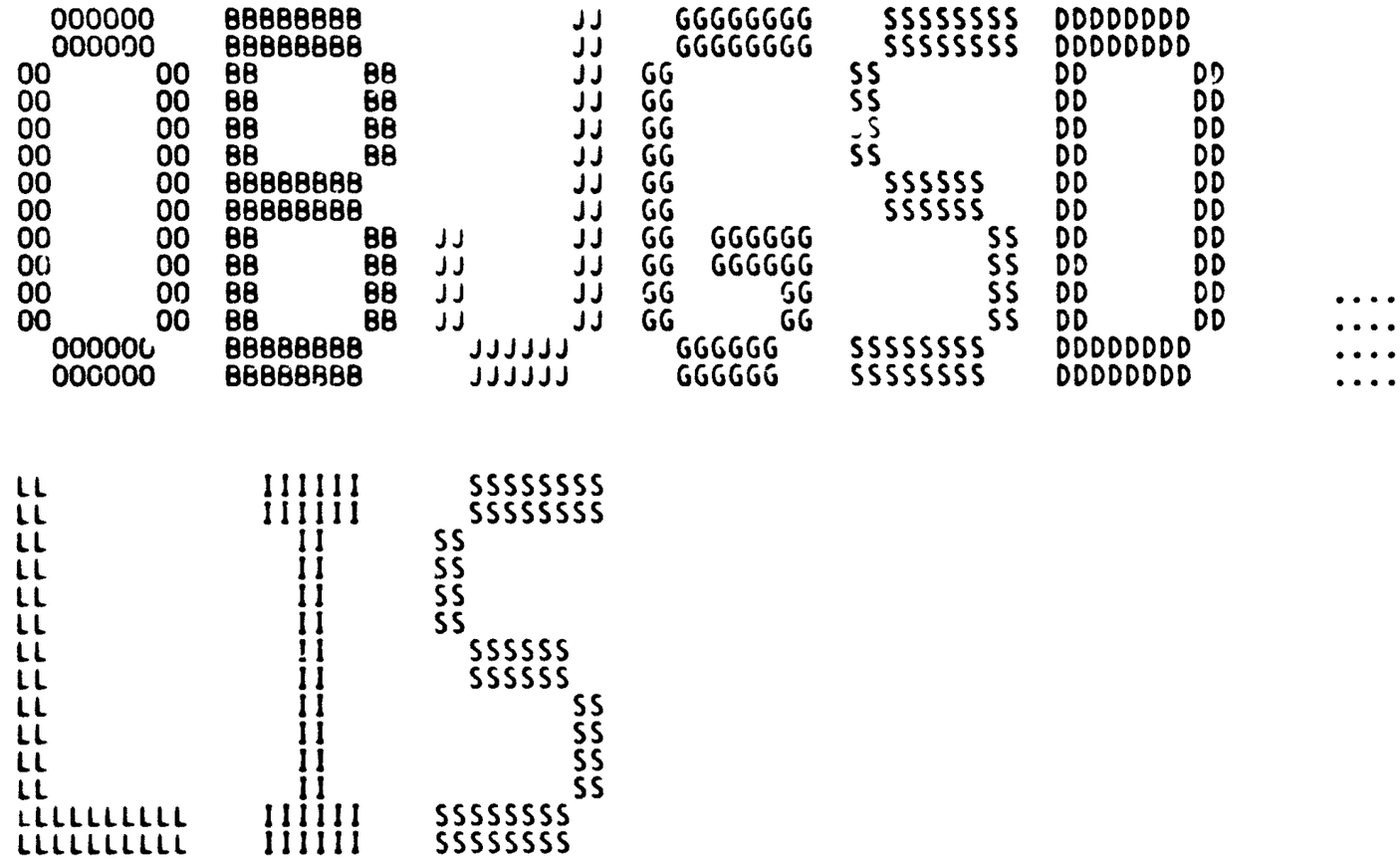
```
   AAAAAAAAA     NNN         NNN     AAAAAAAAA     LLL              YYY         YYY  ZZZZZZZZZZZZZZZ
   AAAAAAAAA     NNN         NNN     AAAAAAAAA     LLL              YYY         YYY  ZZZZZZZZZZZZZZZ
   AAAAAAAAA     NNN         NNN     AAAAAAAAA     LLL              YYY         YYY  ZZZZZZZZZZZZZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL              YYY         YYY              ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL              YYY         YYY              ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL              YYY         YYY              ZZZ
AAA         AAA  NNNNNN      NNN  AAA         AAA  LLL                 YYY   YYY              ZZZ
AAA         AAA  NNNNNN      NNN  AAA         AAA  LLL                 YYY   YYY              ZZZ
AAA         AAA  NNNNNN      NNN  AAA         AAA  LLL                 YYY   YYY              ZZZ
AAA         AAA  NNN   NNN   NNN  AAA         AAA  LLL                    YYY              ZZZ
AAA         AAA  NNN   NNN   NNN  AAA         AAA  LLL                    YYY              ZZZ
AAA         AAA  NNN   NNN   NNN  AAA         AAA  LLL                    YYY              ZZZ
AAAAAAAAAAAAAAA  NNN      NNNNNN  AAAAAAAAAAAAAAA  LLL                    YYY           ZZZ
AAAAAAAAAAAAAAA  NNN      NNNNNN  AAAAAAAAAAAAAAA  LLL                    YYY           ZZZ
AAAAAAAAAAAAAAA  NNN      NNNNNN  AAAAAAAAAAAAAAA  LLL                    YYY           ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL                    YYY        ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL                    YYY        ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLL                    YYY        ZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLLLLLLLLLLLLLL        YYY        ZZZZZZZZZZZZZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLLLLLLLLLLLLLL        YYY        ZZZZZZZZZZZZZZZ
AAA         AAA  NNN         NNN  AAA         AAA  LLLLLLLLLLLLLLL        YYY        ZZZZZZZZZZZZZZZ
```

FILEID**OBJGSD



```
;     1          0001  0 %title 'OBJGSD - Analyze GSD Records'
;     2          0002  0         module objgsd
;     3          0003  0                 (ident = 'V04-000') =
;     4          0004  1 begin
;     5          0005  1
;     6          0006  1 !
