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1 0001 0 %TITLE 'RUNOFF termination and cleanup'
2 0002 0 MODULE rterm ( IDENT = 'V04-000'
3 P 0003 0 %BLISS32 [ , ADDRESSING_MODE (EXTERNAL = LONG_RELATIVE,
4 0004 0 NONEXTERNAL = LONG_RELATIVE)]
5 0005 0 ) =
6 0006 1 BEGIN
7 0007 1
8 0008 1 *****
9 0009 1 *
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28 0028 1 *
29 0029 1 *****
30 0030 1
31 0031 1
32 0032 1 ++
33 0033 1 FACILITY: DSR (Digital Standard RUNOFF) / DSRPLUS
34 0034 1
35 0035 1 ABSTRACT: Routine for normal termination of a document.
36 0036 1
37 0037 1 ENVIRONMENT: Transportable
38 0038 1
39 0039 1 AUTHOR: R.W.Friday CREATION DATE: April, 1978
40 0040 1

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42 0041 1 %SBTTL 'Revision History'
43 0042 1   MODIFIED BY:
44 0043 1
45 0044 1   032   KFA00032   Ken Alden   21-Oct-1983
46 0045 1   RNFIPF would still get output if the last page of the file
47 0046 1   was the one selected by the /PAGES qualifier. This has
48 0047 1   been corrected.
49 0048 1
50 0049 1   031   KFA00031   Ken Alden   06-Oct-1983
51 0050 1   Added a warning message for users who said /PAGES but
52 0051 1   issued a page string that never matched any pages in the doc.
53 0052 1
54 0053 1   030   REM00030   Ray Marshall 10-Aug-1983
55 0054 1   KWTRPN and OUTCREP were declared (but not used) when DSRPLUS
56 0055 1   was false. This caused LINKer errors when building RUNOFF.
57 0056 1
58 0057 1   029   REM00029   Ray Marshall 22-Jul-1983
59 0058 1   Defined TTYRES and DISPSI as NOVALUE to match the way they
60 0059 1   are coded.
61 0060 1   Added BLISS36 ONLY logic at the end of routine RTERM to release
62 0061 1   the dynamic memory used for the cross-ref data structures
63 0062 1   back to the system. Then, we can clear the listhead (pointer)
64 0063 1   so that when the .BRN is read on another run, it doesn't
65 0064 1   have the old names lying around. This was needed because
66 0065 1   in this environment, the image does not have to be reloaded
67 0066 1   for successive runs through DSR. This is only a DSRPLUS
68 0067 1   addition.
69 0068 1
70 0069 1   028   KFA00028   Ken Alden   19-Jul-1983
71 0070 1   Fixed the /pages bug with gca_page_cnt.
72 0071 1
73 0072 1   027   KFA00027   Ken Alden   14-Jul-1983
74 0073 1   Suppresed CRU if /auto.
75 0074 1   Removed CR3.
76 0075 1
77 0076 1   026   KFA00026   Ken Alden   13-Jul-1983
78 0077 1   Altered the output of cref info messages slightly.
79 0078 1
80 0079 1   025   KAD00025   Keith Dawson 10-Jun-1983
81 0080 1   Cref-changed condition slould not increment /AUTO count in
82 0081 1   first pass (already been incremented).
83 0082 1
84 0083 1   024   RER00024   Ron Randall  1-Jun-1983
85 0084 1   Added code that checks for need to output deferred figures.
86 0085 1
87 0086 1   023   KAD00023   Keith Dawson 27-May-1983
88 0087 1   Make sure Cref-changed condition increments /AUTO count.
89 0088 1
90 0089 1   022   KAD00022   Keith Dawson  3-May-1983
91 0090 1   Suppress 'Cref-changed' messages on early /AUTO passes.
92 0091 1
93 0092 1   021   KAD00021   Keith Dawson 11-Apr-1983
94 0093 1   Add new termination messages (RNFPC2, PC3, PC4, PC5) for
95 0094 1   information written to the .BRN file (and for DSRPLUS
96 0095 1   cross-referencing, also read from the input .BRN file).
97 0096 1
98 0097 1   020   RER00020   Ron Randall 17-Mar-1983

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RTEKM  
V04-000

RUNOFF termination and cleanup  
Revision History

H 13  
16-Sep-1984 01:41:18  
14-Sep-1984 13:07:58

VAX-11 Bliss-32 V4.0-742  
DISK\$VMSMASTER:[RUNOFF.SRC]RTERM.BLI;1 (2) Page 3

RTE  
V04

|   |     |      |   |   |     |   |
|---|-----|------|---|---|-----|---|
| : | 99  | 0098 | 1 | : |     |   |
| : | 100 | 0099 | 1 | : |     |   |
| : | 101 | 0100 | 1 | : | 019 | For DSRPLUS: Added termination for topnotes.              |
| : | 102 | 0101 | 1 | : |     | REM00019 Ray Marshall 07-Mar-1983                         |
| : | 103 | 0102 | 1 | : |     | Global edit of all modules. Updated module names, idents, |
| : | 104 | 0103 | 1 | : |     | copyright dates. Changed require files to BLISS library.  |
| : | 105 | 0104 | 1 | : |     |   |

.....  
.....

