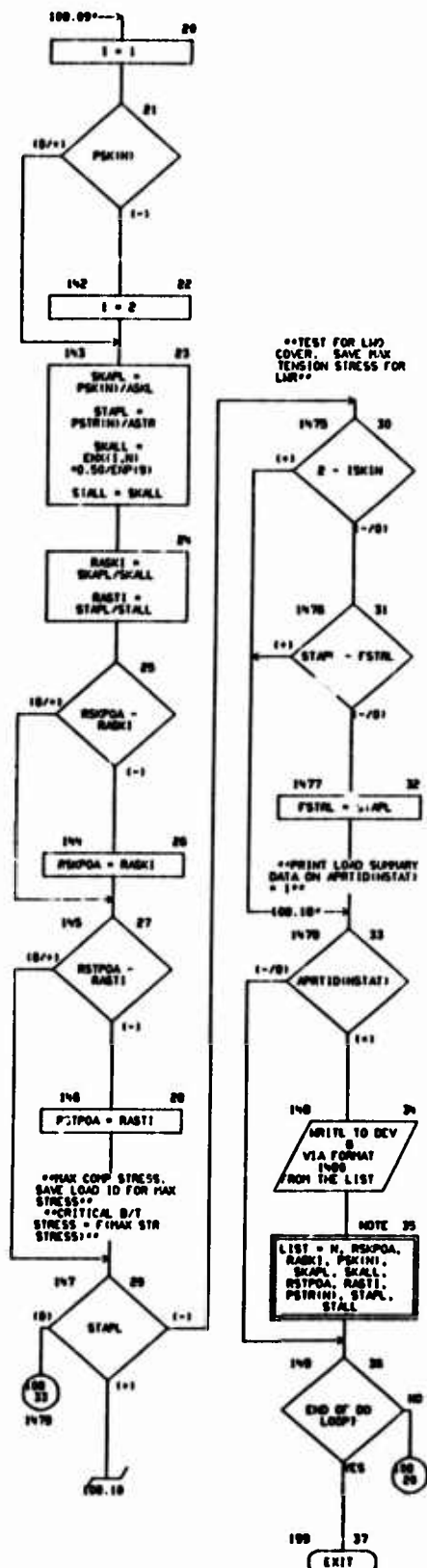
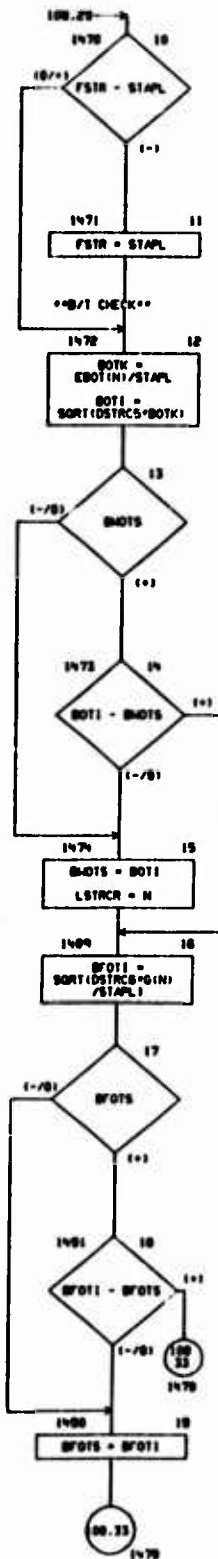
\*\*\*SKIN-STR LOAD DIST, SKIN STABILITY - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

2075

2076

\*\*\*CHECK 1-PLY  
APPLIED/ULT P/A  
STRESSES AND  
RATIOS\*\*\*  
\*\*CALC MIN B/T  
REQD\*\*



## CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(2060),D(2060),CD(2000),ID(100),TX(900),CT(2040)
DIMENSION CNP(9),END(5,20),ENX(3,20),STRESS(6,11,20),
          Q(20),CNT(9),
          TX(160),ESK(20),PSK(20),PSTR(20),SKR(20),
          EROT(20),
          APRT(10),
          EQUIVALENCE (CNP(1),D(1155)),(E(21),1),TM(50)),(G(1),CT(2023)),
          (STRESS(1,1,1),CT(1)),(ENX(1,1),TM(70)),(CNT(1),TX(54)),
          (C3,CNT(13)),(C8,CNT(23)),(TX(1),CD(1)),(ESK(1),TX(10)),
          (PSK(1),TX(10)),(PSTR(1),TX(12)),(SKR(1),TX(14)),
          (DS,TX(30)),(ELO,TX(33)),(END,TX(34)),(ENO,TX(35)),
          (ENI,TX(1)),(ENI,TX(2)),(SKR(1),TX(3)),(TSK,TX(4)),(ASKT,TX(5)),
          (ABQ,TX(6)),(ASTRL,TX(7)),(RSKPOA,TX(8)),(PSTPOA,TX(8)),
          (IRAC,TX(10)),(EOD,TX(20)),
          (ISKIN,ND(32)),(ILCAGE,ND(41)),(LCGR,ND(29)),
          (APRT(10),T(1070)),(IMAX,ND(31)),(INSTAT,ND(55)),(IMAXI,ND(30))
          EQUIVALENCE (ESK(1),TX(13)),(PSK(1),TX(14)),(PSTR(1),TX(15)),
          (PSK(1),TX(16)),(OSK(1),TX(17)),(PCCR(1),TX(18)),(PSCR(1),TX(19)),
          (IRMAX,TX(20)),(IRI,TX(21)),(IRCI,TX(22)),(IRSI,TX(23)),
          (PCI,TX(24)),(PMKI,TX(25)),(PMKY,TX(26)),
          (OLENI,TX(11)),(OLENI,TX(12)),
          (PSTR,TX(16)),(BMDTS,TX(76)),(BMDTS,TX(77)),
          (LSTRCR,ND(37)),
          (DSTRCS,D(500)),(DSTRCS,D(509)),
          (EROT(1),TM(19)),
          (IRAKI,TX(27)),(IRAST,TX(28)),
          (SPONEP,D(445))
101  FORMAT (1H0,7F4H ***ADPSEK SUBR---STA=12,EN PT=14,10H COV I
      0-12,EN DSTR=FB.3,4H ***/BX,3F6.1,3F9.4,F6.1)
1101 FORMAT (1H0,2X,12,2X,14,2X,3F7.1,3F9.4,4E16.0,12X,2F11.1,2F9.1,4E
      16.0,12X,3F9.4,12X,3F9.1,4E16.0,4E16.0)
1403  FORMAT (1H0,7F4H ***ADPSEK SUBR---STA=12,EN PT=14,10H COV I
      0-12,EN DSTR=FB.3,4H ***/BX,3F6.1,3F9.4,F6.1)
1400  FORMAT (1X,12,2X,3F9.4,3F11.1,2X,3F9.4,3F11.1)

```

06/14/76

AUTOFLOW CHART SET - SHEEP M113 AND EFFETPAGE MODULE - PAGE 110

CHART TITLE - INTRODUCTORY COMMENTS

```
*****  
*****SUBROUTINE ACSTR3*****  
***STRINGER GEOMETRY/SECTION PROPERTIES - ADV. COMP. ANALYSIS***  
*****
```

CHART TITLE - SUBROUTINE ACSTRG(10)

ACSTRG  
01.17---  
\*\*\*STRINGER  
BECHETRY  
SLE 2.11E\*\*\*  
\*\*\*SLE AREA  
DISTRIBUTIONS BASED  
ON CRIPPLING D/T\*\*\*  
\*\*\*TYPE OF STR 1, 2,  
3, 4\*\*\*  
\*\*\*STRINGER ID =  
NSTIFF, 1=1, 2=2,  
3=1, 4=4\*\*\*

\*\*\*DISTRIBUTION ID =  
ID, 0=OK, 1=STR AREA  
TOO SMALL\*\*\*

\*\*\*TYPE OF STRINGER  
TEST\*\*\*

01  
TREQD = 0.0  
TREQD1 = 0.0  
ILOEL = 3

02  
ID = 0.0  
B4L = STRL  
BMT = TSTR  
B4LT = STRLT  
BOTA = BMIN/BMT

03  
NSTIFF = 1

04  
11.10

\*\*\*INTEGRAL 1  
STRINGER\*\*\*

05  
BNOTS = BNOTS

06  
BOTA = BNOTS

07  
B4L = B4L + 1.0  
BMT = ENP(9)\*B4L  
B4LT = ASTR/BMT

08  
BMIN = B4LT

09  
BOTA = B4LT/BMT

10  
BNOTS = BOTA

11  
B4LT/BMT = BNOTS

12  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

13  
B4L1 = B4L + 3.0

14  
STRLO = B4L1

15  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

16  
B4LT1 = B4LT1

17  
BOTA = B4LT1/BMT1

18  
B4LT1/BMT1 = BNOTS

19  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

20  
B4L1 = B4L + 3.0

21  
STRLO = B4L1

22  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

23  
B4LT1 = B4LT1

24  
BOTA = B4LT1/BMT1

25  
B4LT1/BMT1 = BNOTS

26  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

27  
B4L1 = B4L + 3.0

28  
STRLO = B4L1

29  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

30  
B4LT1 = B4LT1

31  
BOTA = B4LT1/BMT1

32  
B4LT1/BMT1 = BNOTS

33  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

34  
B4L1 = B4L + 3.0

35  
STRLO = B4L1

36  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

37  
B4LT1 = B4LT1

38  
BOTA = B4LT1/BMT1

39  
B4LT1/BMT1 = BNOTS

40  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

41  
B4L1 = B4L + 3.0

42  
STRLO = B4L1

43  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

44  
B4LT1 = B4LT1

45  
BOTA = B4LT1/BMT1

46  
B4LT1/BMT1 = BNOTS

47  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

48  
B4L1 = B4L + 3.0

49  
STRLO = B4L1

50  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

51  
B4LT1 = B4LT1

52  
BOTA = B4LT1/BMT1

53  
B4LT1/BMT1 = BNOTS

54  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

55  
B4L1 = B4L + 3.0

56  
STRLO = B4L1

57  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

58  
B4LT1 = B4LT1

59  
BOTA = B4LT1/BMT1

60  
B4LT1/BMT1 = BNOTS

61  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

62  
B4L1 = B4L + 3.0

63  
STRLO = B4L1

64  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

65  
B4LT1 = B4LT1

66  
BOTA = B4LT1/BMT1

67  
B4LT1/BMT1 = BNOTS

68  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

69  
B4L1 = B4L + 3.0

70  
STRLO = B4L1

71  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

72  
B4LT1 = B4LT1

73  
BOTA = B4LT1/BMT1

74  
B4LT1/BMT1 = BNOTS

75  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

76  
B4L1 = B4L + 3.0

77  
STRLO = B4L1

78  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

79  
B4LT1 = B4LT1

80  
BOTA = B4LT1/BMT1

81  
B4LT1/BMT1 = BNOTS

82  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

83  
B4L1 = B4L + 3.0

84  
STRLO = B4L1

85  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

86  
B4LT1 = B4LT1

87  
BOTA = B4LT1/BMT1

88  
B4LT1/BMT1 = BNOTS

89  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

90  
B4L1 = B4L + 3.0

91  
STRLO = B4L1

92  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

93  
B4LT1 = B4LT1

94  
BOTA = B4LT1/BMT1

95  
B4LT1/BMT1 = BNOTS

96  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

97  
B4L1 = B4L + 3.0

98  
STRLO = B4L1

99  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

100  
B4LT1 = B4LT1

101  
BOTA = B4LT1/BMT1

102  
B4LT1/BMT1 = BNOTS

103  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

104  
B4L1 = B4L + 3.0

105  
STRLO = B4L1

106  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

107  
B4LT1 = B4LT1

108  
BOTA = B4LT1/BMT1

109  
B4LT1/BMT1 = BNOTS

110  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

111  
B4L1 = B4L + 3.0

112  
STRLO = B4L1

113  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

114  
B4LT1 = B4LT1

115  
BOTA = B4LT1/BMT1

116  
B4LT1/BMT1 = BNOTS

117  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

118  
B4L1 = B4L + 3.0

119  
STRLO = B4L1

120  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

121  
B4LT1 = B4LT1

122  
BOTA = B4LT1/BMT1

123  
B4LT1/BMT1 = BNOTS

124  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

125  
B4L1 = B4L + 3.0

126  
STRLO = B4L1

127  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

128  
B4LT1 = B4LT1

129  
BOTA = B4LT1/BMT1

130  
B4LT1/BMT1 = BNOTS

131  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

132  
B4L1 = B4L + 3.0

133  
STRLO = B4L1

134  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

135  
B4LT1 = B4LT1

136  
BOTA = B4LT1/BMT1

137  
B4LT1/BMT1 = BNOTS

138  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

139  
B4L1 = B4L + 3.0

140  
STRLO = B4L1

141  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

142  
B4LT1 = B4LT1

143  
BOTA = B4LT1/BMT1

144  
B4LT1/BMT1 = BNOTS

145  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

146  
B4L1 = B4L + 3.0

147  
STRLO = B4L1

148  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

149  
B4LT1 = B4LT1

150  
BOTA = B4LT1/BMT1

151  
B4LT1/BMT1 = BNOTS

152  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

153  
B4L1 = B4L + 3.0

154  
STRLO = B4L1

155  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

156  
B4LT1 = B4LT1

157  
BOTA = B4LT1/BMT1

158  
B4LT1/BMT1 = BNOTS

159  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

160  
B4L1 = B4L + 3.0

161  
STRLO = B4L1

162  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

163  
B4LT1 = B4LT1

164  
BOTA = B4LT1/BMT1

165  
B4LT1/BMT1 = BNOTS

166  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

167  
B4L1 = B4L + 3.0

168  
STRLO = B4L1

169  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

170  
B4LT1 = B4LT1

171  
BOTA = B4LT1/BMT1

172  
B4LT1/BMT1 = BNOTS

173  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

174  
B4L1 = B4L + 3.0

175  
STRLO = B4L1

176  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

177  
B4LT1 = B4LT1

178  
BOTA = B4LT1/BMT1

179  
B4LT1/BMT1 = BNOTS

180  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

181  
B4L1 = B4L + 3.0

182  
STRLO = B4L1

183  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

184  
B4LT1 = B4LT1

185  
BOTA = B4LT1/BMT1

186  
B4LT1/BMT1 = BNOTS

187  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

188  
B4L1 = B4L + 3.0

189  
STRLO = B4L1

190  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

191  
B4LT1 = B4LT1

192  
BOTA = B4LT1/BMT1

193  
B4LT1/BMT1 = BNOTS

194  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

195  
B4L1 = B4L + 3.0

196  
STRLO = B4L1

197  
BMT1 = ENP(9)\*B4L1  
B4LT1 = ASTR/BMT1

198  
B4LT1 = B4LT1

199  
BOTA = B4LT1/BMT1

200  
B4LT1/BMT1 = BNOTS

201  
B4L = B4L1  
BMT = BMT1  
B4LT = B4LT1  
BOTA = B4LT/BMT

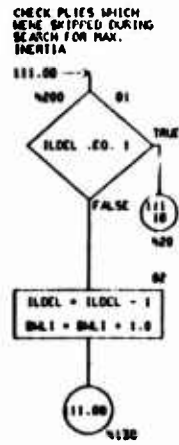
202  
B4L1 = B4L + 3.0



06/14/74

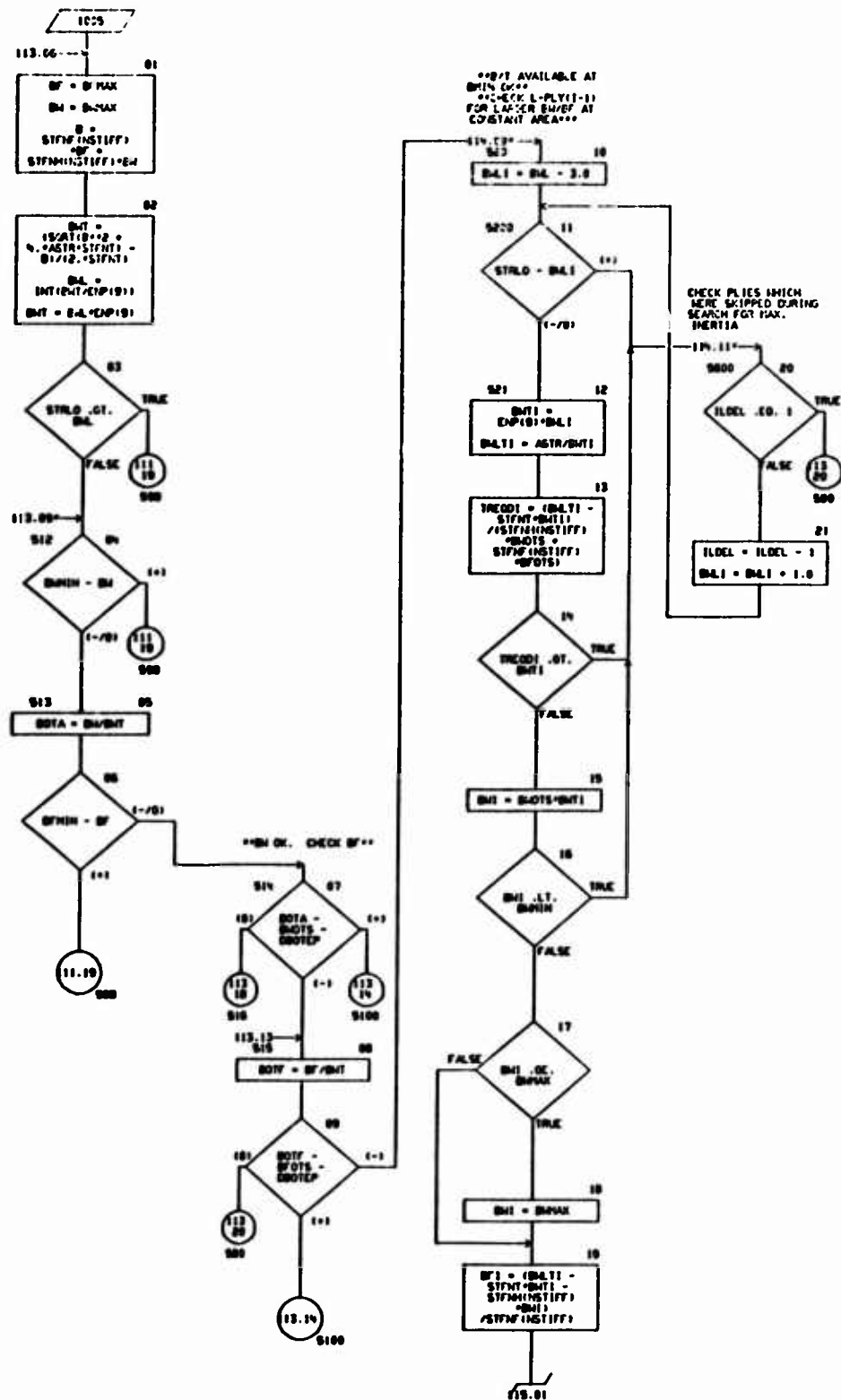
AUTOFLOW CHART SET - SAREP WING AND ENGINEAGE MODULE - PAGE 112

CHART TITLE - SUBROUTINE ACSTRG(1)



2082

CHART TITLE - SLEDDING ACFT(101)



2084

CHART TITLE - NON PRO-EQUAL STATEMENTS