;     7          0007  1 !*****************************************************************************
;     8          0008  1 !*                                                                           *
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;    25          0025  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
;    26          0026  1 !*                                                                           *
;    27          0027  1 !*                                                                           *
;    28          0028  1 !*****************************************************************************
;    29          0029  1 !
;    30          0030  1
;    31          0031  1 !++
;    32          0032  1 ! Facility:     VAX/VMS Analyze Facility, Analyze GSD Object Records
;    33          0033  1 !
;    34          0034  1 ! Abstract:     This module handles the analysis of GSD records.
;    35          0035  1 !
;    36          0036  1 !
;    37          0037  1 ! Environment:
;    38          0038  1 !
;    39          0039  1 ! Author: Paul C. Anagnostopoulos, Creation Date: 20 January 1980
;    40          0040  1 !
;    41          0041  1 ! Modified By:
;    42          0042  1 !
;    43          0043  1 !       V03-004 MCN0175         Maria del C. Nasr       9-Jul-1984
;    44          0044  1 !               When processing environment subrecords call
;    45          0045  1 !               ANL$OBJECT_ENV_REF and not ANL$OBJECT_PSECT_REF.
;    46          0046  1 !
;    47          0047  1 !       V03-003 ADE0001         Alan D. Eldridge        6-Jul-1984
;    48          0048  1 !               Add ENV$V_NESTED support.
;    49          0049  1 !
;    50          0050  1 !       V03-002 MCN0158         Maria del C. Nasr       22-Mar-1984
;    51          0051  1 !               Add size parameter to call to ANL$CHECK_SYMBOL.
;    52          0052  1 !
;    53          0053  1 !       V03-001 PCA1011         Paul C. Anagnostopoulos  1-Apr-1983
;    54          0054  1 !               Change the message prefix to ANLOBJ$_ to ensure that
;    55          0055  1 !               message symbols are unique across all ANALYZEs.  This
;    56          0056  1 !               is necessitated by the new merged message files.
;    57          0057  1 !--
```

```
;    59          0058  1 %sbttl 'Module Declarations'
;    60          0059  1 !
;    61          0060  1 ! Libraries and Requires:
;    62          0061  1 !
;    63          0062  1
;    64          0063  1 library 'starlet';
;    65          0064  1 require 'objexereq';
;    66          0500  1
;    67          0501  1 !
;    68          0502  1 ! Table of Contents:
;    69          0503  1 !
;    70          0504  1
;    71          0505  1 forward routine
;    72          0506  1         anl$object_gsd: novalue,
;    73          0507  1         anl$object_argument_dsc,
4   ;    74          0508  1         anl$object_psect_ref: novalue,
0   ;    75          0509  1         anl$object_psect_check: novalue,
;    76          0510  1         anl$object_env_ref: novalue,
8   ;    77          0511  1         anl$object_env_check: novalue;
;    78          0512  1
;    79          0513  1 !
;    80          0514  1 ! External References:
9   ;    81          0515  1 !
;    82          0516  1
7   ;    83          0517  1 external routine
;    84          0518  1         anl$check_flags,
;    85          0519  1         anl$check_symbol,
;    86          0520  1         anl$format_data_type,
4   ;    87          0521  1         anl$format_error,
;    88          0522  1         anl$format_flags,
;    89          0523  1         anl$format_hex,
;    90          0524  1         anl$format_line,
;    91          0525  1         anl$format_mask,
;    92          0526  1         anl$format_severity,
;    93          0527  1         anl$object_record_line,
;    94          0528  1         anl$report_line,
;    95          0529  1         lib$free_vm: addressing_mode(general),
;    96          0530  1         lib$get_vm: addressing_mode(general);
;    97          0531  1
;    98          0532  1 !
;    99          0533  1 ! Own Variables:
;   100          0534  1 !
;   101          0535  1
;   102          0536  1 ! The following variables are needed to keep track of psect references and
;   103          0537  1 ! check their validity.
;   104          0538  1
;   105          0539  1 own
;   106          0540  1         highest_def_psect: signed long initial(-1),
;   107          0541  1         highest_ref_psect: signed long initial(-1),
;   108          0542  1         psect_ref_bits: ref bitvector[65536];
;   109          0543  1
;   110          0544  1 ! The following variables perform the same function, but for environments.
;   111          0545  1
;   112          0546  1 own
;   113          0547  1         highest_def_env: signed long initial(-1),
;   114          0548  1         highest_ref_env: signed long initial(-1),
;   115          0549  1         env_ref_bits: ref bitvector[65536];
```

```
;  117          0550  1 %sbttl 'ANL$OBJECT_GSD - Analyze GSD Object Records'
;  118          0551  1 !++
;  119          0552  1 ! Functional Description:
;  120          0553  1 !       This routine is responsible for analyzing the GSD object records.
;  121          0554  1 !
;  122          0555  1 ! Formal Parameters:
;  123          0556  1 !       record_number   The number of this object record.
;  124          0557  1 !       the_record      Address of descriptor of the object record.
;  125          0558  1 !