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107 0105 1 %SBTTL 'Module Level Declarations'
108 0106 1
109 0107 1 : INCLUDE FILES:
110 0108 1
111 0109 1 LIBRARY 'NXPORT:XPORT'; : XPORT Library
112 0110 1 REQUIRE 'REQ:RNODEF'; : RUNOFF variant definitions
113 0241 1
114 U 0242 1 %IF DSRPLUS %THEN
115 U 0243 1 LIBRARY 'REQ:DPLLIB'; : DSRPLUS BLISS Library
116 0244 1 %ELSE
117 0245 1 LIBRARY 'REQ:DSRLIB'; : DSR BLISS Library
118 0246 1 %FI
119 0247 1
120 0248 1
121 0249 1 : MACROS:
122 0250 1
123 0251 1 MACRO
124 0252 1
125 0253 1 : Close a file on a given IOB, if it was open.
126 0254 1
127 M 0255 1 close_if_open (which_iob) =
128 M 0256 1 IF .which_iob [IOB$V_OPEN]
129 M 0257 1 THEN
130 M 0258 1 status = $XPO_CLOSE (IOB = which_iob)
131 M 0259 1 %;
132 0260 1
133 0261 1 MACRO
134 0262 1
135 0263 1 : This macro makes certain that when blank lines
136 0264 1 : are skipped, change bars don't get output.
137 0265 1
138 M 0266 1 no_bar_skip (n) =
139 M 0267 1 BEGIN
140 M 0268 1 LOCAL
141 M 0269 1 holdBars;
142 M 0270 1
143 M 0271 1 holdBars = .tsfBars;
144 M 0272 1 tsfBars = false;
145 M 0273 1 uskipl (n);
146 M 0274 1 tsfBars = .holdBars;
147 M 0275 1 END %;
148 0276 1
149 0277 1 : EXTERNAL REFERENCES:
150 0278 1
151 0279 1 EXTERNAL
152 0280 1 fnct : fnct_definition,
153 0281 1 fra : FIXED_STRING,
154 0282 1 gca : gca_definition,
155 0283 1 hct : hct_definition,
156 U 0284 1 %IF DSRPLUS %THEN : Keyword Table for .Reference_Point Names
157 U 0285 1 kwtrpn,
158 0286 1 %FI
159 0287 1 phan : phan_definition,
160 0288 1 tsf : tsf_definition,
161 0289 1 brnoob : $XPO_IOB (),
162 0290 1 tteioB : $XPO_IOB (),
163 0291 1 ttiioB : $XPO_IOB (),

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: 164      0292 1      ttojob      : $XPO_IOB (),
: 165      0293 1      tsiiojob   : $XPO_IOB ();
: 166      0294 1
: 167      U 0295 1 %IF DSRPLUS %THEN
: 168      U U 0296 1 EXTERNAL
: 169      U U 0297 1      topnot      : 'n definition,
: 170      U U 0298 1      tniiojob   : REF $XPO_IOB (),
: 171      U U 0299 1      tnuiojob   : REF $XPO_IOB ();
: 172      U U 0300 1
: 173      U U 0301 1 EXTERNAL LITERAL
: 174      U U 0302 1      rnfpc4,
: 175      U U 0303 1      rnfpc5,
: 176      U U 0304 1      rnfcr4,
: 177      U U 0305 1      rnfcr5,
: 178      U U 0306 1      rnfcr6,
: 179      U U 0307 1      rnfcr7,
: 180      U U 0308 1      rnfcr8,
: 181      U U 0309 1      rnfcr9;
: 182      U U 0310 1
: 183      U U 0311 1 EXTERNAL ROUTINE
: 184      U U 0312 1      tnfil,
: 185      U U 0313 1      erms,
: 186      U 0314 1      tpnote;
: 187      0315 1 %FI
: 188      0316 1
: 189      0317 1 EXTERNAL LITERAL
: 190      0318 1      rnfefd,
: 191      0319 1      rnfefd,
: 192      0320 1      rnfefl,
: 193      0321 1      rnfefp,
: 194      0322 1      rnfefr,
: 195      0323 1      rnfepc,
: 196      0324 1      rnfepc,
: 197      0325 1      rnfepc;
: 198      0326 1
: 199      0327 1 EXTERNAL ROUTINE
: 200      0328 1      botpag,      clh,      cpageb,
: 201      U 0329 1      erm,      erml,      fn,      foobot,      fooout,
: 202      U 0330 1 %IF DSRPLUS %THEN
: 203      U 0331 1      outcref,
: 204      0332 1 %FI
: 205      0333 1      outnj,      putmsg,      remneg,      remmrg,
: 206      0334 1      toppag,      tpr,      tsttfe,      uform,      uskipl;
: 207      0335 1
: 208      U 0336 1 %IF (%BLISS (BLISS36) AND DSRPLUS) %THEN
: 209      U 0337 1 EXTERNAL ROUTINE
: 210      U 0338 1      dispst : NOVALUE,      ttyres : NOVALUE,
: 211      U 0339 1      freref : NOVALUE;      ! Free's C-REF data structure buffers.
: 212      0340 1 %FI
: 213      0341 1

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: 215 0342 1 %SBTTL 'RTERM - RUNOFF termination'
: 216 0343 1 GLOBAL ROUTINE rterm : NOVALUE =
: 217 0344 1
: 218 0345 1 |++
: 219 0346 1 | FUNCTIONAL DESCRIPTION:
: 220 0347 1 |
: 221 0348 1 |     RUNOFF termination.
: 222 0349 1 |
: 223 0350 1 | FORMAL PARAMETERS:     None
: 224 0351 1 |
: 225 0352 1 | IMPLICIT INPUTS:       None
: 226 0353 1 |
: 227 0354 1 | IMPLICIT OUTPUTS:     None
: 228 0355 1 |
: 229 0356 1 | ROUTINE VALUE:
: 230 0357 1 | COMPLETION CODES:     None
: 231 0358 1 |
: 232 0359 1 | SIDE EFFECTS:         None
: 233 0360 1 | --
: 234 0361 1
: 235 0362 2     BEGIN
: 236 0363 2     LOCAL
: 237 0364 2         hold_phan_top_page,
: 238 0365 2         status;
: 239 0366 2
: 240 0367 2     tsttfe (0);           ! Check for too few ends.
: 241 0368 2     remneg ();           ! Check for unreported bad backdents.
: 242 0369 2     remmrg ();          ! Check for unreported bad margin settings.
: 243 0370 2
: 244 0371 2     IF .fnct_collecting
: 245 0372 2     THEN
: 246 0373 3         BEGIN
: 247 0374 3         erml (rnfefd);
: 248 0375 3         fn (h_end_footnote);
: 249 0376 2         END;
: 250 0377 2
: 251 U 0378 2 %IF DSRPLUS %THEN
: 252 U 0379 2
: 253 U 0380 2     Missing .FND TOPNOTE.
: 254 U 0381 2
: 255 U 0382 2     IF .tn_collecting
: 256 U 0383 2     THEN
: 257 U 0384 2         BEGIN
: 258 U 0385 2         erml (rnfefd);
: 259 U 0386 2         tpnote (h_end_topnote);
: 260 U 0387 2
: 261 U 0388 2
: 262 U 0389 2     | If topnote file happens to be open, close it.
: 263 U 0390 2
: 264 U 0391 2     IF .tnuiob [IOBSV_OPEN]
: 265 U 0392 2     THEN
: 266 U 0393 2         BEGIN
: 267 U 0394 2         tn_type = 0;
: 268 U 0395 2         tnfil (tn_close);
: 269 U 0396 2         END;
: 270 U 0397 2
: 271 U 0398 2     IF .tniob [IOBSV_OPEN]