```

COMMON T(2060),D(2060),CD(2000),ND(100),TX(900),CT(2040)
DIMENSION TX(100),TXS(100),CNT(0),
STFM(5),STFN(5),
APRTID(12),
ENP(0)
EQUIVALENCE (ENP(1),D(1155)),(TX(1),CD(1)),(TXS(1),CD(161)),
(CNT(1),T(1541)),
(BPMAX,CNT(71)),(BPMIN,CNT(40)),(BPMAX,CNT(41)),(BPMIN,CNT(42)),
(ISTRLO,TX(50)),(ASTR,TX(55)),(STRLO,TX(56)),(STRLT,TX(57)),
(ISTR,TX(60)),(BMT,TX(62)),(BFT,TX(63)),(ISTR,TX(64)),(YSAR,TX(65)),
(BMOTS,TX(76)),(BFOTS,TX(77)),(DOTA,TX(70)),(STFNT,TX (79)),
(BML,TXS(30)),(BMT,TXS(31)),(BMLT,TXS(32)),
(BMLT,TXS(39)),(BMT,TXS(36)),(BMLT,TXS(37)),
(STFNM(1),D(1340)),(STFN(1),D(1353)),
(MSTIFF,ND(33))
,(BMT,TXS(30)),(BFT,TXS(39)),(BMT,TXS(40))
,(APRTID(1),T(1070)),(INSTAT,ND(55))
,(DBOTEP,D(444))
REAL ISTR
9901 FORMAT (24H0 ***ACSTRO SUBR---STA,13,10H MSTIFF=.12,6H 10-.1
2,6H ASTR=F0.5,4H ***//6X,5F10.5)
9902 FORMAT (8X,4F12.5,7X,6F12.5,7X,6F12.5,14)

```

CHART TITLE - INTRODUCTORY CONTENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE MEIGH\*\*\*\*\*

\*\*\*SECTION MT PER INCH FOR ADV. COMP. M/RIB TORQUE-EJ\*\*\*

\*\*\*\*\*

06/14/78

AUTOFLEX CHART SET - SHEEP HING AND EMBEDEDGE MODULE - PAGE 110

CHART TITLE - SUBROUTINE MEI042(ME1,NSTAT)

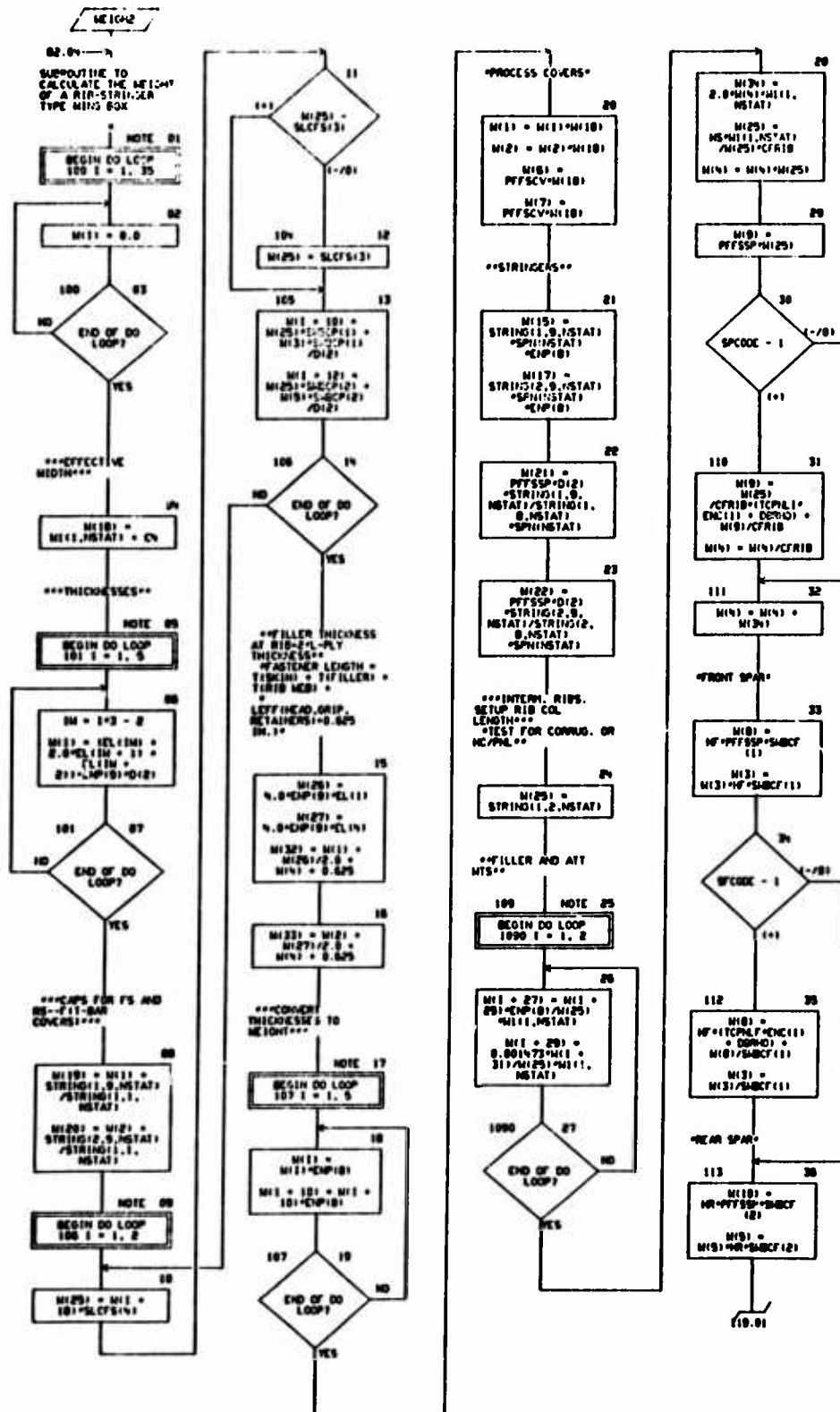


CHART TITLE - SUBROUTINE MECH(MET, NSTAT)

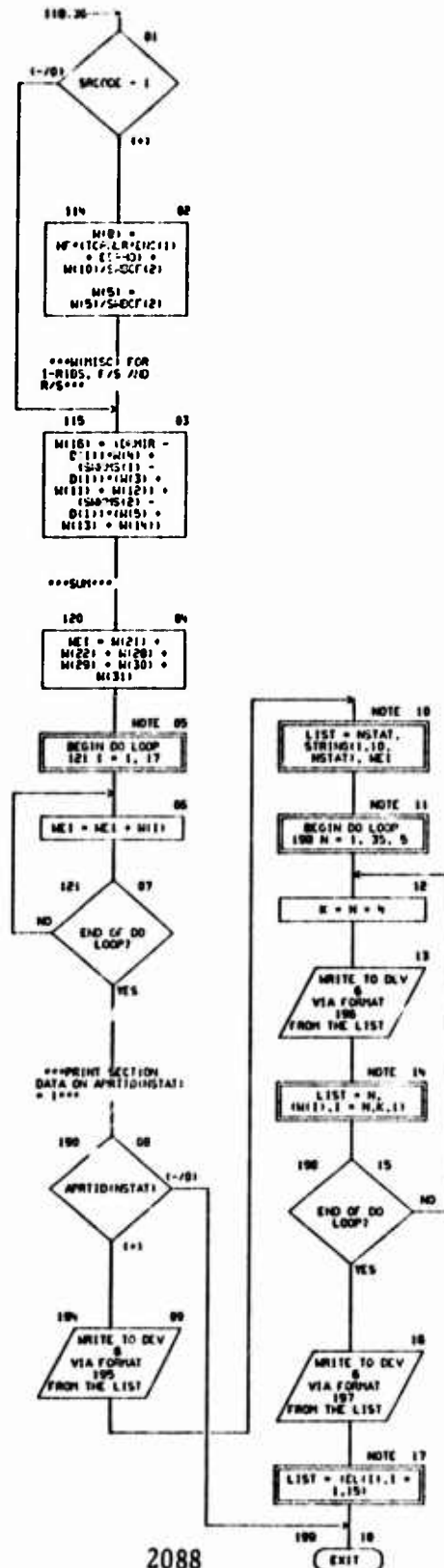




CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(10100)
DIMENSION D(2000),CT(2048),ND(100),
ENP(10),ENN(10),ENC(10),EL(10),
M(35),
SLCFS(5),SHDCP(2),SHMS(2),SHDCP(2),
APRTID(12),
SPN(33),
M(12,11),STRING(12,10,11),CNT(130)
EQUIV= ENCE (D(1),T(2001)),ICT(1),T(7121),IND(1),T(16121),
IENP(1),D(1155),IENN(1),D(1124),IENC(1),CT(2043),
IEL(1),T(1300),ICNT(1),T(1541),
ICN,CNT(14),IMS,CNT(24),IIF,CNT(25),IHR,CNT(26),
ISFCODE,ND(45),ISRCODE,ND(46),ISPCODE,ND(43),
ICFRIB,D(400),ISDCP(1),D(427),IDBRHO,D(464),
ITCPML,CNT(31),ITCPMLP,CNT(32),ITCPMLR,CNT(33),
ISLCFS(1),D(1470),ISHDCP(1),D(423),ISHMS(1),D(410),
IDKMR,D(24),IPFFSCV,CT(2047),IPFTSSP,CT(2048),
INI(1),CT(1981),STRING(1,1,1),T(1676),
APRTID(1),T(1070),
SPN(1),T(1275)
INTEGER SPCODE,SFCODE,SPCODE
195 FORMAT (24H0 ***WEIGH2 SUGR -- STA,13,BH N/STR*,F7.1,BH MT/IN*,
PB,N,NH*** /5H0 M )
196 FORMAT (3X,12,2X,5F12.4)
197 FORMAT (12H0 EL(1-15)=,3F6.1,2,3F6.1,2X,3F5.1,2X,3F5.1,2X,3F5.1)