;  126          0559  1 ! Implicit Inputs:
;  127          0560  1 !       global data
;  128          0561  1 !
;  129          0562  1 ! Implicit Outputs:
;  130          0563  1 !       global data
;  131          0564  1 !
;  132          0565  1 ! Returned Value:
;  133          0566  1 !       none
;  134          0567  1 !
;  135          0568  1 ! Side Effects:
;  136          0569  1 !
;  137          0570  1 !--
;  138          0571  1
;  139          0572  1
;  140          0573  2 global routine anl$object_gsd(record_number,the_record): novalue = begin
;  141          0574  2
;  142          0575  2 bind
;  143          0576  2         record_dsc = .the_record: descriptor;
```

```
;  145          0577  2 ! The following data structures define the various flag bytes and words
;  146          0578  2 ! that are present in GSD records.
;  147          0579  2
;  148          0580  2 ! This defines the flags in a psect definition subrecord:
;  149          0581  2
;  150          0582  2 own
;  151          0583  2         psc_flags_def: vector[11,long] initial(
;  152          0584  2                                        9,
;  153          0585  2                                        uplit byte(%ascic 'GPS$V_PIC'),
;  154          0586  2                                        uplit byte(%ascic 'GPS$V_LIB'),
;  155          0587  2                                        uplit byte(%ascic 'GPS$V_OVL'),
;  156          0588  2                                        uplit byte(%ascic 'GPS$V_REL'),
;  157          0589  2                                        uplit byte(%ascic 'GPS$V_GBL'),
;  158          0590  2                                        uplit byte(%ascic 'GPS$V_SHR'),
;  159          0591  2                                        uplit byte(%ascic 'GPS$V_EXE'),
;  160          0592  2                                        uplit byte(%ascic 'GPS$V_RD'),
;  161          0593  2                                        uplit byte(%ascic 'GPS$V_WRT'),
;  162          0594  2                                        uplit byte(%ascic 'GPS$V_VEC'));
;  163          0595  2
;  164          0596  2 ! This defines the flags in the symbol, entry point, and procedure subrecords.
;  165          0597  2
;  166          0598  2 own
;  167          0599  2         sym_flags_def: vector[5,long] initial(
;  168          0600  2                                        3,
;  169          0601  2                                        uplit byte(%ascic 'GSY$V_WEAK'),
;  170          0602  2                                        uplit byte(%ascic 'GSY$V_DEF'),
;  171          0603  2                                        uplit byte(%ascic 'GSY$V_UNI'),
;  172          0604  2                                        uplit byte(%ascic 'GSY$V_REL'));
;  173          0605  2
;  174          0606  2 ! This defines the flags in the environment subrecord.
;  175          0607  2
;  176          0608  2 own
;  177          0609  2         env_flags_def: vector[3,long] initial(
;  178          0610  2                                        1,
;  179          0611  2                                        uplit byte(%ascic 'ENV$V_DEF'),
;  180          0612  2                                        uplit byte(%ascic 'ENV$V_NESTED'));
;  181          0613  2
;  182          0614  2 ! This defines the flags in the entity check subrecord.
;  183          0615  2
;  184          0616  2 own
;  185          0617  2         entity_flags_def: vector[2,long] initial(
;  186          0618  2                                        0,
;  187          0619  2                                        uplit byte(%ascic 'IDC$V_BINIDENT'));
```

```
;  189          0620  2 own
;  190          0621  2         gsd_subrecord_msg: vector[gsd$c_maxrectyp+1,long] initial(
2 ;  191          0622  2                                                 anlobj$_objgsdpsc,
;  192          0623  2                                                 anlobj$_objgsdsym,
3 ;  193          0624  2                                                 anlobj$_objgsdepm,
7 ;  194          0625  2                                                 anlobj$_objgsdpro,
;  195          0626  2                                                 anlobj$_objgsdsymw,
;  196          0627  2                                                 anlobj$_objgsdepmw,
;  197          0628  2                                                 anlobj$_objgsdprow,
;  198          0629  2                                                 anlobj$_objgsdidc,
1 ;  199          0630  2                                                 anlobj$_objgsdenv,
;  200          0631  2                                                 anlobj$_objgsdlsy,
;  201          0632  2                                                 anlobj$_objgsdlepm,
;  202          0633  2                                                 anlobj$_objgsdlpro,
;  203          0634  2                                                 anlobj$_objgsdspsc);
;  204          0635  2
;  205          0636  2 local
;  206          0637  2         status: long,
;  207          0638  2         gsd_type: byte,
;  208          0639  2         scanp: ref block[,byte],
;  209          0640  2         subrecord_number: long,
;  210          0641  2         fit_ok: byte,
;  211          0642  2         work_dsc: descriptor;
;  212          0643  2
;  213          0644  2
;  214          0645  2 ! We begin by printing a major line for the record.
;  215          0646  2
;  216          0647  2 anl$object_record_line(anlobj$_objgsdrec,.record_number,record_dsc);
;  217          0648  2
;  218          0649  2 ! Now we go into a loop processing the subrecords in the record.
;  219          0650  2 ! SUBRECORD_NUMBER will count them as we go.
;  220          0651  2 ! SCANP will advance along the various subrecords of the record.
;  221          0652  2 ! FIT_OK will remain true unless a field spills off the end of the record.
;  222          0653  2
;  223          0654  2 subrecord_number = 0;
;  224          0655  2 scanp = .record_dsc[ptr] + 1;
;  225          0656  2 fit_ok = true;
;  226          0657  3 while (.scanp lssa .record_dsc[ptr]+.record_dsc[len]) and .fit_ok do (
;  227          0658  3
;  228          0659  3         ! Count the subrecord and prepare to print it nicely.  Then print a
;  229          0660  3         ! minor line for the subrecord.  If the subrecord type is invalid,
;  230          0661  3         ! show the user and forget the record.