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272 U 0399          THEN
273 U 0400          BEGIN
274 U 0401          tn_type = 1;
275 U 0402          tnfil (tn_close);
276 U 0403          END;
277 U 0404
278 U 0405          END;
279 U 0406
280 U 0407          |
281 U 0408          | Delete both topnote files.
282 U 0409          |
283 U 0410          tn_type = 0;
284 U 0411          tnfil (tn_delete);
285 U 0412          tn_type = 1;
286 U 0413          tnfil (tn_delete);
287 U 0414          %FI
288 U 0415
289 U 0416          outnj ();
290 U 0417          hold_phan_top_page = .phan_top_page;
291 U 0418          | Remember if the user said
292 U 0419          | .PAGE as the last thing in
293 U 0420          | his .RNO file.
294 U 0421          %IF DSRPLUS %THEN
295 U 0422          | If any cross-reference information has not been written
296 U 0423          | to the .BRN file yet, write it now.
297 U 0424          |
298 U 0425          | WHILE .tsf_cref_data NEQ 0 DO
299 U 0426          | BEGIN
300 U 0427          | LOCAL current_block : REF VECTOR [0];
301 U 0428          | current_block = .tsf_cref_data;
302 U 0429          | erms (rnfile,
303 U 0430          | CHSPTR(current_block[5]), .current_block[4]);
304 U 0431          | outcref ()
305 U 0432          | END;
306 U 0433          %FI
307 U 0434          |
308 U 0435          | Force out waiting footnotes, if any.
309 U 0436          |
310 U 0437          | IF .fnct_count NEQ 0
311 U 0438          | THEN
312 U 0439          | | There are footnotes to be output.
313 U 0440          | IF NOT .phan_paging OR (.phan_llines GEQ (2 * .phan_slines))
314 U 0441          | THEN
315 U 0442          | | If not paging, just put out footnotes immediately.
316 U 0443          | | Ditto, if the page is rather long.
317 U 0444          | |
318 U 0445          | BEGIN
319 U 0446          | |
320 U 0447          | | Special case: We're at the very top of the first page.
321 U 0448          | |
322 U 0449          | IF .phan_top_first
323 U 0450          | THEN
324 U 0451          | toppag ();
325 U 0452          |
326 U 0453          |
327 U 0454          | foout (.fnct_count) ! Dump them all at once.
328 U 0455          | END

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329 0456 2 ELSE
330 0457 2
331 0458 2
332 0459 2
333 0460 2
334 0461 2
335 0462 2
336 0463 2
337 0464 2
338 0465 2
339 0466 2
340 0467 2
341 0468 2
342 0469 2
343 0470 2
344 0471 2
345 0472 2
346 0473 2
347 0474 2
348 0475 2
349 0476 2
350 0477 2
351 0478 2
352 0479 2
353 0480 2
354 0481 2
355 0482 2
356 0483 2
357 0484 2
358 0485 2
359 0486 2
360 0487 2
361 0488 2
362 0489 2
363 0490 2
364 0491 2
365 0492 2
366 0493 2
367 0494 2
368 0495 2
369 0496 2
370 0497 2
371 0498 2
372 0499 2
373 0500 2
374 0501 2
375 0502 2
376 0503 2
377 0504 2
378 0505 2
379 0506 2
380 0507 2
381 0508 2
382 0509 2
383 0510 2
384 0511 2
385 0512 2

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ELSE
: There's a whole pile of footnotes left over, and they
: have to be output at the bottom of the page. This may involve
: spreading them out across several pages.
BEGIN
: Special case: We're at the very top of the first page.
IF .phan_top_first
THEN
toppag ();

: Loop over all remaining footnotes
WHILE 1 DO
BEGIN
: First get rid of as many footnotes as possible.
foobot ();

: Now see if there's any more to be output. If not, we're at
: the real end of the document (almost).
IF .fnct_count GTR 0
THEN
: Because not all footnotes were output, we have to
: start a new page, so that successive iterations
: through this loop force out additional ones.
BEGIN
botpag (); ! First, finish the bottom of the page
toppag (); ! And now start the next page.
END
ELSE
: All footnotes have been output. Termination of this
: page is handled in a special way.
EXITLOOP
END
END;