```

06/14/74

AUTOFLOW CHART SET - SHEEP WING AND EXFERENCE MODULE - PAGE 121

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ASTIFF\*\*\*\*\*

\*\*\*TORQUE-BOX STIFFNESS EVALUATION - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*

CHART TITLE - SUBROUTINE ASTIFF

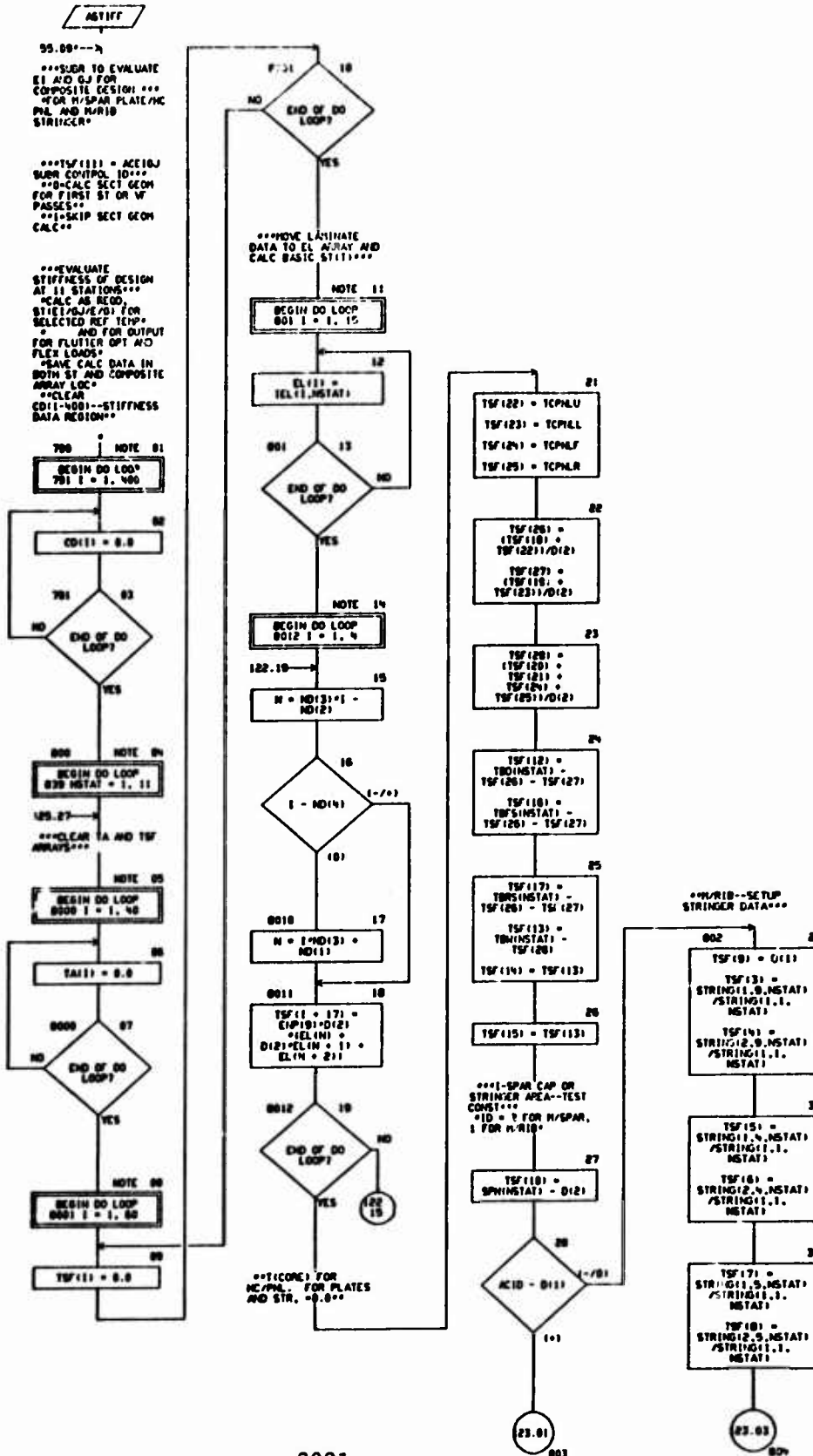


CHART TITLE - SKELETON STIFF

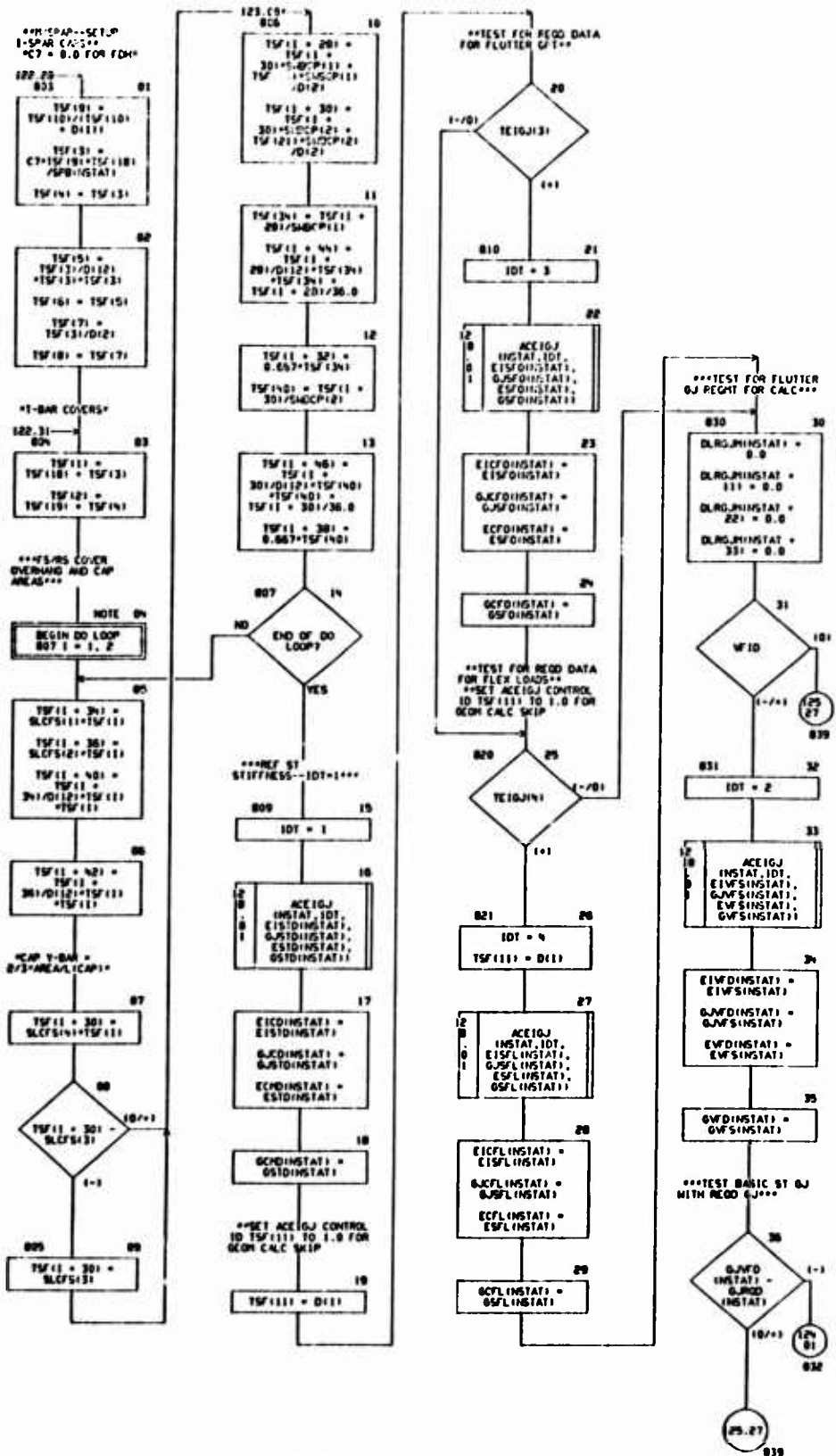


CHART TITLE - SUBROUTINE ASTIFF

\*\*SIZE TO REQ  
 PLUTTER GJ--INCREASE  
 JSTRUCT BY STEPS\*\*  
 \*\*SETUP ID FOR ORDER  
 OF INCREASE FOR  
 MEDS\*\*  
 \*\*SELECTION CRITERIA  
 = THINEST TO  
 THICKEST MED\*\*  
 \*\*ASSURED INITIAL  
 ORDER = FS, RS, LC,  
 UC\*

\*\*IM1(1-4)=IM1, IM2,  
 IM3, IM4 = ORDER IDS\*  
 \*\*IM1, IM2, IM3, IM4  
 WILL CONTAIN 1,2,3,4  
 TO DENOTE WHICH  
 MED IS TO BE  
 USED IN THE  
 SEQUENTIAL STEPS\*