;  231          0662  3
;  232          0663  3         increment (subrecord_number);
;  233          0664  3         anl$report_line(0);
;  234          0665  3
;  235          0666  3         gsd_type = .scanp[0,0,8,0];
;  236          0667  3         if .gsd_type lequ gsd$c_maxrectyp then
;  237          0668  3                 anl$format_line(2,1,.gsd_subrecord_msg[.gsd_type],.subrecord_number)
;  238          0669  4         else (
;  239          0670  4                 anl$format_error(anlobj$_objgsdbadsubtyp,,gsd_type);
;  240          0671  4                 build_descriptor(work_dsc,.record_dsc[len]-(.scanp-.record_dsc[ptr]),.record_dsc[ptr]);
;  241          0672  4                 anl$format_hex(2,work_dsc);
;  242          0673  4                 return;
;  243          0674  3         );
;  244          0675  3
;  245          0676  3         ! Now we can select on the subrecord type and analyze the subrecord.
```

```
;  246          0677  3
;  247          0678  3          case .gsd_type from 0 to gsd$c_maxrectyp of set
```

```
;  249          0679  3          [gsd$c_psc,
;  250          0680  3           gsd$c_spsc]:
;  251          0681  3
;  252          0682  3                  ! We have a psect definition subrecord.  The first field
;  253          0683  3                  ! contains the psect alignment.  Print it and check it.
;  254          0684  3                  . Also include the psect number for this guy.
;  255          0685  3
;  256          0686  4                  (ensure_field_fit(gps$b_align,record_dsc);
;  257          0687  5                  if .fit_ok then (
;  258          0688  5                          increment (highest_def_psect);
;  259          0689  5                          anl$format_line(0,2,an[obj$_objgsdpscalign,1^.scanp[gps$b_align],
;  260          0690  5                                  .highest_def_psect);
;  261          0691  5                          if .scanp[gps$b_align] gtru obj$c_pscalilim then
;  262          0692  5                                  anl$format_error(anlobj$_objgsdbadalign,obj$c_pscalilim);
;  263          0693  4                  );
;  264          0694  4
;  265          0695  4                  ! The next field is the flags byte.  Print it and check it.
;  266          0696  4
;  267          0697  4                  ensure_field_fit(gps$w_flags,record_dsc);
;  268          0698  5                  if .fit_ok then (
;  269          0699  5                          anl$format_flags(2,anlobj$_objgsdpscflags,.scanp[gps$w_flags],psc_flags_def);
;  270          0700  5                          anl$check_flags(.scanp[gps$w_flags],psc_flags_def);
;  271          0701  4                  );
;  272          0702  4
;  273          0703  4                  ! The next field is the allocation size.  Print it and check.
;  274          0704  4
;  275          0705  4                  ensure_field_fit(gps$l_alloc,record_dsc);
;  276          0706  5                  if .fit_ok then (
;  277          0707  5                          anl$format_line(0,2,anlobj$_objgsdpscalloc,.scanp[gps$l_alloc]);
;  278          0708  5                          if .scanp[gps$l_alloc] gtru %x'3fffffff' then
;  279          0709  5                                  anl$format_error(anlobj$_objp0space);
;  280          0710  5                          if not .scanp[gps$v_rel] and .scanp[gps$l_alloc] nequ 0 then
;  281          0711  5                                  anl$format_error(anlobj$_objpscabslen);
;  282          0712  4                  );
;  283          0713  4
;  284          0714  4                  ! The next field is only present in shareable image psect
;  285          0715  4                  . entries.  It contain the base address of the psect in
;  286          0716  4                  ! the shareable image.  Print it and check.  We also have
;  287          0717  4                  ! to set up SCANP for the next field, since it can be at
;  288          0718  4                  ! two different offset.
;  289          0719  4
;  290          0720  5                  if .gsd_type eqlu gsd$c_spsc then (
;  291          0721  5                          ensure_field_fit(sgps$l_base,record_dsc);
;  292          0722  5                          if .fit_ok then
;  293          0723  5                                  anl$format_line(0,2,anlobj$_objgsdpscbase,.scanp[sgps$l_base]);
;  294          0724  5                          scanp = scanp[sgps$b_namlng];
;  295          0725  4                  ) else
;  296          0726  4                          scanp = scanp[gps$b_namlng];
;  297          0727  4
;  298          0728  4                  ! The final field is the psect name.  Print it and check it.
;  299          0729  4
;  300          0730  4                  ensure_ascic_fit(0,0,8,0,record_dsc,work_dsc);
;  301          0731  5                  if .fit_ok then (
;  302          0732  5                          anl$format_line(0,2,anlobj$_objsymbol,.work_dsc[len],.work_dsc[ptr]);
;  303          0733  5                          anl$check_symbol(work_dsc, obj$c_symsiz);
;  304          0734  4                  );
;  305          0735  4
```

```
;  306          0736  4               ! Finally, advance the scan pointer past this subrecord.
;  307          0737  4
;  308          0738  4               scanp = .work_dsc[ptr] + .work_dsc[len];
;  309          0739  3               );
```

```
;   311         0740  3          [gsd$c_sym,
;   312         0741  3           gsd$c_epm,
;   313         0742  3           gsd$c_pro,
;   314         0743  3           gsd$c_symw,
;   315         0744  3           gsd$c_epmw,
;   316         0745  3           gsd$c_prow,
;   317         0746  3           gsd$c_lsy,
;   318         0747  3           gsd$c_lepm,
;   319         0748  3           gsd$c_lpro]:
;   320         0749  3
;   321         0750  3                   ! We have a symbol specification, entry point definition,
;   322         0751  3                   ! or procedure definition.  As we proceed, we will need to
;   323         0752  3                   ! know if it is a symbol specification and what kind.