: Force out FIGURE DEFERRED space, if any.
IF .phan_figure NEQ 0
THEN
BEGIN

```



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443 0570 2      |
444 0571 2      |      | If user said /NOOUTPUT, don't call CLH.
445 0572 2      |      |
446 0573 2      |      | THEN
447 0574 2      |      |
448 0575 2      |      |      | User said .PAGE after all text was finished, intending
449 0576 2      |      |      | to generate a form-feed
450 0577 2      |      |
451 0578 2      |      |      | BEGIN
452 0579 2      |      |      | fs_init (fra);
453 0580 2      |      |      | fs_wchar (fra, %O'14');      | Insert a form feed
454 0581 2      |      |      | clh (clh_out_nocrlf)
455 0582 2      |      |      | END;
456 0583 2      |
457 U 0584 2      |      | %IF DSRPLUS %THEN
458 U 0585 2      |      |     IF .gca_cref_changed      | Did one change on last run?
459 U 0586 2      |      |     THEN
460 U 0587 2      |      |     BEGIN
461 U 0588 2      |
462 U 0589 2      |      | %IF %BLISS (BLISS32) %THEN
463 U 0590 2      |      | +
464 U 0591 2      |      | | This logic increments the rerun count if necessary. It assures that the
465 U 0592 2      |      | | file will be rerun only if the user said /AUTO. On Pass 1, if no previous
466 U 0593 2      |      | | .BRN file existed, the rerun count has already been incremented (by DOOPTS),
467 U 0594 2      |      | | so we do not increment again.
468 U 0595 2      |      | |
469 U 0596 2      |      | |     IF .gca_black_box
470 U 0597 2      |      | |     AND
471 U 0598 2      |      | |     ( (.gca_pass_count NEQ 1)
472 U 0599 2      |      | |     OR
473 U 0600 2      |      | |     .gca_old_brn_exists )
474 U 0601 2      |      | | THEN
475 U 0602 2      |      | |     gca_rerun_count = .gca_rerun_count + 1;
476 U 0603 2      |      | |
477 U 0604 2      |      | |     IF .gca_pass_count EQL 4
478 U 0605 2      |      | |     THEN
479 U 0606 2      |      | |     BEGIN
480 U 0607 2      |      | |     putmsg (rnfcro, 0, 0);      | Tell user cross-refs are oscillating,
481 U 0608 2      |      | |     putmsg (rnfcrl, 0, 0);      | ... and how he can find out where.
482 U 0609 2      |      | |     END
483 U 0610 2      |      | | ELSE
484 U 0611 2      |      | |
485 U 0612 2      |      | |     IF .gca_pass_count GTR .gca_rerun_count
486 U 0613 2      |      | |     THEN
487 U 0614 2      |      | |     BEGIN
488 U 0615 2      |      | |     %FI
489 U 0616 2      |      | |     putmsg (rnfcrc, 0, 0);      | Tell user forward cross-refs changed,
490 U 0617 2      |      | |     putmsg (rnfcrl, 0, 0);      | ... and what he can do
491 U 0618 2      |      | |     putmsg (rnfcrl, 0, 0);      | ... about it.
492 U 0619 2      |      | |
493 U 0620 2      |      | | %IF %BLISS (BLISS32) %THEN
494 U 0621 2      |      | |     END;
495 U 0622 2      |      | | %FI
496 U 0623 2      |
497 U 0624 2      |      |     END;
498 U 0625 2
499 U 0626 2      |      | IF .gca_cref_errcnt GTR 0

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500 U 0627 2 THEN
501 U 0628 2 BEGIN
502 U 0629 2 putmsg (rnfcru, .gca_cref_errcnt, 0); ! Unresolved refs
503 U 0630 2 IF NOT .gca_black_box
504 U 0631 2 THEN
505 U 0632 2 putmsg (rnfcrl, 0, 0); ! ... and what he can do
506 U 0633 2 END;
507 U 0634 2 %FI
508 U 0635 2 :
509 U 0636 2 : If the user specified /PAGES but no pages were output then tell him so.
510 U 0637 2 :
511 U 0638 2 IF .gca_cmd_pages
512 U 0639 2 AND
513 U 0640 2 (.phan_lines_tp EQL 0)
514 U 0641 2 AND
515 U 0642 2 (.gca_page_cnt EQL 0)
516 U 0643 2 THEN
517 U 0644 2 putmsg (rnfipl, 0, 0);
518 U 0645 2
519 U 0646 2 IF .gca_fehler
520 U 0647 2 THEN
521 U 0648 2 putmsg (rnferd, .gca_errcnt, 0) ! If any errors were detected,
522 U 0649 2 ELSE ! report # of lines of error messages.
523 U 0650 2 ! If no errors detected and
524 U 0651 2
525 U 0652 2 IF .termination_log
526 U 0653 2 THEN ! /LOG was specified,
527 U 0654 2 putmsg (rnfned, 0, 0); ! then just identify version and
528 U 0655 2 ! report 0 diagnostics.
529 U 0656 2
530 U 0657 2 : The following IF supplies the following logic: If /NOOUT was specified,
531 U 0658 2 : this block isn't done. If not, and either /LOG was specified or errors
532 U 0659 2 : were encountered, then perform the block.
533 U 0660 2 :
534 U 0661 2 IF (.termination_log OR .gca_fehler)
535 U 0662 2 THEN ! If so, then report pages.
536 U 0663 2 :
537 U 0664 2 : This block determines whether or not there is currently a valid page
538 U 0665 2 : count. If not, it attempts to calculate one based on the number of
539 U 0666 2 : lines output.
540 U 0667 2 :
541 U 0668 2 : Then it writes the second line of the termination message to the
542 U 0669 2 : log device. This line reports the number of pages output and
543 U 0670 2 : identifies the output filename.
544 U 0671 2 :
545 U 0672 2 BEGIN
546 U 0673 2 :
547 U 0674 2 :
548 U 0675 2 : If this is a document broken up into pages, then count logical pages.
549 U 0676 2 : Otherwise, (i.e. .NO PAGING) figure out # of spooled pages this is.
550 U 0677 2 :
551 U 0678 2 IF NOT .gca_cmd_quick
552 U 0679 2 THEN
553 U 0680 2 BEGIN
554 U 0681 2 IF (NOT .phan_paging)
555 U 0682 2 THEN
556 U 0683 2 !

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557 0684 4      | Not a document organized into pages.
558 0685 4      | Assume output device spooler will break it up.
559 0686 4
560 0687 4      gca_page_cnt = .gca_page_cnt +
561 0688 4      (.phan_lines_tp + .phan_slines - 1) / .phan_slines
562 0689 4      ELSE
563 0690 4
564 0691 4      | Not .NO PAGING, so bump count only if last page is not empty.
565 0692 4      |
566 0693 4      IF (.phan_lines_tp GTR 0)
567 0694 5      AND
568 0695 4      (NOT .gca_skip_out OR .gca_page_cnt GTR 0)
569 0696 5      THEN
570 0697 4      gca_page_cnt = .gca_page_cnt + 1;
571 0698 4
572 0699 4
573 0700 4      | Report how many pages generated and to what file.
574 0701 4      |
575 0702 4      putmsg (rnfpc1, .gca_page_cnt, 0);
576 0703 4      END;
577 0704 3
578 0705 3
579 0706 3
580 0707 3      | Report on what information, if any, was written to a .BRN file.
581 0708 3      | (This is reported whether or not Quick processing was in effect.)
582 0709 3      | If doing cross-referencing, also report how many cross-referencing
583 0710 3      | hits were read from the old (input) .BRN file.
584 0711 3
585 0712 3      SELECT true OF
586 0713 3      SET
587 0714 3      [.gca_index_cnt GTR 0] : putmsg (rnfpc2, .gca_index_cnt, 0);
588 0715 3      [.gca_contents_cnt GTR 0] : putmsg (rnfpc3, .gca_contents_cnt, 0);
589 0716 3
590 U 0717 3      %IF DSRPLUS %THEN
591 UU 0718 3      [.gca_new_cref_cnt GTR 0] : putmsg (rnfpc4, .gca_new_cref_cnt, 0);
592 U 0719 3      [.gca_old_cref_cnt GTR 0] : putmsg (rnfpc5, .gca_old_cref_cnt, 0);
593 0720 3      %FI
594 0721 3
595 0722 3      TES;
596 0723 3
597 0724 3      END;
598 0725 3
599 U 0726 3      %IF (%BLISS (BLISS36) AND DSRPLUS) %THEN
600 UU 0727 3      +
601 UU 0728 2      | Call TTYRES to restore terminal to its original mode (don't pass
602 UU 0729 2      | escape sequences, and reset wrapping width). This call is made only
603 U 0730 2      | if the user said /DEC=VT100, which caused these terminal characteristics
604 U 0731 2      | to be modified. In this case, the saved terminal width in GCA_TWIDTH_36
605 U 0732 2      | will be different than its initialized value of -1.
606 UU 0733 2      -
607 UU 0734 2      dispsi (); ! Disable the PSI CTRL/C interrupt.
608 UU 0735 2
609 UU 0736 2      IF .gca_twidth_36 NEQ -1
610 U 0737 2      THEN
611 U 0738 2      ttyres ();
612 0739 2      %FI
613 0740 2