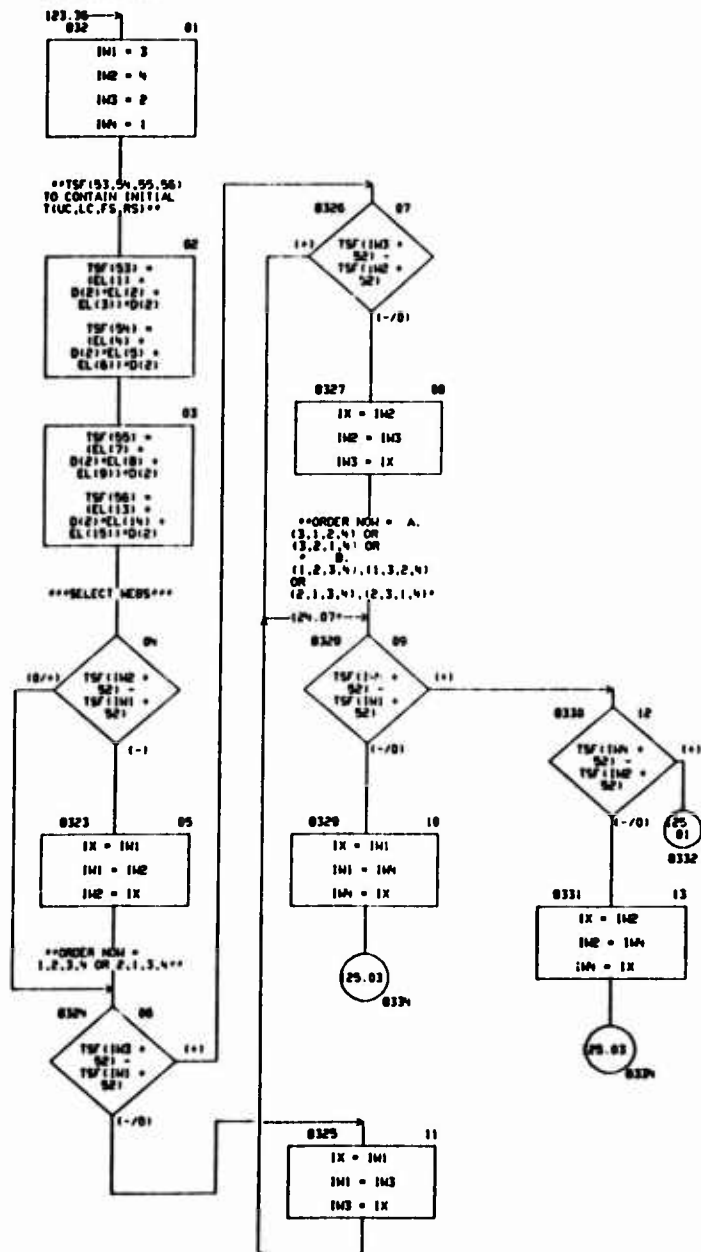
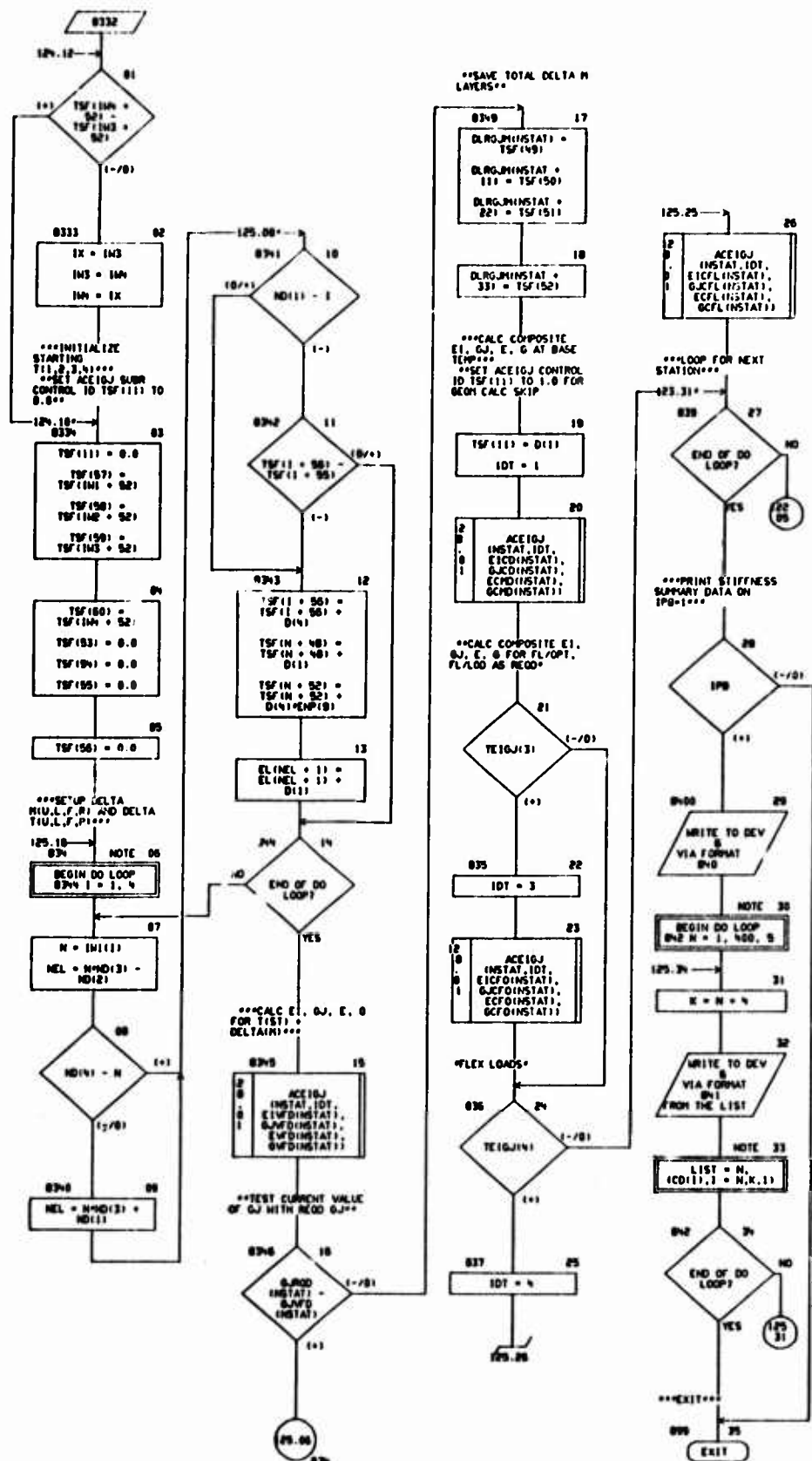


CHART TITLE - SUBROUTINE AGSTIFF



## CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(2060),D(2060),CD(2030),ID(100),TH(600),CT(20-9)
DIMENSION (CNP(10),CL(115),TEL(115,11),
  TAI(40),TSF(60),SPB(33),SPH(33),
  TBM(11),TBD(11),TBS(11),TBR(11),
  SLCP(5),SABCP(2),
  IM(14),
  STRING(2,10,11),CNT(30)
DIMENSION (GJSD(11),E1SD(11),GJCD(11),E1CD(11),
  GSTD(11),ESTD(11),GCHD(11),ECHD(11),
  GJSFO(11),E1SFO(11),GJCF(11),E1CF(11),
  GSFO(11),ESFO(11),GCF(11),ECF(11),
  GJFL(11),E1FL(11),GJFL(11),E1FL(11),
  GSFL(11),ESFL(11),GCF(11),ECF(11),
  GJWFD(11),E1WFD(11),GJWFD(11),E1WFD(11),
  GJWFS(11),E1WFS(11),GJWFS(11),E1WFS(11),
  DLROJH(4),GJROD(1),TEIGJ(4),ENOC(5,4)
EQUIVALENCE (CNP(1),D(1155)),(EL(1),T(1300)),(IEL(1,1),TH(1)),
  (TAI(1),CD(40)),(TSF(1),CD(44)),
  (SPB(1),T(1232)),(SPH(1),T(1265)),
  (TBM(1),T(942)),(TBD(1),T(530)),(TBS(1),T(153)),(TBR(1),T(165)),
  (SLCP(1),D(1470)),(SABCP(1),D(423)),
  (CNT(1),T(154)),(C7,CNT(22)),
  (IM1,IM(1)),(IM2,IM(2)),(IM3,IM(3)),(IM4,IM(4)),
  (TCPLU,CNT(29)),(TCPLL,CNT(30)),(TCPLF,CNT(32)),
  (TCPLR,CNT(33)),
  (ACID,D(430)),(STRING(1,1,1),T(1676)),
  (IPB,NO(24))
EQUIVALENCE (GJSD(1),CD(1)),(E1SD(1),CD(12)),(GSTD(1),CD(23)),
  (ESTD(1),CD(34)),(GJCD(1),CD(45)),(E1CD(1),CD(56)),
  (GCHD(1),CD(67)),(ECHD(1),CD(78)),
  (GJWFD(1),CD(89)),(E1WFD(1),CD(100)),(GJWFD(1),CD(111)),
  (E1WFD(1),CD(122)),(GJSFO(1),CD(133)),(E1SFO(1),CD(144)),
  (GSFO(1),CD(155)),(ESFO(1),CD(166)),(GJCF(1),CD(177)),
  (E1CF(1),CD(188)),(GCF(1),CD(199)),(ECF(1),CD(210)),
  (GJFL(1),CD(221)),(E1FL(1),CD(232)),(GSFL(1),CD(243)),
  (ESFL(1),CD(254)),(GJFL(1),CD(265)),(E1FL(1),CD(276)),
  (GCF(1),CD(287)),(ECFL(1),CD(298)),(DLROJH(1),C(1309)),
  (GJROD(1),T(166)),
  (TEIGJ(1),TH(73)),(ENOC(1,1),TH(767)),
  (GJWFS(1),CD(353)),(E1WFS(1),CD(364)),(WFI(1),D(1251)),
  (GJWFS(1),CD(375)),(E1WFS(1),CD(386))
REAL IEL
@40 FORMAT(20H) ***ASTIFF SUBR***,7H0 CD)
@41 FORMAT (1H,1X,13,2X,5C16.0)

```

06/14/74

AUTOFLOW CHART SET - SHEEP MIND AC EFFICIENT MODULE - PAGE 127

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACC10J\*\*\*\*\*

\*\*\*TORQUE-BOX E1/GJ EVALUATION - ADV. COMP. ANALYSIS\*\*\*

\*\*\*\*\*



CHART TITLE - SUBROUTINE ACEIGJHS,10,AE1,AGJ,AE,AGJ

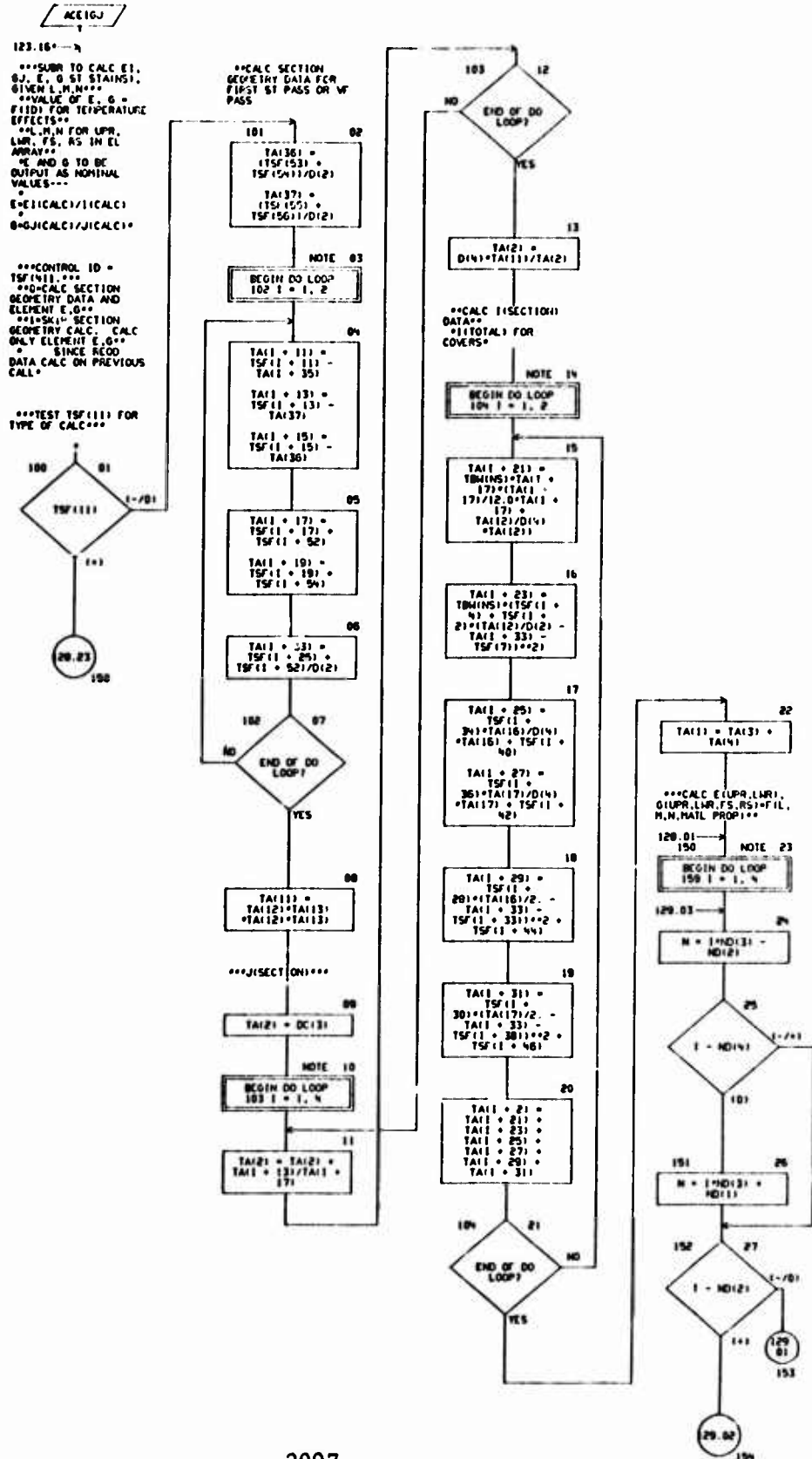
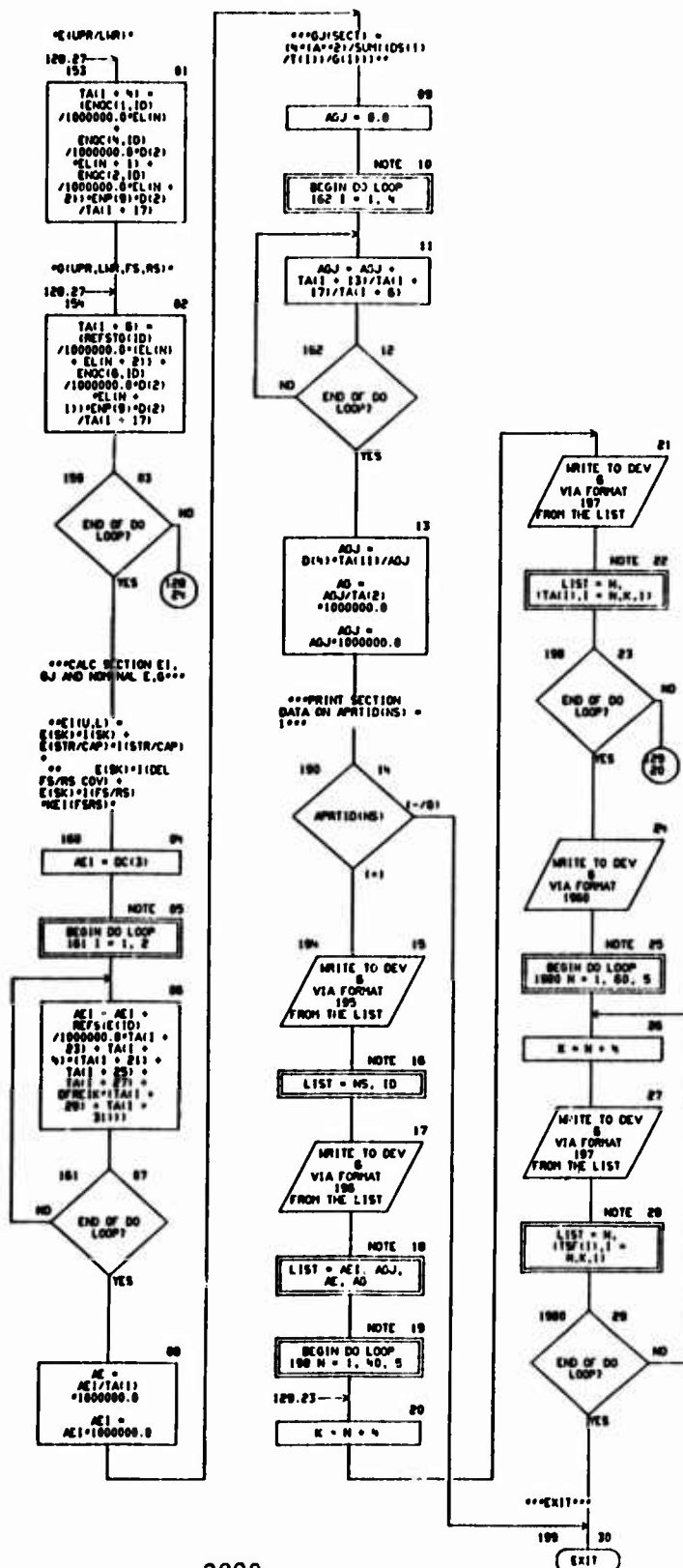


CHART TITLE - SUBROUTINE ACCEIGJINS, ID, AE1, AGJ, AE, AG1



08/14/76

AUTOFLOW CHART SET - SHEET WIND AND ESTIMATE MODULE - PAGE 130

CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(9:EB)
DIMENSION D(200),CD(200),ND(100),TW(900),CT(200),DC(100),
ENP(9),EL(15),ENOC(6,N),REFSTE(4),REFSTG(4),
TA(4),TSF(60),
APRT(2:12),
TBH(1)
EQUIVALENCE (D(1),T(200)),(CD(1),T(412)),(ND(1),T(612)),
(TW(1),T(622)),(CT(1),T(712)),(DC(1),D(140)),
(ENP(1),D(1155)),(ENOC(1,1),TW(707)),(EL(1),T(1350)),
(REFSTE(1),TW(811)),(REFSTG(1),TW(815)),
(TA(1),CD(401)),(TSF(1),CD(441)),
(APRT(1),T(1070)),
(TBH(1),T(1542)),(DFRE(1),DC(14))
195 FORMAT (24H0  **ACE10J SUDR -- STA 12,6H ID= ,11,2H**)
196 FORMAT (1H0,6X,4E16.0,7H0 TA )
1960 FORMAT (6H0 TSF )
197 FORMAT (3X,12,3X,5E16.0)