;   324         0753  3
;   325         0754  4                   (local
;   326         0755  4                           symbol_spec: byte,
;   327         0756  4                           symbol_def: byte;
;   328         0757  4
;   329         0758  4
;   330         0759  4                   ! All of these records begin with a data type, so let's print
;   331         0760  4                   ! it in the report.
;   332         0761  4
;   333         0762  4                   ensure_field_fit(gsy$b_datyp,record_dsc);
;   334         0763  5                   if .fit_ok then (
;   335         0764  5                           anl$format_data_type(2,.scanp[gsy$b_datyp]);
;   336         0765  4                   );
;   337         0766  4
;   338         0767  4                   ! All the records also contain a byte of flags.  Let's print
;   339         0768  4                   ! them and check.
;   340         0769  4                   ! There was a BUG in the V2 linker that sometimes caused
;   341         0770  4                   ! flag 11 to be set.  To avoid a flood of SPRs, we will
;   342         0771  4                   ! force that flag off so we won't produce an error.
;   343         0772  4
;   344         0773  4                   ensure_field_fit(gsy$w_flags,record_dsc);
;   345         0774  5                   if .fit_ok then (
;   346         0775  5                           anl$format_flags(2,anlobj$_objsymflags,.scanp[gsy$w_flags],sym_flags_def);
;   347         0776  5                           anl$check_flags(.scanp[gsy$w_flags] and %x'f7ff',sym_flags_def);
;   348         0777  5
;   349         0778  5                           ! Now let's figure out if this is a symbol specification.
;   350         0779  5                           ! Also record whether it is a reference or definition.
;   351         0780  5
;   352         0781  5                           symbol_spec = (.gsd_type eqlu gsd$c_sym) or
;   353         0782  5                                         (.gsd_type eqlu gsd$c_symw) or
;   354         0783  5                                         (.gsd_type eqlu gsd$c_lsy);
;   355         0784  5                           symbol_def  = .scanp[gsy$v_def];
;   356         0785  5
;   357         0786  4                   );
;   358         0787  4
;   359         0788  4                   ! From now on it becomes hard to keep track of where we
;   360         0789  4                   ! are, since different subrecords have different formats.
;   361         0790  4                   ! We will use SCANP to point at successive fields.
;   362         0791  4
;   363         0792  4                   scanp = scanp[gsy$w_flags] + 2;
;   364         0793  4
;   365         0794  4                   ! At this point we have an environment index if this is a
;   366         0795  4                   ! local symbol subrecord.
;   367         0796  4
```

```
;  368     0797  4                    if .gsd_type eqlu gsd$c_lsy or
;  369     0798  4                       .gsd_type eqlu gsd$c_lepm or
;  370     0799  5                       .gsd_type eqlu gsd$c_lpro then (
;  371     0800  5                            ensure_field_fit(0,0,16,0,record_dsc);
;  372     0801  6                            if .fit_ok then (
;  373     0802  6                                    anl$format_line(0,2,anlobj$_objenv,.scanp[0,0,16,0]);
;  374     0803  6                                    anl$object_env_ref(.scanp[0,0,16,0]);
;  375     0804  6                                    scanp = .scanp + 2;
;  376     0805  5                            );
;  377     0806  4                    );
;  378     0807  4
;  379     0808  4                    ! At this point we have some fields that are present in all
;  380     0809  4                    ! records except symbol references.
;  381     0810  4
;  382     0811  5                    if not (.symbol_spec and not .symbol_def) then (
;  383     0812  5
;  384     0813  5                            ! OK, since it's not a symbol reference, then the
;  385     0814  5                            ! next thing is a psect number.  It may be a byte
;  386     0815  5                            ! or a word.  Print it and record the reference.
;  387     0816  5
;  388     0817  5                            if (.gsd_type eqlu gsd$c_sym) or
;  389     0818  5                               (.gsd_type eqlu gsd$c_epm) or
;  390     0819  6                               (.gsd_type eqlu gsd$c_pro)   then (
;  391     0820  6                                    ensure_field_fit(0,0,8,0,record_dsc);
;  392     0821  7                                    if .fit_ok then (
;  393     0822  7                                            anl$format_line(0,2,anlobj$_objpsect,.scanp[0,0,8,0]);
;  394     0823  7                                            anl$object_psect_ref(.scanp[0,0,8,0]);
;  395     0824  7                                            increment (scanp);
;  396     0825  6                                    );
;  397     0826  6
;  398     0827  6                            ) else (
;  399     0828  6
;  400     0829  6                                    ensure_field_fit(0,0,16,0,record_dsc);
;  401     0830  7                                    if .fit_ok then (
;  402     0831  7                                            anl$format_line(0,2,anlobj$_objpsect,.scanp[0,0,16,0]);
;  403     0832  7                                            anl$object_psect_ref(.scanp[0,0,16,0]);
;  404     0833  7                                            scanp = .scanp + 2;
;  405     0834  6                                    );
;  406     0835  5                    );
;  407     0836  5
;  408     0837  5                    ! Continuing on, these records contain a longword
;  409     0838  5                    ! value.  Print it and check it.