```

```

614      0741      2      |
615      0742      2      |      Close all files.
616      0743      2      |
617      0744      2      |      close_if_open (brnoob);          ! Close intermediate binary file.
618      0745      2      |      close_if_open (tteiob);
619      0746      2      |      close_if_open (ttiioB);
620      0747      2      |      close_if_open (ttoiob);
621      0748      2      |      close_if_open (tsiioB);
622      0749      2      |
623      U 0750      2      |      %IF (%BLISS (BLISS36) AND DSRPLUS) %THEN
624      U 0751      2      |      +
625      U 0752      2      |      | If there any entries in the cross-ref structure, make sure we release
626      U 0753      2      |      | all of that dynamic memory and clear out the listhead's pointer. This
627      U 0754      2      |      | is necessary because of the interactive way DSR/PLUS is used on TOPS-20.
628      U 0755      2      |      | i.e. when RUNOFF is reentered, we don't want the previous run's text
629      U 0756      2      |      | lying around.
630      U 0757      2      |      |
631      U 0758      2      |      | BEGIN
632      U 0759      2      |      | LOCAL
633      U 0760      2      |      |     current_entry : REF VECTOR[0],
634      U 0761      2      |      |     desc : REF $STR_DESCRIPTOR( CLASS=DYNAMIC ), ! string desc.
635      U 0762      2      |      |     temp_pointer;
636      U 0763      2      |      |
637      U 0764      2      |      |     current_entry = .kwtrpn;
638      U 0765      2      |      |
639      U 0766      2      |      | WHILE current_entry[0] NEQ 0 DO
640      U 0767      2      |      | BEGIN
641      U 0768      2      |      |     freref (.current_entry[2]);          ! Release old c-ref bfrs.
642      U 0769      2      |      |     desc = .current_entry[1];
643      U 0770      2      |      |     $XPO_FREE_MEM ( STRING = ( .desc [str$h_length] ! ref. name,
644      U 0771      2      |      |     ..desc [str$a_pointer] ) );
645      U 0772      2      |      |     $XPO_FREE_MEM ( BINARY_DATA =( 2 ! descriptor for name,
646      U 0773      2      |      |     ..current_entry[1] ) );
647      U 0774      2      |      |     temp_pointer = .current_entry[0];
648      U 0775      2      |      |     $XPO_FREE_MEM ( BINARY_DATA =( 3 ! and keyword block
649      U 0776      2      |      |     ..current_entry[0] ) );
650      U 0777      2      |      |     current_entry = .temp_pointer
651      U 0778      2      |      | END;
652      U 0779      2      |      |     kwtrpn = 0          ! initialize listhead
653      U 0780      2      |      | END;
654      U 0781      2      |      | %FI
655      U 0782      2      |      | RETURN;
656      U 0783      1      |      | END;

```

! End of RTERM.

```

.TITLE RTERM RUNOFF termination and cleanup
.IDENT \V04-000\

```

```

.EXTRN FNCT, FRA, GCA, HCT
.EXTRN PHAN, TSF, BRNOOB
.EXTRN TTEIOB, TTIIOB, TTOIOB
.EXTRN TSIIOB, RNFEFD, RNFERD
.EXTRN RNFILE, RNF'F, RNFNEB
.EXTRN RNFPCT, RNF'c2, RNFPc3
.EXTRN BOTPAG, CLH, CPAGEB
.EXTRN ERM, ERML, FN, FOOBOT
.EXTRN FOOOUT, OUTNJ, PUTMSG