```

06/14/76

AUTOFLOW CHART SET - SHEEP NIPS AND EMPERORAGE MODULE - PAGE 131

CHART TITLE - INTRODUCTORY COMMENTS

```
*****  
*****SUBROUTINE ACNSTR*****  
***SECTION DESIGN DATA/MT ANALYSIS CONTROL - ADV. COMP. ANALYSIS***  
*****
```

CHART TITLE - SUBROUTINE ACNSTR

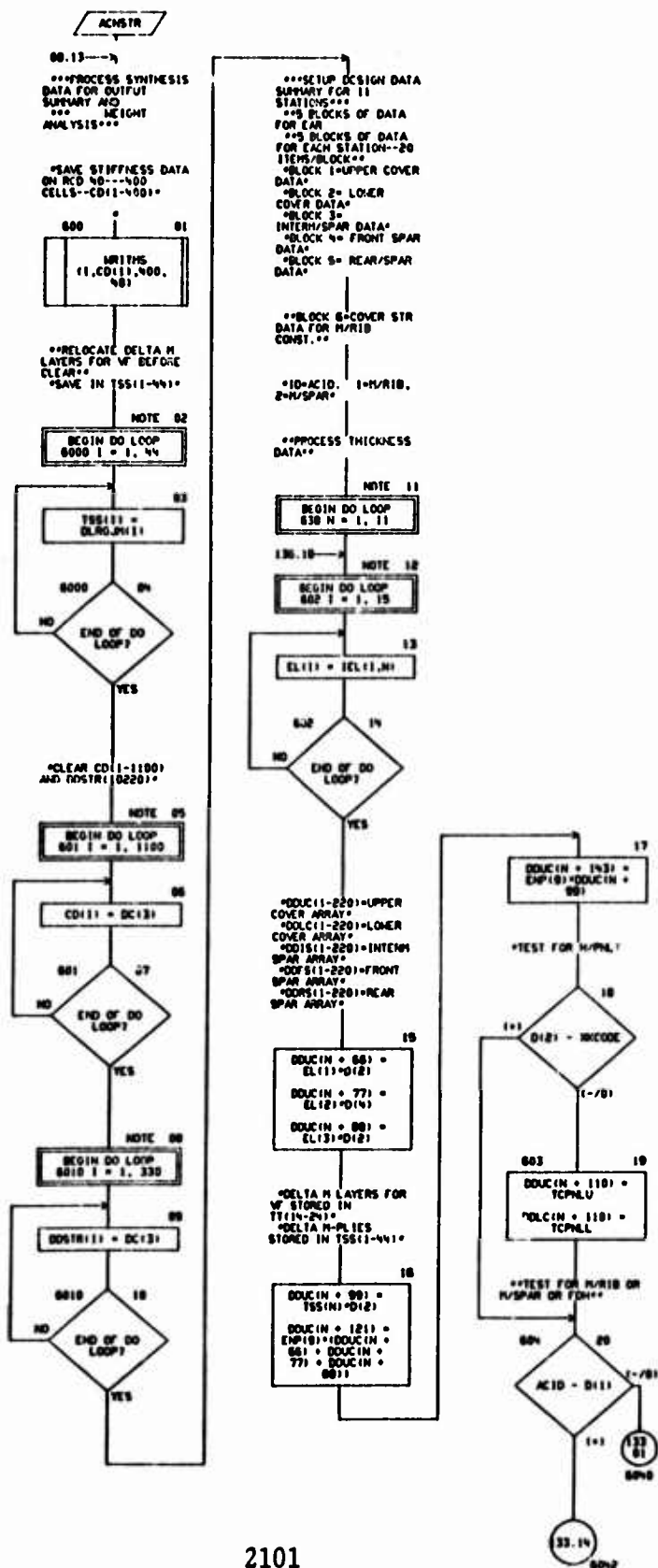
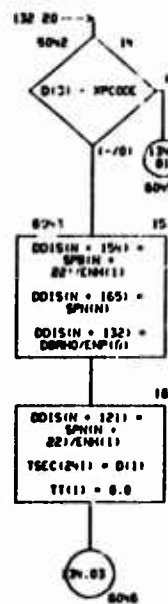


CHART TITLE - SHEPHERD'S ACNSTR

\*\*\*M/RIB COVER  
DATA\*\*\*



\*TEST FOR FULL DEPTH  
HONEYCOMB\*



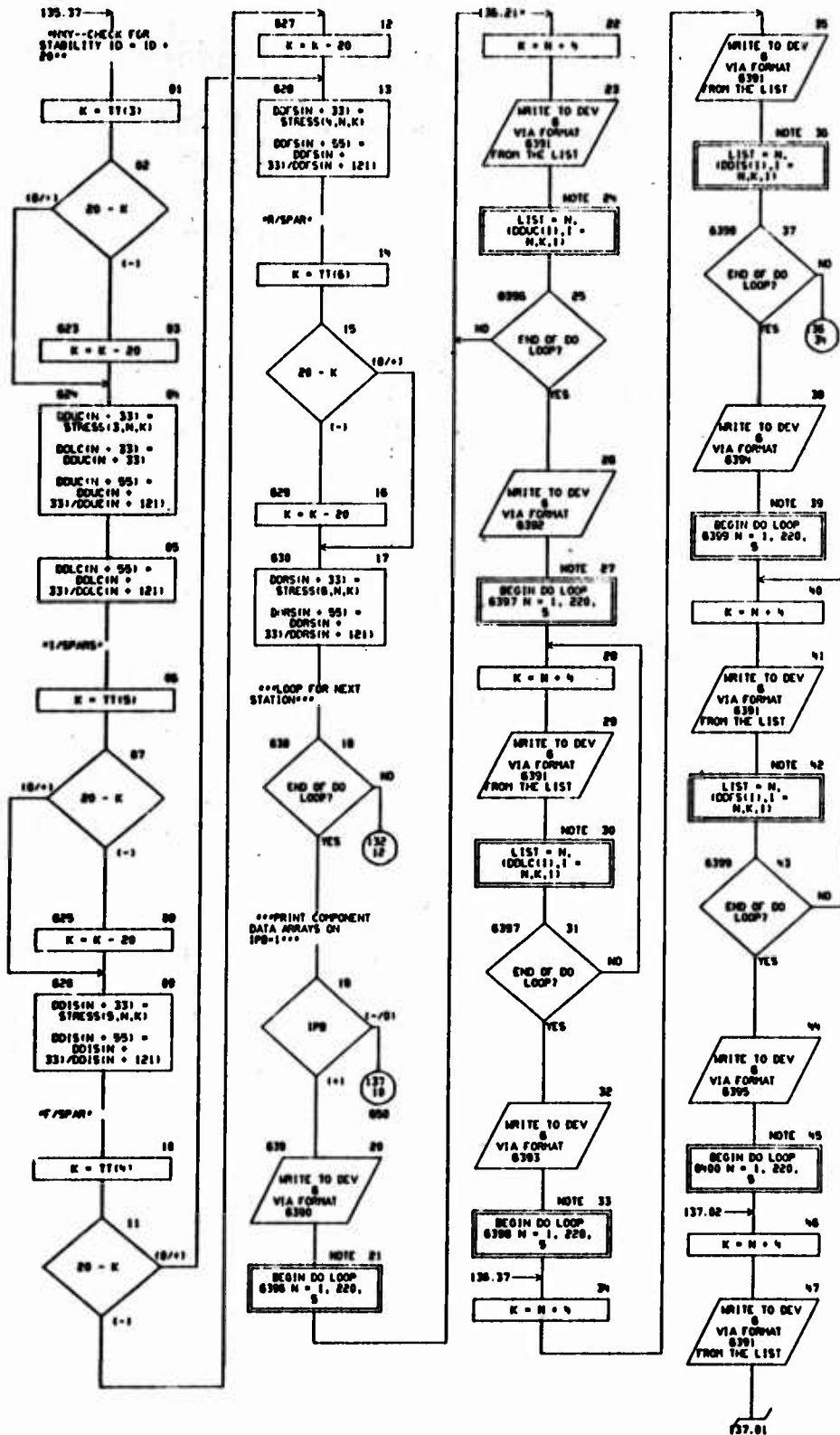


```

graph TD
    12-29 --> 81{END OF DO LOOP?}
    81 -- YES --> 82[DOFSIN = 1301 = TT(5)  
DOFSIN = 1941 = TT(6)]
    81 -- NO --> 13-29
    82 --> 83[**REAR SPAN**  
DORSIN = 661 = EL(13)*D(12)  
DORSIN = 771 = EL(14)*D(14)  
DORSIN = 881 = EL(15)*D(12)]
    83 --> 84[**PROCESS LOAD AND STRESS DATA**  
**CRITICAL LOAD AND STRESSES**  
DORSIN = 931 = TSSIN + 331*D(12)  
DORSIN = 121 = EXP(1)*DORSIN + 661 + DORSIN + 771 + DORSIN + 881  
DORSIN = 1431 = DORSIN + 931*EXP(1)]
    84 --> 85[**TEST FOR W/P/L**  
D(12) = WCODE  
1-701]
    85 -- YES --> 86[DORSIN = 1101 = TCRNLR  
**REAR SPAN CAPS**]
    85 -- NO --> 87[NOTE 80  
BEGIN DO LOOP  
814 I = 1, 2]
    86 --> 87
    87 --> 88[TT(1) = 41 = TT(1)  
21*SUBCP(12) + DORSIN + 1211*SUBCP(12)/D(12)]
    88 --> 89{END OF DO LOOP?}
    89 -- YES --> 90[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    89 -- NO --> 91[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    90 --> 91
    91 --> 92[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    92 --> 93[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    93 --> 94[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    94 --> 95[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    95 --> 96{END OF DO LOOP?}
    96 -- YES --> 97[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    96 -- NO --> 98[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    97 --> 98
    98 --> 99[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    99 --> 100[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    100 --> 101[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    101 --> 102[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    102 --> 103{END OF DO LOOP?}
    103 -- YES --> 104[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    103 -- NO --> 105[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    104 --> 105
    105 --> 106[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    106 --> 107[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    107 --> 108[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    108 --> 109[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    109 --> 110{END OF DO LOOP?}
    110 -- YES --> 111[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    110 -- NO --> 112[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    111 --> 112
    112 --> 113[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    113 --> 114[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    114 --> 115[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    115 --> 116[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    116 --> 117{END OF DO LOOP?}
    117 -- YES --> 118[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    117 -- NO --> 119[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    118 --> 119
    119 --> 120[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    120 --> 121[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    121 --> 122[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    122 --> 123[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    123 --> 124{END OF DO LOOP?}
    124 -- YES --> 125[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    124 -- NO --> 126[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    125 --> 126
    126 --> 127[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    127 --> 128[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    128 --> 129[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    129 --> 130[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    130 --> 131{END OF DO LOOP?}
    131 -- YES --> 132[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    131 -- NO --> 133[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    132 --> 133
    133 --> 134[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    134 --> 135[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    135 --> 136[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    136 --> 137[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    137 --> 138{END OF DO LOOP?}
    138 -- YES --> 139[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    138 -- NO --> 140[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    139 --> 140
    140 --> 141[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    141 --> 142[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    142 --> 143[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    143 --> 144[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    144 --> 145{END OF DO LOOP?}
    145 -- YES --> 146[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    145 -- NO --> 147[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    146 --> 147
    147 --> 148[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    148 --> 149[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    149 --> 150[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    150 --> 151[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    151 --> 152{END OF DO LOOP?}
    152 -- YES --> 153[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    152 -- NO --> 154[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    153 --> 154
    154 --> 155[DOUCIN = 1761 = TT(1)  
DOUCIN = 1871 = TT(2)  
DOUCIN = 1981 = TT(1)/DOUCIN + 1211]
    155 --> 156[DOUCIN = 2091 = TT(2)/DOUCIN + 1211]
    156 --> 157[DOUCIN = 1761 = TT(1)<
```