;  410     0839  5
;  411     0840  5                    ensure_field_fit(0,0,32,0,record_dsc);
;  412     0841  6                    if .fit_ok then (
;  413     0842  6                            anl$format_line(0,2,anlobj$_objvalue,.scanp[0,0,32,0]);
;  414     0843  6                            scanp = .scanp + 4;
;  415     0844  5                    );
;  416     0845  5
9 ;  417     0846  5                    ! Whew.  OK, now we have the entry mask, but not if
;  418     0847  5                    ! it's a symbol definition (or reference, of course).
3 ;  419     0848  5                    ! Print it and check it.
;  420     0849  5
8 ;  421     0850  6                    if not (.symbol_spec and .symbol_def) then (
;  422     0851  6                            ensure_field_fit(0,0,16,0,record_dsc);
;  423     0852  7                            if .fit_ok then (
;  424     0853  7                                    anl$format_mask(2,.scanp[0,0,16,0]);
```

```
\3      425     0854  7                                       scanp = .scanp + 2;
        426     0855  6                                   );
\4      427     0856  5                               );
        428     0857  4                       );
\5      429     0858  4
\6      430     0859  4                       ! OK, now all cases join together.  We have the name of the
        431     0860  4                       ! symbol or entry point.  Print it and check it.
        432     0861  4
        433     0862  4                       ensure_ascic_fit(0,0,8,0,record_dsc,work_dsc);
\8      434     0863  5                       if .fit_ok then (
        435     0864  5                               anl$format_line(0,2,anlobj$_objsymbol,.work_dsc[len],.work_dsc[ptr]);
        436     0865  5                               anl$check_symbol(work_dsc, obj$c_symsiz);
        437     0866  5                               scanp = .work_dsc[ptr] + .work_dsc[len];
        438     0867  4                       );
        439     0868  4
        440     0869  4                       ! Well, we're done unless it's a procedure definition.  If so,
        441     0870  4                       ! we have the argument counts and formal descriptors.
        442     0871  4
        443     0872  4                       if .gsd_type eqlu gsd$c_pro or
        444     0873  4                          .gsd_type eqlu gsd$c_prow or
        445     0874  5                          .gsd_type eqlu gsd$c_lpro then (
        446     0875  5
        447     0876  5                               local
        448     0877  5                                       max_args: long;
        449     0878  5
        450     0879  5                               ! First we have two bytes containing the minimum and
        451     0880  5                               ! maximum argument counts.  Print them and check.
        452     0881  5
        453     0882  5                               ensure_field_fit(0,0,16,0,record_dsc);
        454     0883  6                               if .fit_ok then (
        455     0884  6                                       anl$format_line(0,2,anlobj$_objproargcount,.scanp[0,0,8,0],.scanp[1,0,8,0]);
        456     0885  6                                       if .scanp[0,0,8,0] gtru .scanp[1,0,8,0] then
        457     0886  6                                               anl$format_error(anlobj$_objprominmax);
        458     0887  6                                       max_args = .scanp[1,0,8,0];
        459     0888  6                                       scanp = .scanp + 2;
        460     0889  6
        461     0890  6                                       ! Now we have the formal argument descriptors,
        462     0891  6                                       ! one for each argument.
        463     0892  6
        464     0893  7                                       incru i from 1 to .max_args do (
        465     0894  7                                               anl$format_line(0,2,anlobj$_objproargnum,.i);
        466     0895  7                                               fit_ok = anl$object_argument_dsc(3,scanp,record_dsc);
        467     0896  6                                       );
        468     0897  5                               );
        469     0898  4                       );
        470     0899  3               );
```

```
;  472          0900  3        [gsd$c_idc]:
;  473          0901  3
;  474          0902  3                ! We have an entity identity consistency check subrecord
;  475          0903  3                ! (groan).  The first field is flags, although it contains
;  476          0904  3                ! some other stuff we must ignore.
;  477          0905  3
;  478          0906  4                (local
;  479          0907  4                        binary: byte;
;  480          0908  4
;  481          0909  4                ensure_field_fit(idc$w_flags,record_dsc);
;  482          0910  5                if .fit_ok then (
;  483          0911  5                        anl$format_flags(2,anlobj$_objgsdidcflags,.scanp[idc$w_flags],entity_flags_def);
;  484          0912  5                        anl$check_flags(.scanp[idc$w_flags] and %x'fffffffc1',entity_flags_def);
;  485          0913  4                );
;  486          0914  4
;  487          0915  4                ! If this is a binary identity, then the flags contain a
;  488          0916  4                ! match control value.  Print it and check.
;  489          0917  4
;  490          0918  4                if (binary = .scanp[idc$v_binident]) then
;  491          0919  4                        case .scanp[idc$v_idmatch] from 0 to 3 of set
;  492          0920  4                        [idc$c_leq]:    anl$format_line(0,2,anlobj$_objgsdidcmatch,uplit byte(%ascic 'LEQ'))
;  493          0921  4                        [idc$c_equal]:  anl$format_line(0,2,anlobj$_objgsdidcmatch,uplit byte(%ascic 'EQUAL'
;  494          0922  4                        [inrange]:      anl$format_error(anlobj$_objbadidcmatch,.scanp[idc$v_binident]);
;  495          0923  4                        tes;
;  496          0924  4
;  497          0925  4                ! There is also a standard error severity in the flags word.
;  498          0926  4
;  499          0927  4                anl$format_severity(2,.scanp[idc$v_errsev]);
;  500          0928  4
;  501          0929  4                ! Next we have the entity name.