```

.EXTRN REMNEG, REMMRG, TOPPAG  
.EXTRN TPR, TSTTFF, UFORM  
.EXTRN USKIPL, XPOS\$CLOSE  
.EXTRN XPOS\$FAILURE

.PSECT \$CODE\$,NOWRT,2

|        |   |      |
|--------|---|------|
| .ENTRY | RTERM, Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11 | 0343 |
| MOVAB  | FNCT, R11                                   |      |
| MOVAB  | XPOS\$CLOSE, R10                            |      |
| MOVAB  | XPOS\$FAILURE, R9                           |      |
| MOVAB  | PUTMSG, R8                                  |      |
| MOVAB  | FRA+4, R7                                   |      |
| MOVAB  | GCA+208, R6                                 |      |
| MOVAB  | PHAN+12, R5                                 |      |
| CLRL   | -(SP)                                       | 0367 |
| CALLS  | #1, TSTTFF                                  |      |
| CALLS  | #0, REMNEG                                  | 0368 |
| CALLS  | #0, REMMRG                                  | 0369 |
| BLBC   | FNCT+20, 1\$                                | 0371 |
| PUSHL  | #RNFEFD                                     |      |
| CALLS  | #1, ERML                                    | 0374 |
| PUSHL  | #57   |      |
| CALLS  | #1, FN                                      | 0375 |
| CALLS  | #0, OUTNJ                                   |      |
| MOVL   | PHAN, HOLD_PHAN_TOP_PAGE                    | 0416 |
| TSTL   | FNCT  | 0417 |
| BEQL   | 7\$   | 0437 |
| BLBC   | @PHAN+40, 2\$                               |      |
| ASHL   | #1, PHAN+36, R0                             | 0439 |
| CMPL   | @PHAN+4, R0                                 |      |
| BLSS   | 4\$   |      |
| BLBC   | PHAN+24, 3\$                                | 0450 |
| CALLS  | #0, TOPPAG                                  | 0452 |
| PUSHL  | FNCT  | 0454 |
| CALLS  | #1, °000UT                                  |      |
| BRB    | 7\$   |      |
| BLBC   | PHAN+24, 6\$                                | 0467 |
| CALLS  | #0, TOPPAG                                  | 0469 |
| CALLS  | #0, FOOTBOT                                 | 0479 |
| TSTL   | FNCT  | 0485 |
| BLEQ   | 7\$   |      |
| CALLS  | #0, BOTPAG                                  | 0493 |
| BRB    | 5\$   | 0494 |
| MOVL   | PHAN+16, R2                                 | 0510 |
| BEQL   | 9\$   |      |
| BLBC   | PHAN+24, 8\$                                | 0517 |
| CALLS  | #0, TOPPAG                                  | 0522 |
| BRB    | 9\$   |      |
| MOVL   | TSF, R0                                     | 0527 |
| EXTZV  | #0, #1, 124(R0), HOLD_BARS                  |      |
| BICB2  | #1, 124(R0)                                 |      |
| PUSHL  | R2  |      |
| CALLS  | #1, USKIPL                                  |      |
| MOVL   | TSF, R0                                     |      |
| INSV   | HOLD_BARS, #0, #1, 124(R0)                  |      |
| TSTL   | HCT+32                                      | 0535 |

|           |           |    |                |
|-----------|-----------|----|----------------|
| OFFC      | 00000     |    |                |
| 5B        | 00000000G | EF | 9E 00002       |
| 5A        | 00000000G | EF | 9E 00009       |
| 59        | 00000000G | EF | 9E 00010       |
| 58        | 00000000G | EF | 9E 00017       |
| 57        | 00000000G | EF | 9E 0001E       |
| 56        | 00000000G | EF | 9E 00025       |
| 55        | 00000000G | EF | 9E 0002C       |
|           |           | 7E | D4 00033       |
| 00000000G | EF        | 01 | FB 00035       |
| 00000000G | EF        | 00 | FB 0003C       |
| 00000000G | EF        | 00 | FB 00043       |
| 16        | 14        | AB | E9 0004A       |
| 00000000G | 00000000G | 8F | DD 0004E       |
|           |           | 01 | FB 00054       |
|           |           | 39 | DD 0005B       |
| 00000000G | EF        | 01 | FB 0005D       |
| 00000000G | EF        | 00 | FB 00064 1\$:  |
| 54        | F4        | A5 | D0 0006B       |
|           |           | 6B | D5 0006F       |
|           |           | 44 | 13 00071       |
|           |           | B5 | E9 00073       |
| 50        | 18        | 01 | 78 00077       |
|           |           | B5 | D1 0007C       |
|           |           | 16 | 19 00080       |
|           |           | A5 | E9 00082 2\$:  |
| 00000000G | EF        | 00 | FB 00086       |
|           |           | 6B | DD 0008D 3\$:  |
| 00000000G | EF        | 01 | FB 0008F       |
|           |           | 1F | 11 00096       |
|           |           | A5 | E9 00098 4\$:  |
| 00000000G | EF        | 00 | FB 0009C 5\$:  |
| 00000000G | EF        | 00 | FB 000A3 6\$:  |
|           |           | 6B | D5 000AA       |
|           |           | 09 | 15 000AC       |
| 00000000G | EF        | 00 | FB 000AE       |
|           |           | E5 | 11 000B5       |
|           |           | A5 | D0 000B7 7\$:  |
|           |           | 34 | 13 000BB       |
|           |           | A5 | E9 000BD       |
| 00000000G | EF        | 00 | FB 000C1       |
|           |           | 27 | 11 000C8       |
|           |           | 50 | D0 000CA 8\$:  |
| 53        | 7C        | A0 | 01 000D1       |
|           |           | 7C | A0 01 8A 000D7 |
|           |           | 52 | DD 000DB       |
| 00000000G | EF        | 01 | FB 000DD       |
|           |           | 50 | D0 000E4       |
| 7C        | A0        | 01 | 00 53 F0 000EB |
|           |           | 00 | 00000000G      |
|           |           | EF | D5 000F1 9\$:  |