CHART TITLE - SUBROUTINE ACYSIR



2106

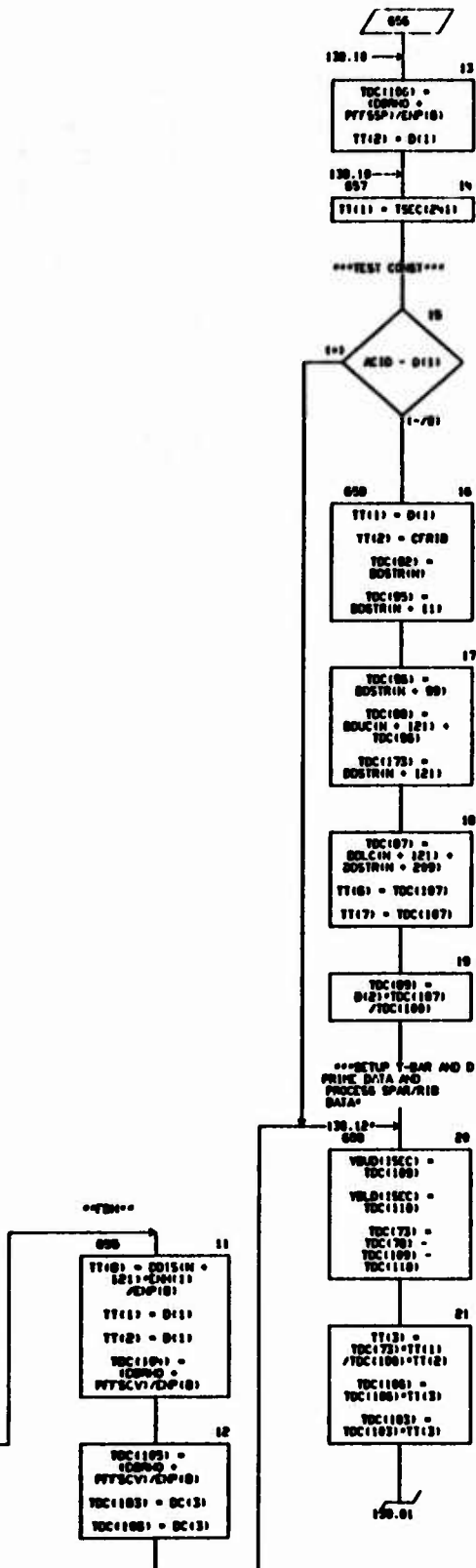
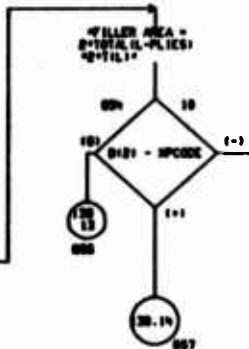
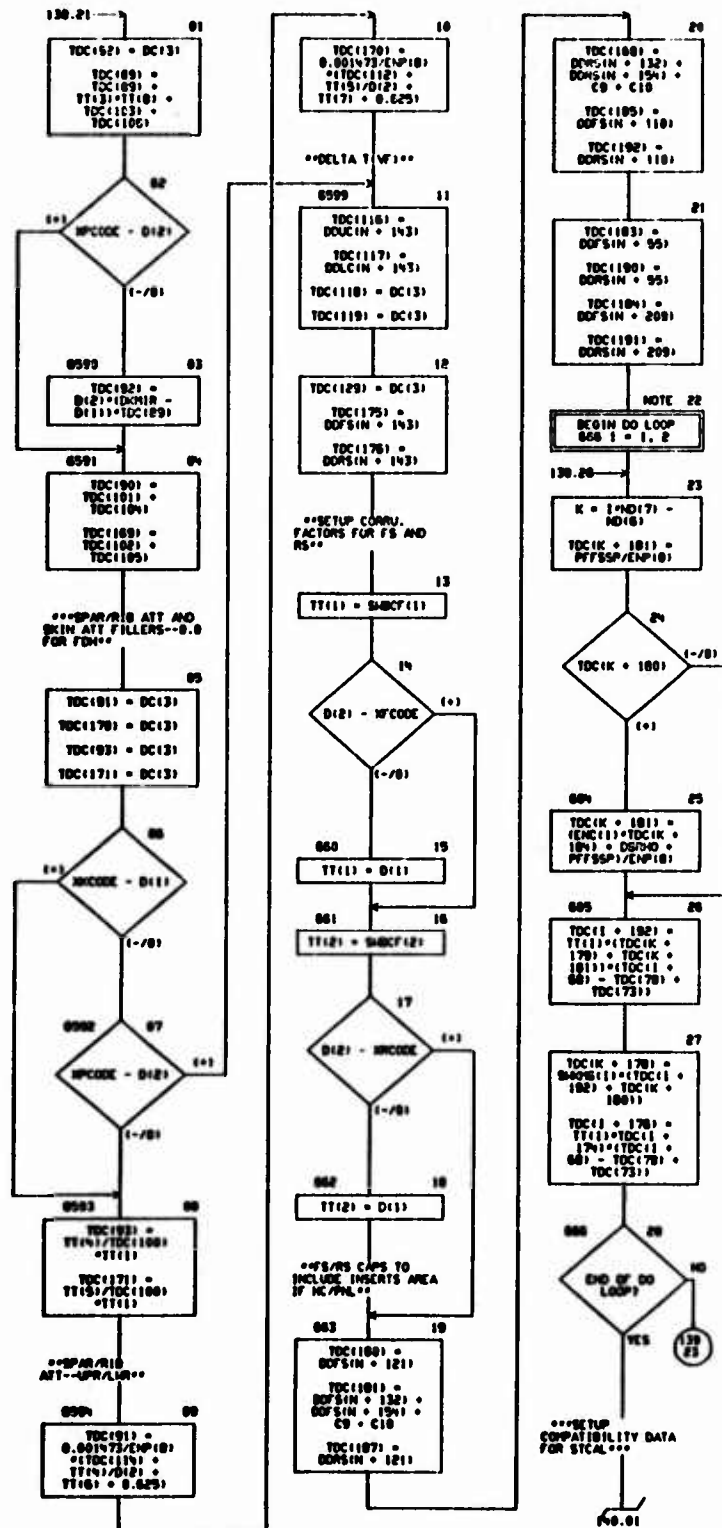
[illegible]

CHART TITLE - SUBROUTINE ACNSTR



—

## CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T(2060),D(2060),CD(2000),ND(100),TH(900),CT(2040)
DIMENSION DC(100),TDC(200),TSC(420),TSS(100),TMT(400),TSEC(300),
TC(240),TD(40),TT(24),DCL(30),
TBN(11),
DJONT(11),DBLND(11),SLCFS(5),SMBCP(2),SMBCF(2),
YBLD(11),YBLD(11),YPU(11),YBL(11)
DIMENSION CNT(30),SPB(33),SPH(33),SPCRM(11),DLRPM(44),
ENP(0),ENH(4),ENC(3),EL(15),
IEL(15,1),CALC(7,1),FCR(10,1),STRESS(0,1,20),
STRING(2,10,11),
BRNU(11),BRNL(11),
SBOOS(2),
SBOOU(11),STNOU(11),SBOUL(11),STNOL(11),
FSTU(11),FSTU(11),FSUL(11),FSTL(11),
DOSTR(330),
DOUC(220),DOLC(220),DOIS(220),DOFS(220),DORS(220)
EQUIVALENCE (DC(1),D(140)),TDC(1),T(124),TSC(1),D(194),
TSS(1),T(196),TMT(1),CD(110),TSEC(1),CD(150),
TTC(1),T(196),T(10),T(192),T(1),T(1317),
(SMBCF(1),D(427)),(CFR10,D(400)),(DBR10,D(404)),
(SMBCP(1),D(423)),(DBLND(1),D(450)),(DJONT(1),D(66)),
(SLCFS(1),D(470)),(DCL(1),TMT(25)),(TBN(1),T(942)),
(DBLND,TMT(200)),(DJONT,TMT(201)),(YPU(1),TSEC(133)),
(YBL(1),TSEC(166)),(YBLD(1),T(670)),(YBLD(1),T(690)),
(DLRPM,DCL(2)),(DLRPM,DCL(15)),(DLRPM,DCL(15)),(DLRPM,DCL(10)),
(TSEC,ND(95)),(ND(1),ND(96)),(FCR,ND(40)),(FPU,ND(24)),(IFN,ND(93)),
(IPFFSCV,CT(2047)),(IPFFSP,CT(2040))
(SBOOU(1),TH(165)),(STNOU(1),TH(177)),(FSUL(1),TH(100)),
(FSTU(1),TH(199)),(SBOUL(1),TH(210)),(STNOL(1),TH(221)),
(FSUL(1),TH(232)),(FSTL(1),TH(243)),
(BRNU(1),TH(294)),(BRNL(1),TH(295))
EQUIVALENCE (ENP(1),D(1195)),(ENH(1),D(1194)),(ENC(1),CT(2043)),
IEL(1),T(1300)),(CNT(1),T(194)),(C7,CNT(22)),
(CALC(1,1),T(100)),(FCR(1,1),T(100)),(IEL(1,1),TH(1)),
(STRESS(1,1,1),CT(1)),(STRING(1,1,1),T(1070)),
(SPB(1),T(1232)),(SPH(1),T(1205)),(SPCRM(1),T(1032)),
(DLRPM(1),CD(309)),(SBOOS(1),D(10)),(DMR1R,D(24)),
(CB,CNT(34)),(C10,CNT(35)),
(DOUC(1),CD(11)),(DOLC(1),CD(221)),(DOIS(1),CD(441)),
(DOFS(1),CD(661)),(DORS(1),CD(601))
(TCPMLU,CNT(20)),(TCALL,CNT(30)),(TCPML,CNT(31)),
(TCPMLF,CNT(32)),(TCPMLR,CNT(33))
, (DOSTR(1),CT(1321)),(AC10,D(430))
, (INCODE,CNT(10)),(INPCODE,CNT(20))
, (INFCODE,CNT(27)),(INRCODE,CNT(20))
REAL IEL

```

```

6300 FORMAT (20H1 ***SECTION DESIGN DATA**/,END DOUC)
6301 FORMAT (1H 2X,13,SE10.0)
6302 FORMAT (6H1 DOLC)
6303 FORMAT (6H1 DOIS)
6304 FORMAT (6H1 DOFS)
6305 FORMAT (6H1 DORS)
6402 FORMAT (6H1 DOSTR )

```

08/14/76

AUTOFLOW CHART SET - SHEEP MIND AND EMPERORAGE MODULE - PAGE 142

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE ACPTA\*\*\*\*\*

\*\*\*DESIGN DATA PRINT - TYPE A TORQUE-BOX SYNTHESIS SUMMARY - ADV. CO

\*\*\*\*\*



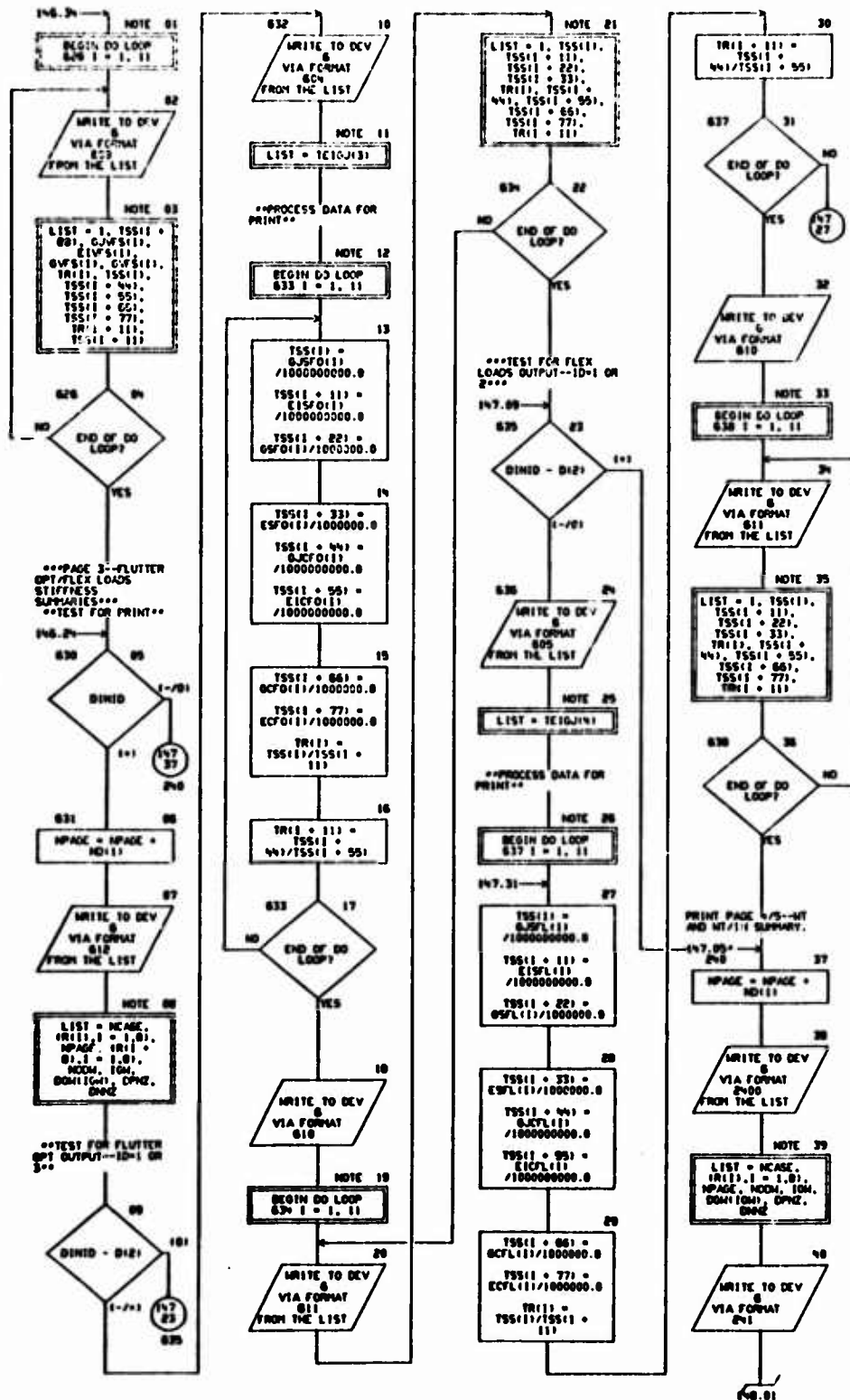


44-38861-1000

[illegible]

[illegible]

CHART TITLE - SUBROUTINE ACPRIA