;  502          0930  4
;  503          0931  4                ensure_ascic_fit(idc$b_namlng,record_dsc,work_dsc);
;  504          0932  4                if .fit_ok then
;  505          0933  4                        anl$format_line(0,2,anlobj$_objgsdidcent,.work_dsc[len],.work_dsc[ptr]);
;  506          0934  4                scanp = .work_dsc[ptr] + .work_dsc[len];
;  507          0935  4
;  508          0936  4                ! This next field is the identity value.  It is a counted
;  509          0937  4                ! string, which can be a longword value.
;  510          0938  4
;  511          0939  4                ensure_ascic_fit(0,0,8,0,record_dsc,work_dsc);
;  512          0940  4                if .fit_ok then
;  513          0941  4                        if .binary then
;  514          0942  4                                anl$format_line(0,2,anlobj$_objgsdidcvalb,.scanp[1,0,32,0])
;  515          0943  4                        else
;  516          0944  4                                anl$format_line(0,2,anlobj$_objgsdidcvala,.work_dsc[len],.work_dsc[ptr]);
;  517          0945  4                scanp = .work_dsc[ptr] + .work_dsc[len];
;  518          0946  4
;  519          0947  4                ! Finally, we have the name of the object.
;  520          0948  4
;  521          0949  4                ensure_ascic_fit(0,0,8,0,record_dsc,work_dsc);
;  522          0950  4                if .fit_ok then
;  523          0951  4                        anl$format_line(0,2,anlobj$_objgsdidcobj,.work_dsc[len],.work_dsc[ptr]);
;  524          0952  4
;  525          0953  4                ! Advance on past this subrecord.
;  526          0954  4
;  527          0955  4                scanp = .work_dsc[ptr] + .work_dsc[len];
;  528          0956  3                );
```

```
;  530          0957  3          [gsd$c_env]:
;  531          0958  3
;  532          0959  3                  ! We have an environment specification subrecord.  The
;  533          0960  3                  ! first field is flags, which we print and check.
;  534          0961  3
;  535          0962  4                  (ensure_field_fit(env$w_flags,record_dsc);
;  536          0963  5                  if .fit_ok then (
;  537          0964  5                          increment (highest_def_env);
;  538          0965  5                          anl$format_flags(2,anlobj$_objgsdenvflags,.scanp[env$w_flags],env_flags_def);
;  539          0966  5                          anl$check_flags(.scanp[env$w_flags],env_flags_def);
;  540          0967  4                  );
;  541          0968  4
;  542          0969  4                  ! The next field is the parent environment index.  Print
;  543          0970  4                  ! it with this environment's index, and check it.
;  544          0971  4
;  545          0972  4                  ensure_field_fit(env$w_envindx,record_dsc);
;  546          0973  5                  if .fit_ok then (
;  547          0974  5                          anl$format_line(0,2,anlobj$_objgsdenvpar,.scanp[env$w_envindx],.highest_def_env);
;  548          0975  5                          anl$object_env_ref(.scanp[env$w_envindx]);
;  549          0976  4                  );
;  550          0977  4
;  551          0978  4                  ! The final field is the environment name.  Print it and check.
;  552          0979  4
;  553          0980  4                  ensure_ascic_fit(env$b_namlng,record_dsc,work_dsc);
;  554          0981  5                  if .fit_ok then (
;  555          0982  5                          anl$format_line(0,2,anlobj$_objsymbol,.work_dsc[len],.work_dsc[ptr]);
;  556          0983  5                          anl$check_symbol(work_dsc, obj$c_symsiz);
;  557          0984  4                  );
;  558          0985  4
;  559          0986  4                  ! Finally, advance the scan pointer past this record.
;  560          0987  4
;  561          0988  4                          scanp = .work_dsc[ptr] + .work_dsc[len];
;  562          0989  3                          );
;  563          0990  3
;  564          0991  3                  tes;
;  565          0992  3
;  566          0993  2 );
;  567          0994  2
;  568          0995  2 return;
;  569          0996  2
;  570          0997  1 end;


                                                                .TITLE  OBJGSD OBJGSD - Analyze GSD Records
                                                                .IDENT  \V04-000\

                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

          43  49  50  5F  56  24  53  50  47  09  00000 P.AAA:  .ASCII  <9>\GPS$V_PIC\                                          ;
          42  49  4C  5F  56  24  53  50  47  09  0000A P.AAB:  .ASCII  <9>\GPS$V_LIB\                                          ;
          4C  56  4F  5F  56  24  53  50  47  09  00014 P.AAC:  .ASCII  <9>\GPS$V_OVL\                                          ;
          4C  45  52  5F  56  24  53  50  47  09  0001E P.AAD:  .ASCII  <9>\GPS$V_REL\                                          ;
          4C  42  47  5F  56  24  53  50  47  09  00028 P.AAE:  .ASCII  <9>\GPS$V_GBL\                                          ;
          52  48  53  5F  56  24  53  50  47  09  00032 P.AAF:  .ASCII  <9>\GPS$V_SHR\                                          ;
          45  58  45  5F  56  24  53  50  47  09  0003C P.AAG:  .ASCII  <9>\GPS$V_EXE\                                          ;
              44  52  5F  56  24  53  50  47  08  00046 P.AAH:  .ASCII  <8>\GPS$V_RD\                                           ;
          54  52  57  5F  56  24  53  50  47  09  0004F P.AAI:  .ASCII  <9>\GPS$V_WRT\                                          ;
```

```
                   43  45  56  5F  56  24  53  50  47  09  00059 P.AAJ:   .ASCII  <9>\GPS$V_VEC\                    ;
                4B 41  45  57  5F  56  24  59  53  47  0A  00063 P.AAK:   .ASCII  <10>\GSY$V_WEAK\                  ;