|    |           |    |           |    |    |       |             |                          |  |      |
|----|-----------|----|-----------|----|----|-------|-------------|--------------------------|--|------|
|    | 00000000G | EF |           | 07 | 13 | 000F7 | BEQL        | 10\$                     |  |      |
|    |           | 04 | 30        | 00 | FB | 000F9 | CALLS       | #0, CPAGEB               |  | 0537 |
|    |           | 14 | 28        | A5 | E8 | 00100 | 10\$: BLBS  | PHAN+60, 11\$            |  | 0543 |
|    |           | 04 | A0        | A5 | E9 | 00104 | BLBC        | PHAN+52, 13\$            |  |      |
|    | 2C        | A5 |           | A6 | E8 | 00108 | 11\$: BLBS  | GCA+112, 12\$            |  | 0554 |
|    |           |    |           | 65 | D0 | 0010C | MOVL        | PHAN+12, PHAN+56         |  | 0556 |
|    | 00000000G | EF | A0        | A6 | D4 | 00110 | 12\$: CLRL  | GCA+112                  |  | 0561 |
|    |           |    |           | 00 | FB | 00113 | CALLS       | #0, UFORM                |  | 0562 |
|    |           | 21 |           | 24 | 11 | 0011A | BRB         | 14\$                     |  | 0543 |
|    |           | 1E |           | 54 | E9 | 0011C | 13\$: BLBC  | HOLD PHAN TOP_PAGE, 14\$ |  | 0569 |
|    |           |    |           | 66 | E8 | 0011F | BLBS        | GCA+208, T4\$            |  |      |
|    | FC        | A7 | 08        | A7 | D4 | 00122 | CLRL        | FRA+12                   |  | 0579 |
|    |           | 67 | 0C        | A7 | 9E | 00125 | MOVAB       | FRA+16, FRA              |  |      |
|    | 00        | B7 | FC        | A7 | D0 | 0012A | MOVL        | FRA, FRA+4               |  |      |
|    |           |    |           | 0C | 90 | 0012E | MOVAB       | #12, @FRA+4              |  | 0580 |
|    |           |    |           | 67 | D6 | 00132 | INCL        | FRA+4                    |  |      |
|    |           |    | 08        | A7 | D6 | 00134 | INCL        | FRA+12                   |  |      |
|    |           |    |           | 0B | DD | 00137 | PUSHL       | #11                      |  | 0581 |
| 14 | 00000000G | EF |           | 01 | FB | 00139 | CALLS       | #1, CLH                  |  |      |
|    | 01        | A6 |           | 02 | E1 | 00140 | 14\$: BBC   | #2, GCA+209, 15\$        |  | 0638 |
|    |           |    |           | 65 | D5 | 00145 | TSTL        | PHAN+12                  |  | 0640 |
|    |           |    |           | 10 | 12 | 00147 | BNEQ        | 15\$                     |  |      |
|    |           |    | 88        | A6 | D5 | 00149 | TSTL        | GCA+88                   |  | 0642 |
|    |           |    |           | 0B | 12 | 0014C | BNEQ        | 15\$                     |  |      |
|    |           |    |           | 7E | 7C | 0014E | CLRQ        | -(SP)                    |  | 0644 |
|    |           |    | 00000000G | 8F | DD | 00150 | PUSHL       | #RNFIPF                  |  |      |
|    | 68        |    |           | 03 | FB | 00156 | CALLS       | #3, PUTMSG               |  |      |
|    | 0D        |    | F0        | A6 | E9 | 00159 | 15\$: BLBC  | GCA+192, 16\$            |  | 0646 |
|    |           |    |           | 7E | D4 | 0015D | CLRL        | -(SP)                    |  | 0648 |
|    |           |    | F4        | A6 | DD | 0015F | PUSHL       | GCA+196                  |  |      |
|    |           |    | 00000000G | 8F | DD | 00162 | PUSHL       | #RNFERD                  |  |      |
|    |           |    |           | 0C | 11 | 00168 | BRB         | 17\$                     |  |      |
| 0F |           | 66 |           | 01 | E1 | 0016A | 16\$: BBC   | #1, GCA+208, 18\$        |  | 0651 |
|    |           |    |           | 7E | 7C | 0016E | CLRQ        | -(SP)                    |  | 0653 |
|    |           |    | 00000000G | 8F | DD | 00170 | PUSHL       | #RNFED                   |  |      |
|    | 68        |    |           | 03 | FB | 00176 | 17\$: CALLS | #3, PUTMSG               |  |      |
| 04 | 66        |    |           | 01 | E0 | 00179 | BBS         | #1, GCA+208, 19\$        |  | 0661 |
|    | 5C        |    | F0        | A6 | E9 | 0017D | 18\$: BLBC  | GCA+192, 25\$            |  |      |
|    | 33        |    |           | 66 | E8 | 00181 | 19\$: BLBS  | GCA+208, 23\$            |  | 0678 |
|    | 11        |    | 1C        | B5 | E8 | 00184 | BLBS        | @PHAN+40, 20\$           |  | 0681 |
| 50 | 65        |    | 18        | A5 | C1 | 00188 | ADDL3       | PHAN+36, PHAN+12, R0     |  | 0688 |
|    |           |    |           | 50 | D7 | 0018D | DECL        | R0                       |  |      |
|    | 50        |    | 18        | A5 | C6 | 0018F | DIVL2       | PHAN+36, R0              |  |      |
|    | 88        |    | A6        | 50 | C0 | 00193 | ADDL2       | R0, GCA+88               |  |      |
|    |           |    |           | 10 | 11 | 00197 | BRB         | 22\$                     |  | 0687 |
|    |           |    |           | 65 | D5 | 00199 | 20\$: TSTL  | PHAN+12                  |  | 0694 |
|    |           |    |           | 0C | 15 | 0019B | BLEQ        | 22\$                     |  |      |
|    | 05        |    | A0        | A6 | E9 | 0019D | BLBC        | GCA+112, 21\$            |  | 0696 |
|    |           |    | 88        | A6 | D5 | 001A1 | TSTL        | GCA+88                   |  |      |
|    |           |    |           | 03 | 15 | 001A4 | BLEQ        | 22\$                     |  |      |
|    |           |    | 88        | A6 | D6 | 001A6 | 21\$: INCL  | GCA+88                   |  | 0698 |
|    |           |    |           | 7E | D4 | 001A9 | 22\$: CLRL  | -(SP)                    |  | 0703 |
|    |           |    | 88        | A6 | DD | 001AB | PUSHL       | GCA+88                   |  |      |
|    |           |    | 00000000G | 8F | DD | 001AE | PUSHL       | #RNFPCF                  |  |      |
|    | 68        |    |           | 03 | FB | 001B4 | CALLS       | #3, PUTMSG               |  |      |
|    | 50        |    | 90        | A6 | D0 | 001B7 | 23\$: MOVL  | GCA+96, R0               |  | 0714 |
|    |           |    |           | 0D | 15 | 001BB | BLEQ        | 24\$                     |  |      |