```

graph TD
    140.12[140.12] --> 81[WRITE TO DEV  
VIA FORMAT  
FROM THE LIST]
    81 --> 82[NOTE 82  
LIST = I,  
YVAL(I), YVAL(I),  
YVAL(I), YVAL(I),  
TEMP(I)]
    82 --> 83{83  
END OF DO  
LOOP?}
    83 -- YES --> 140.13((140.13))
    83 -- NO --> 140.12
    140.13 --> 84[WRITE TO DEV  
VIA FORMAT  
84]
    84 --> 85[NOTE 85  
BEGIN DO LOOP  
857 N = 1, 84, 8]
    85 --> 86[N = N + ND(I)]
    86 --> 87[WRITE TO DEV  
VIA FORMAT  
87  
FROM THE LIST]
    87 --> 88[NOTE 88  
LIST = N,  
IVAL(I), I =  
N, N, I]
    88 --> 89{89  
END OF DO  
LOOP?}
    89 -- YES --> 10[N = 88  
K = 140]
    89 -- NO --> 140.12
    10 --> 11[WRITE TO DEV  
VIA FORMAT  
11  
FROM THE LIST]
    11 --> 12[NOTE 12  
LIST = N,  
IVAL(I) + 84, I =  
1, 81, N, IVAL(I) +  
144, I = 1, 81]
    12 --> 13{13  
ND(I) - 10H}
    13 -- 1 --> 14{14  
84H(I)}
    13 -- 1 --> 15((15  
13))
    14 -- 1 --> 16{16  
84H(I)}
    14 -- 1 --> 15
    16 -- 1 --> 17{17  
84H(I)}
    16 -- 1 --> 15
    17 -- 1 --> 18((18  
13))
    17 -- 1 --> 15
    15 --> 19{19  
ND(I) - 10H}
    19 -- 1 --> 20((20  
81))
    19 -- 1 --> 21{21  
ND(I) - 10H}
    21 -- 1 --> 22((22  
81))
    21 -- 1 --> 23((23  
13))
    23 --> 140.13
    140.13 --> 140.12

```

CHART TITLE - SURVIVINE ACFTA

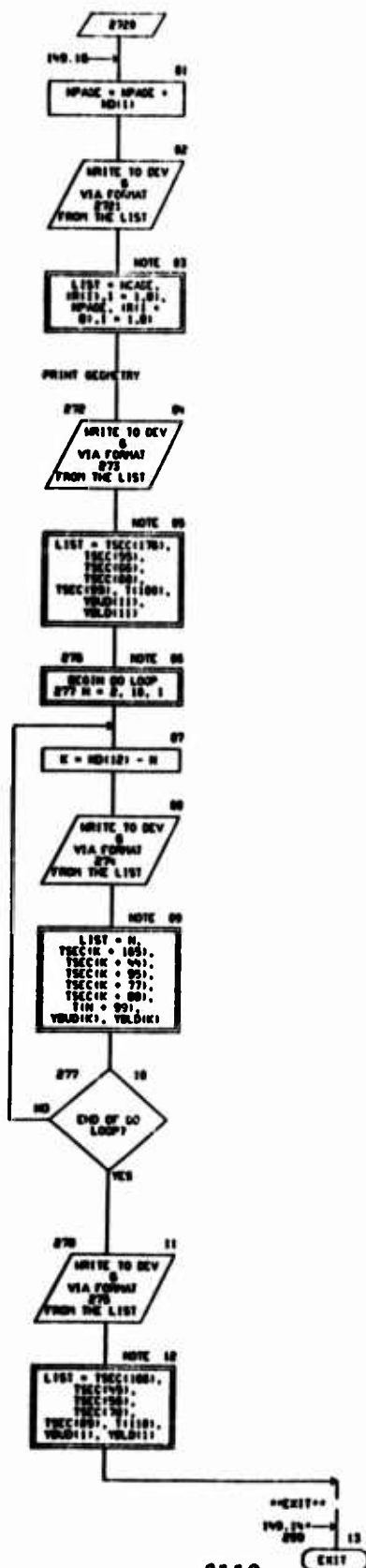


CHART TITLE - NON-PROCEDURAL STATEMENTS

```

COMMON T12201,D12201,CD12001,NO11001,TMT1111,CT120401
COMMON /MISC/ NMISC11001
DIMENSION DC11001,TDC12001,TSC14201,TSS11001,TMT14001,TSEC13001,
TCT1201,T01401,T1431,
VSTRC1111,TB1P1111,GJRD1111,
TODM111,ODM111,
TDM111,TDM111,TDM1111,
ULTPM111,ULTPM1111,ULTPT1111,
ULTNM111,ULTNM1111,ULTNT1111,
YBL1111,YBL11111,YBLD1111,YBLD11111,
R1101
DIMENSION DOUC12201,DOLC12201,DOIS12201,DOFS12201,DOIS12201,
TE10141,DOSTR13201,
GJSTD1111,ESTD1111,GSTD1111,ESTD1111,
GJCD1111,EICD1111,OCPO1111,ECHD1111,
GJFS1111,E1FS1111,GVFS1111,E1VS1111,
GJWD1111,E1WD1111,GVWD1111,E1WD1111,
GJWF1111,E1SF1111,GVWF1111,E1SF1111,
GJCF1111,E1CF1111,OCFO1111,E1CF1111,
GJFL1111,E1FL1111,GVFL1111,E1FL1111,
GJCL1111,E1CL1111,OCFL1111,E1CL1111
JENH151
EQUIVALENCE (DC111,D1140111),(TDC111,T1134111),(TSC111,T1154111),
(TSS111,T1196111),(TMT111,CD1110111),(TSEC111,CD1120111),
(TCT11,T1000111),(T011,T1020111),(VSTRC111,TSEC1100111),
(TODM111,D1C0111),(ODM111,D1102111),(OPM2,T120111),(D242,T121111),
(TRE111,T11300111),(R111,NMISC105111),
(TDM111,CD11000111),(TDM111,CD11970111),(TDMT111,CD11990111),
(ULTPM111,TSEC112111),(ULTPM111,TSEC1111),(ULTPT111,TSEC1144111),
(ULTNM111,TSEC111111),(ULTNM111,TSEC1122111),(ULTNT111,TSEC1155111),
(YBL111,TSEC1133111),(YBL111,TSEC1100111),(TB1P111,T1745111),
(YBLD111,T1670111),(YBLD111,T1690111),(GJRD111,T1660111),
(INDM1D,T157111)
EQUIVALENCE (INCASE,NO160111),(INCOM,NO156111),(ION,NO161111),
(IACCV1D,D143111),
(INPASE,NO105111)
EQUIVALENCE (W1D,D125111),(D1N1D,D127111),(TE10111,TMT703111),
(DDUC111,CD1111),(DOLC111,CD122111),(DOIS111,CD144111),
(DOFS111,CD100111),(DOFS111,CD100111),
(GJSTD111,CD1111),(ESTD111,CD112111),(GSTD111,CD123111),
(ESTD111,CD134111),(GJCD111,CD145111),(EICD111,CD156111),
(OCPO111,CD167111),(ECHD111,CD170111),
(GJFS111,CD135111),(E1FS111,CD136111),(GVFS111,CD1375111),
(E1VS111,CD136611),(GJWD111,CD109111),(E1WD111,CD1100111),
(GVWD111,CD111111),(E1WD111,CD1122111),
(GVWF111,CD1133111),(E1SF111,CD1144111),(GVWF111,CD1155111),
(E1SF111,CD1166111),(GJCF111,CD1177111),(E1CF111,CD1100111),
(OCFO111,CD1199111),(E1CF111,CD1210111),
(GJFL111,CD122111),(E1FL111,CD1232111),(GVFL111,CD1243111),
(E1FL111,CD1254111),(GJCL111,CD1265111),(E1CL111,CD1276111),
(OCFL111,CD1297111),(E1CL111,CD1290111),
(DDSTR111,CT1132111),(AC1D,D1430111),
(ENH111,D11104111)
310 FORMAT (14H CASE,14,1X,0A10,14H *ACPRTA* PAGE,14,1X,0A10,12H,6H
NOON*,11,6H 10M11,6H DGM19.1,6H M2*+F6.3,2H/-F5.3,73H
--DESIGN SUMMARY DATA--NO-KIPS/IN. STRESS-KSI--- /S
4H --SECTION LOAD AND THICKNESS DATA--STRENGTH DESIGN--
)
311 FORMAT (34H --LAMINATE PLY DATA-- )
3111 FORMAT (42H --LAMINATE PLY AND CORE DATA-- )
312 FORMAT (60H --APPLIED STRESS LEVELS AND CRITICAL LOAD C
ONDITION ID-- )
313 FORMAT (110H SECT NO/AC NO/LC NO/YAL NO/E/S O/S O/S O/S TSK/

```



## CHART TITLE - NON-PROCEDURAL STATEMENTS

```

      U TSKAL T-U T-L TCU THUS B/SP N/SP TH/TS TH/TS)
3130 FORMAT (100H SECT N/KUC N/KLC N/KYL N/C/S O/S O/TS G/AS TSK/
      U TSKAL T-U T-L T/RIB L/RIB B/STR N/S TH/TS TH/TS)
3131 FORMAT (100H SECT N/KUC N/KLC N/KYL N/C/S O/S O/TS O/RS TSK/
      U TSKAL T-U T-L T/COE N/K/C TH/TS TH/RS )
314 FORMAT (1X,12,3F7.2,F6.2,F5.2,F6.2,F6.3,F6.2,F5.1,2F6.3)
3140 FORMAT (1X,12,3F7.2,F6.2,F5.2,F6.2,F6.3,F6.2,F5.1,2F6.3)
3141 FORMAT (1X,12,3F7.2,F6.2,F5.2,F6.2,F6.3,F7.4,F6.2,2F6.3)
315 FORMAT (100H SECT L/KUC N/KUC N/KC N/KU L/KC N/KC N/KC N/L L/S N/L
      S N/S L/S N/S N/S N/TS N/TS L/RS N/RS N/RS N/RS)
3150 FORMAT (110H SECT L/KUC N/KUC N/KC L/SU N/KU L/KC N/KC N/KC L/SL N/K
      L L/R N/R N/R L/S N/S N/S N/TS N/TS L/RS N/RS N/RS N/RS)
3151 FORMAT (100H SECT L/KUC N/KUC N/KC N/KU L/KC N/KC N/KC N/L S/C
      T/T DEN/T L/S N/S N/S N/TS N/TS L/RS N/RS N/RS N/RS )
316 FORMAT (1X,12,1F5.1)
3160 FORMAT (1X,12,2F5.1)
3161 FORMAT (1X,12,8F5.1,F6.1,F6.1,F6.3,8F5.1)
317 FORMAT (100H SECT F/CUC F/SUC CLCU CLSU F/LC F/S/C CLCL CL
      BL F/S/IS CLSIS F/S/TS CLS/S F/S/RS CLS/RS)
3170 FORMAT (110H SECT FCSU FSSU FCSU CLCU CLSU F/TKL FSS/L F
      TSKL CLCL CLSL F/S/IS CLSIS F/S/TS CLS/S F/S/RS CLS/RS)
318 FORMAT (1X,12,2F7.2,F5.1,1X,2F7.2,F5.1,1X,2F7.2,F6.1,1X,2F7.2,F6.1
      ,1X,2F7.2,F6.1)
3180 FORMAT (1X,12,3F7.2,F5.1,1X,3F7.2,F5.1,1X,2F7.2,F6.1,1X,2F7.2,F6.1
      ,1X,2F7.2,F6.1)
319 FORMAT (12X,40H--- ---UPPER COVER DATA--- ---,2X,4
      0H--- ---LOWER COVER DATA--- ---)
3190 FORMAT (100H SECT L/RS ASTR BSTR TSTR MSTR F YBAR 1101
      L/L L/RS ASTR BSTR TSTR MSTR F YBAR 1101 L/L )
3191 FORMAT (1X,12,1X,F6.1,1X,F6.3,F6.2,F6.3,F5.2,3F6.3,F6.2,2X,F6.3,F6
      ,2,F6.3,F6.3,F6.3,F5.2)
600 FORMAT (140H ---BASIC STIFFNESS SUMMARY AT,F7.1,12H DEGRE
      ES---)
603 FORMAT (151H ---FLUTTER ANALYSIS STIFFNESS SUMMARY AT,F7.
      1,12H DEGREES---)
604 FORMAT (160H ---STIFFNESS SUMMARY FOR FLUTTER OPTIMIZATIO
      N ANALYSIS AT,F7.1,12H DEGREES---)
605 FORMAT (160H ---STIFFNESS SUMMARY FOR FLEXIBLE LOADS ANAL
      YSIS AT,F7.1,12H DEGREES---)
606 FORMAT (100H SECT C-J-ST E1-ST 0-ST E-ST GJ/EI GJ-CMP
      E1-CMP 0-CMP E-CMP GJ/EI RISKU RISKL RTH/S RTH/RS)
607 FORMAT (1X,12,2F6.3,F7.3,F6.3,F6.3,2X,F6.3,F7.3,F6.3,F6.3,2X,F6.
      3)
608 FORMAT (100H SECT GJ-W GJ-ST E1-ST 0-ST E-ST GJ/EI
      ROLG GJ-CMP E1-CMP 0-CMP E-CMP GJ/EI ROLC )
609 FORMAT (1X,12,F6.3,2X,F6.3,F7.3,F6.3,F6.3,2X,F6.3,F7.3,F6.3,F6
      ,3)
610 FORMAT (100H SECT GJ-ST E1-ST 0-ST E-ST GJ/EI GJ-CMP
      E1-CMP 0-CMP E-CMP GJ/EI)
611 FORMAT (1X,12,2F6.3,F7.3,F6.3,F6.3,2X,F6.3,F7.3,F6.3,F6.3)
612 FORMAT (10H CASE,1X,1X,8A10,10H *ACFRTA* PAGE,1X,1X,8A10,2X,8H
      NCMH,11,8H 10H=11,8H DCMH=1,8H NCMH=1,8H 2X=1,8H 3X=1,8H 4X=1,8H
      ---TORQUE BOX STIFFNESS SUMMARIES---10J,E1=1101-9,10
      ,E=1101-81--- )
6230 FORMAT (152H ---NO FLUTTER STIFFNESS PENALTIES--- )
2400 FORMAT (10H CASE,1X,1X,8A10,10H *ACFRTA* PAGE,1X,1X,8A10,2X,8H
      NCMH=11,8H DCMH=1,8H NCMH=1,8H 2X=1,8H 3X=1,8H 4X=1,8H )
241 FORMAT (152H ---PANEL WEIGHT SUMMARY. LBS/SIDE---/10
      0H PANEL SUM T-BOX L.E. T.E. MISC. DEL
      TA W TYP RT-RIB C SECT)
243 FORMAT (7H TOTAL,F12.2,F11.2,2F10.2,F6.2,F10.2,F11.2,2X,2F10.2,F7
      H INHD,F12.2,F11.2,2F10.2,F6.2,F10.2,15X,F10.2)
244 FORMAT (1X,12,1X,F12.2,F11.2,2F10.2,F6.2,F10.2)

```

## CHART TITLE - NON-PROCEDURAL STATEMENTS

```

845 FORMAT (7H 000,F10.2,F11.2,F10.2,F9.2,F10.2,F11.2)
851 FORMAT (40H ---SECTION/INCH SUMMARY---/24H SECT.
      TOTAL T-BRK L.E. T.E. MISC. DELTA W CONC.
      ITEMS )
852 FORMAT (4X,12,1X,F10.4,F11.4,F10.4,F9.4,F10.4,F11.4)
861 FORMAT (40H ---DESIGN LOADS SUMMARY---/110H SECT.
      +VULT) +MULT) +TULT) -VULT) -MULT) -TULT
      T) UDM1-G) PMH1-G) TDM1-G) )
862 FORMAT (4X,12,F11.1,F13.1,F12.1,F11.1,F12.1,F10.1,F11.1)
870 FORMAT (6H CAGE,14,1X,BA10,14H *ACRPA* PAGE,14,15X,BA10,1724X,6
      H NDM11,6H DM11,6H DM170.1,6H MZ170.3,24/-FS.3,1744H
      ---SECTION DESIGN Y-BAR DATA--- )
880 FORMAT (40H STA YBUD) YBUA) YBLD) YBLA) TD-M/IN )
881 FORMAT (1H 3X,12,W9.4,F9.4)
893 FORMAT (14H,40H ---ROOT SECTION HEIGHT SUMMARY---/
      6H TMT)
894 FORMAT (2X,12,F11.4)
895 FORMAT (2X,12,F11.4)
896 FORMAT (6H CAGE,14,1X,BA10,14H *ACRPA* PAGE,14,15X,BA10)
897 FORMAT (40H ---SECTION GEOMETRY SUMMARY---/100H
      SECT. YSTRC WIDTH BAWC OFS DRS C-ACRO
      T-BU Y-BL /6H ROOT2F10.3,F9.3,F10.3,F
      9.4)
898 FORMAT (5X,12,1X,F10.3,F9.3,F10.3,F9.4)
899 FORMAT (6H T1PF10.3,F9.3,F10.3,F9.4,177)

```

CHART TITLE - INTERFACTORY COMMENTS

\*\*\*\*\*

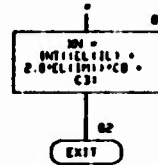
\*\*\*\*\*FUNCTION 10N\*\*\*\*\*

\*\*EVALUATION OF NO. OF N-PLIES FOR GIVEN L AND M PLIES\*\*

\*\*\*\*\*

CHART TITLE - FUNCTION WHILE, INI

FUNCTION TO CALCULATE  
NUMBER OF DEFECTIVE  
PLIES FOR A LAMINATE  
NUMBER OF PLIES IS  
APPROXIMATE AT 60 PER  
CENT



08/14/76

AUTOFLOW CHART SET - SHEEP WINDS AND EMPENNAGE MODULE - PAGE 156

CHART TITLE - NON-PROCEDURAL STATEMENTS

```
COMMON T(9160)  
DIMENSION EL(15),CNT(30)  
EQUIVALENCE (EL(1),T(1300)),(CNT(1),T(1541)),  
(C3,CNT(13)),(C0,CNT(23))
```

CHART TITLE - INTRODUCTORY CONTENTS

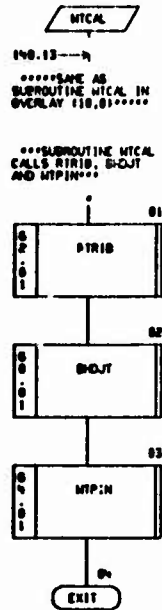
\*\*\*\*\*

\*\*\*\*\*SUBROUTINE MICAL\*\*\*\*\*

\*\*SECTION/PANEL MENTION EVALUATION\*\*

\*\*\*\*\*

## CHART TITLE - SUBROUTINE MTCAL



06/14/76

AUTOFLUX C-VT SET - SHEEP NING AND EXPERIMENTAL MODULE - PAGE 159

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE SHOT\*\*\*\*\*

\*\*\*\*\*BULHEAD AND JOINT HEIGHT EVALUATION\*\*\*\*\*

\*\*\*\*\*



06/14/74

AUTOFLOW CHART SET - SHEEP MIN. AND DISTANCE MODULE - PAGE 100

CHART TITLE - SUBROUTINE BOUT

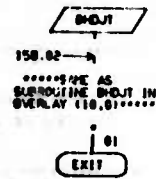


CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE RTAB\*\*\*\*\*

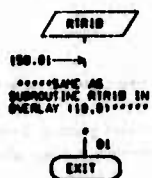
\*\*ROOT RIG AND SHEAR TIE HEIGHT EVALUATION\*\*

\*\*\*\*\*

08/14/74

AUTOFLOW CHART SET - SHEEP KING AID EMPLOYEE MODULE - PAGE 162

CHART TITLE - SUBROUTINE RTIRB



06/10/76

AUTOFLOW CHART SET - SLEEP WING AND EXPERIENCE MODULE - PAGE 103

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

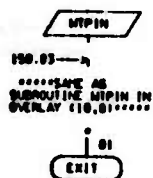
\*\*\*\*\*SUBROUTINE NIPIN\*\*\*\*\*

\*\*\*SECTION HEIGHT PER INCH EVALUATION\*\*\*

\*\*\*\*\*

AUTOFLOW CHART SET - BAREP WIND AND ENTRENCHMENT MODULE

CHART TITLE - SUBROUTINE WIPIN



08/14/74

AUTOFLW CHART SET - SHEEP HINS AND EPPENHAGE MODULE - PAGE 105

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*SUBROUTINE SUBDA\*\*\*\*\*

\*\*BEADHEIGHT AND COUPLE ARM ADJUSTMENT FOR PASS (1)\*\*

\*\*\*\*\*

05/14/74

AUTOFLOW CHART SET - SHEEP HIND AND EFTYHAGE MODULE - PAGE 106

CHART TITLE - SUBROUTINE DMYBA

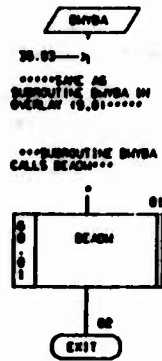


CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE DEASH\*\*\*\*\*

\*\*\*\*\*TORQUE INERTIA LOAD EVALUATION\*\*\*\*\*

\*\*\*\*\*



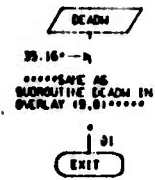
08/14/74

AUTOFLOW CHART SET - SWEEP

MINI AND ENTERFACE MODULE -

PAGE 108

CHART TITLE - SUBROUTINE DEADN



06/14/79

AUTOFLOW CHART SET - SHEEP HIND AND ENTRANCE MODULE - PAGE 109

CHART TITLE - INTRODUCTORY COMMENTS

.....

\*\*\*\*\*SUBROUTINE CSECM\*\*\*\*\*

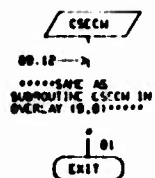
\*\*CENTER-SECTION HEIGHT EVALUATION\*\*

.....

06/14/74

AUTOFLOW CHART SET - SHELPS MIND AND EMPLOYEE MODULE - PAGE 170

CHART TITLE - SUBROUTINE CSECH



08/14/74

AUTOFLOW CHART SET - SHEEP WING AND EXFERENCE MODULE - PAGE 171

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE PIVOT\*\*\*\*\*

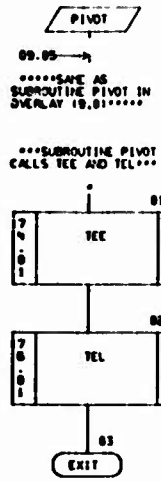
\*\*\*PIVOT STRUCTURE SYNTHESIS AND HEIGHT EVALUATION\*\*\*

\*\*\*\*\*

06/14/74

AUTOFLOW CHART SET - SLEEP MIND AND EMPLOYMENT MODULE - PAGE 172

CHART 117C - SUBROUTINE PIVOT



05/14/74

AUTOFLW CHART SET - SHEEP HIND AND EMERGENCY MODULE - PAGE 173

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE TEE\*\*\*\*\*

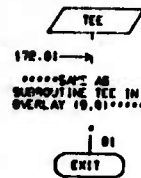
\*\*\*PIVOT DESIGN/SYNTHESIS DATA EVALUATION\*\*\*

\*\*\*\*\*

08/14/74

AUTOFLIGHT CHART SET - SHEEP WING AND ENGINEAGE MODULE - PAGE 174

CHART TITLE - SUBROUTINE TEC



08/14/74

AUTOFLOW CHART SET - SHEEP - MIND AND ESTIMATION MODE - PAGE 175

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*SUBROUTINE TEL\*\*\*\*

\*\*\*PIVOT DESIGN/SYNTHESIS DATA EVALUATION\*\*\*

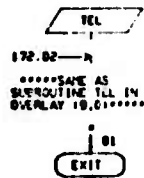
\*\*\*\*\*



06/14/74

AUTIFLOW CHART SET - SHEEP WING AND EMPLOYMENT MOBILE - PAGE 176

CHART TITLE - SUBROUTINE TEL



06/14/74

AUTOFLON CHART SET - SHELVE MINO AND EFFICIENCY MODULE - PAGE 177

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE DLPVT\*\*\*\*\*

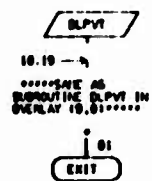
\*\*\*EVALUATION OF T-BOX STRUCTURE REPLACED BY PIVOT\*\*\*

\*\*\*\*\*

08/14/74

AUTOFLOW CHART SET - SHEEP MING AND EMPLOYING MOUNT - PAGE 170

CHART TITLE - SUBROUTINE DLPVT



06/14/74

AUTOFLOW CHART SET - SHEEP MINING AND EXPENSES MODULE - PAGE 179

CHART TITLE - INTRODUCTORY CONTENTS

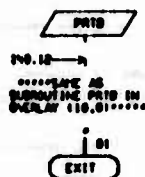
\*\*\*\*\*

\*\*\*\*\*SUBROUTINE PRIB\*\*\*\*\*

\*\*\*DESIGN DATA PRINT - TYPE B SECTION DESIGN DETAIL SUMMARY\*\*\*

\*\*\*\*\*

CHART TITLE - SENSITIVE PRIO



06/19/76

AUTOFLOW CHART SET - SHEEP HIND AND ENTERPAGE MODULE - PAGE 101

CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE PRIC\*\*\*\*\*

\*\*\*DESIGN DATA PRINT - TYPE C SECTION HEIGHT DETAIL SUMMARY\*\*\*

\*\*\*\*\*

08/14/76

AUTOFLOW CHART SET - SAGEP WIND AND EMPLOYMENT MODALL - PAGE 102

CHART TITLE - SUBROUTINE PRIC



CHART TITLE - INTRODUCTORY COMMENTS

\*\*\*\*\*

\*\*\*\*\*SUBROUTINE PRIN\*\*\*\*\*

\*\*\*DESIGN DATA PRINT - TYPE H C-SEC/PINOT DESIGN SUMMARY\*\*\*

\*\*\*\*\*



06/14/74

AUTOFLON CHART SET - SWEEP MIMO AND EYE/SPACE MODULE - PAGE 104

CHART TITLE - SUBROUTINE PRTH