|           |           |    |    |       |       |        |                 |  |      |
|-----------|-----------|----|----|-------|-------|--------|-----------------|--|------|
|           |           | 7E | D4 | 001BD |       | CLRL   | -(SP)           |  |      |
|           |           | 50 | DD | 001BF |       | PUSHL  | R0              |  |      |
|           | 00000000G | 8F | DD | 001C1 |       | PUSHL  | #RNFPC2         |  |      |
| 68        |           | 03 | FB | 001C7 |       | CALLS  | #3, PUTMSG      |  |      |
| 50        | 8C        | A6 | DO | 001CA | 24\$: | MOVL   | GCA+92, R0      |  | 0715 |
|           |           | 0D | 15 | 001CE |       | BLEQ   | 25\$            |  |      |
|           |           | 7E | D4 | 001D0 |       | CLRL   | -(SP)           |  |      |
|           | 00000000G | 50 | DD | 001D2 |       | PUSHL  | R0              |  |      |
|           |           | 8F | DD | 001D4 |       | PUSHL  | #RNFPC3         |  |      |
| 68        |           | 03 | FB | 001DA |       | CALLS  | #3, PUTMSG      |  |      |
| 14        | 00000000G | EF | E9 | 001DD | 25\$: | BLBC   | BRNOOB+50, 26\$ |  | 0744 |
| 00000000G | EF        | 02 | 90 | 001E4 |       | MOVB   | #2, IOB\$+44    |  |      |
|           |           | 59 | DD | 001EB |       | PUSHL  | R9              |  |      |
|           | 00000000G | 7E | D4 | 001ED |       | CLRL   | -(SP)           |  |      |
|           |           | EF | 9F | 001EF |       | PUSHAB | IOB\$           |  |      |
| 6A        |           | 03 | FB | 001F5 |       | CALLS  | #3, XPOS\$CLOSE |  |      |
| 14        | 00000000G | EF | E9 | 001F8 | 26\$: | BLBC   | TTEIOB+50, 27\$ |  | 0745 |
| 00000000G | EF        | 02 | 90 | 001FF |       | MOVB   | #2, IOB\$+44    |  |      |
|           |           | 59 | DD | 00206 |       | PUSHL  | R9              |  |      |
|           | 00000000G | 7E | D4 | 00208 |       | CLRL   | -(SP)           |  |      |
|           |           | EF | 9F | 0020A |       | PUSHAB | IOB\$           |  |      |
| 6A        |           | 03 | FB | 00210 |       | CALLS  | #3, XPOS\$CLOSE |  |      |
| 14        | 00000000G | EF | E9 | 00213 | 27\$: | BLBC   | TTIOB+50, 28\$  |  | 0746 |
| 00000000G | EF        | 02 | 90 | 0021A |       | MOVB   | #2, IOB\$+44    |  |      |
|           |           | 59 | DD | 00221 |       | PUSHL  | R9              |  |      |
|           | 00000000G | 7E | D4 | 00223 |       | CLRL   | -(SP)           |  |      |
|           |           | EF | 9F | 00225 |       | PUSHAB | IOB\$           |  |      |
| 6A        |           | 03 | FB | 0022B |       | CALLS  | #3, XPOS\$CLOSE |  |      |
| 14        | 00000000G | EF | E9 | 0022E | 28\$: | BLBC   | TTIOB+50, 29\$  |  | 0747 |
| 00000000G | EF        | 02 | 90 | 00235 |       | MOVB   | #2, IOB\$+44    |  |      |
|           |           | 59 | DD | 0023C |       | PUSHL  | R9              |  |      |
|           | 00000000G | 7E | D4 | 0023E |       | CLRL   | -(SP)           |  |      |
|           |           | EF | 9F | 00240 |       | PUSHAB | IOB\$           |  |      |
| 6A        |           | 03 | FB | 00246 |       | CALLS  | #3, XPOS\$CLOSE |  |      |
| 14        | 00000000G | EF | E9 | 00249 | 29\$: | BLBC   | TSIOB+50, 30\$  |  | 0748 |
| 00000000G | EF        | 02 | 90 | 00250 |       | MOVB   | #2, IOB\$+44    |  |      |
|           |           | 59 | DD | 00257 |       | PUSHL  | R9              |  |      |
|           | 00000000G | 7E | D4 | 00259 |       | CLRL   | -(SP)           |  |      |
|           |           | EF | 9F | 0025B |       | PUSHAB | IOB\$           |  |      |
| 6A        |           | 03 | FB | 00261 |       | CALLS  | #3, XPOS\$CLOSE |  |      |
|           |           | 04 | 04 | 00264 | 30\$: | RET    |                 |  | 0783 |

; Routine Size: 613 bytes, Routine Base: \$CODE\$ + 0000

: 657 0784 1  
: 658 0785 1 END  
: 659 0786 0 ELUDOM

! End of module.

PSECT SUMMARY

| Name | Bytes | Attributes |
|------|-------|------------|
|------|-------|------------|

RTERM  
V04-000

RUNOFF termination and cleanup  
RTERM - RUNOFF termination

I 14  
16-Sep-1984 01:41:18  
14-Sep-1984 13:07:58

VAX-11 Bliss-32 V4.0-742  
DISK\$VMMASTER:[RUNOFF.SRC]RTERM.BLI;1 (4)

RUI  
VOI

: \$CODE\$ 613 NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, (ON,NOPIC,ALIGN(2))

Library Statistics

| File                                   | -----<br>Total | Symbols<br>Loaded | -----<br>Percent | Pages<br>Mapped | Processing<br>Time |
|--|----------------|-------------------|------------------|-----------------|--------------------|
| _\$255\$DUA28:[SYSLIB]XPORT.L32;1      | 590            | 81                | 13               | 252             | 00:00.2            |
| _\$255\$DUA28:[RUNOFF.SRC]DSRLIB.L32;1 | 1248           | 47                | 3                | 86              | 00:00.3            |

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS\$:RTERM/OBJ=OBJ\$:RTERM MSRC\$:RTERM/UPDATE=(ENHS\$:RTERM)

: Size: 613 code + 0 data bytes  
: Run Time: 00:15.0  
: Elapsed Time: 00:36.5  
: Lines/CPU Min: 3148  
: Lexemes/CPU-Min: 28445  
: Memory Used: 189 pages  
: Compilation Complete

0348 AH-BT13A-SE  
VAX/VMS V4.0

# DIGITAL EQUIPMENT CORPORATION CONFIDENTIAL AND PROPRIETARY

A grid of 10 columns and 10 rows of terminal window screenshots. Each window displays a different command-line interface or data output. The windows are arranged in a regular grid pattern across the page.

Visible window titles and content include:

- RSDEF LIS**: A window showing a list of definitions or parameters.
- RSDERM LIS**: A window displaying a list of error messages or diagnostic information.
- RTERM LIS**: A window showing terminal control or status information.
- RNODEF LIS**: A window displaying a list of node definitions.
- RNOFF LIS**: A window showing a list of offsets or timing information.
- RNOUMS LIS**: A window displaying a list of units or measurements.
- RNODAT LIS**: A window showing a list of data points or records.
- RNOURS LIS**: A window displaying a list of units or rates.
- RNFERM LIS**: A window showing a list of error messages or diagnostic information.
- SAURES LIS**: A window displaying a list of resources or status information.