                   46  45  44  5F  56  24  59  53  47  09  0006E P.AAL:   .ASCII  <9>\GSY$V_DEF\                   ;
                   49  4E  55  5F  56  24  59  53  47  09  00078 P.AAM:   .ASCII  <9>\GSY$V_UNI\                   ;
                   4C  45  52  5F  56  24  59  53  47  09  00082 P.AAN:   .ASCII  <9>\GSY$V_REL\                   ;
                   46  45  44  5F  56  24  56  4E  45  09  0008C P.AAO:   .ASCII  <9>\ENV$V_DEF\                   ;
            44  45  54  53  45  4E  5F  56  24  56  4E  45  0C  00096 P.AAP:   .ASCII  <12>\ENV$V_NESTED\            ;
54  4E  45  44  49  4E  49  42  5F  56  24  43  44  49  0E  000A3 P.AAQ:   .ASCII  <14>\IDC$V_BINIDENT\           ;
                                       51  45  4C  03  000B2 P.AAR:   .ASCII  <3>\LEQ\                          ;
                               4C  41  55  51  45  05  000B6 P.AAS:   .ASCII  <5>\EQUAL\                        ;

                                                               .PSECT  $OWN$,NOEXE,2

                                                   FFFFFFFF  00000 HIGHEST_DEF_PSECT:
                                                               .LONG   -1                                          ;
                                                   FFFFFFFF  00004 HIGHEST_REF_PSECT:
                                                               .LONG   -1                                          ;
                                                             00008 PSECT_REF_BITS:
                                                               .BLKB   4
                                                   FFFFFFFF  0000C HIGHEST_DEF_ENV:
                                                               .LONG   -1                                          ;
                                                   FFFFFFFF  00010 HIGHEST_REF_ENV:
                                                               .LONG   -1                                          ;
                                                             00014 ENV_REF_BITS:
                                                               .BLKB   4
                                                   00000009  00018 PSC_FLAGS_DEF:
                                                               .LONG   9                                           ;
00000000' 00000000' 00000000' 00000000' 00000000' 00000000' 0001C               .ADDRESS P.AAA, P.AAB, P.AAC, P.AAD, P.AAE, -  ;
                    00000000' 00000000' 00000000' 00000000' 00034                     P.AAF, P.AAG, P.AAH, P.AAI, P.AAJ     ;
                                                   00000003  00044 SYM_FLAGS_DEF:
                                                               .LONG   3                                           ;
                    00000000' 00000000' 00000000' 00000000' 00048               .ADDRESS P.AAK, P.AAL, P.AAM, P.AAN    ;
                                                   00000001  00058 ENV_FLAGS_DEF:
                                                               .LONG   1                                           ;
                                         00000000' 00000000' 0005C             .ADDRESS P.AAO, P.AAP                 ;
                                                   00000000  00064 ENTITY_FLAGS_DEF:
                                                               .LONG   0                                           ;
                                                   00000000' 00068             .ADDRESS P.AAQ                      ;
00000000G 00000000G 00000000G 00000000G 00000000G 00000000G 0006C GSD_SUBRECORD_MSG:
                                                               .LONG   ANLOBJ$_OBJGSDPSC, ANLOBJ$_OBJGSDSYM, -     ;
00000000G 00000000G 00000000G 00000000G 00000000G 00000000G 00084                      ANLOBJ$_OBJGSDEPM, ANLOBJ$_OBJGSDPRO, -  ;
                                                   00000000G 0009C                     ANLOBJ$_OBJGSDSYMW, ANLOBJ$_OBJGSDEPMW, -  ;
                                                                                       ANLOBJ$_OBJGSDPROW, ANLOBJ$_OBJGSDIDC, -  ;
                                                                                       ANLOBJ$_OBJGSDENV, ANLOBJ$_OBJGSDLSY, -  ;
                                                                                       ANLOBJ$_OBJGSDLEPM, ANLOBJ$_OBJGSDLPRO, -  ;
                                                                                       ANLOBJ$_OBJGSDSPSC                 ;

                                                               .EXTRN  ANLOBJ$_OK, ANLOBJ$_ANYTHING
                                                               .EXTRN  ANLOBJ$_DATATYPE
                                                               .EXTRN  ANLOBJ$_ERRORCOUNT
                                                               .EXTRN  ANLOBJ$_ERRORNONE
                                                               .EXTRN  ANLOBJ$_ERRORS, ANLOBJ$_EXEFIXA
                                                               .EXTRN  ANLOBJ$_EXEFIXAIMAGE
                                                               .EXTRN  ANLOBJ$_EXEFIXALINE
                                                               .EXTRN  ANLOBJ$_EXEFIXCOUNT
                                                               .EXTRN  ANLOBJ$_EXEFIXEXTRA
                                                               .EXTRN  ANLOBJ$_EXEFIXFIXED
```

```
                .EXTRN  ANLOBJ$_EXEFIXFLAGS
                .EXTRN  ANLOBJ$_EXEFIXG
                .EXTRN  ANLOBJ$_EXEFIXGIMAGE
                .EXTRN  ANLOBJ$_EXEFIXGLINE
                .EXTRN  ANLOBJ$_EXEFIXLIST
                .EXTRN  ANLOBJ$_EXEFIXNAME
                .EXTRN  ANLOBJ$_EXEFIXNAMEO
                .EXTRN  ANLOBJ$_EXEFIXP
                .EXTRN  ANLOBJ$_EXEFIXPSECT
                .EXTRN  ANLOBJ$_EXEFIXUP
                .EXTRN  ANLOBJ$_EXEFIXUPNONE
                .EXTRN  ANLOBJ$_EXEGST, ANLOBJ$_EXEHDR
                .EXTRN  ANLOBJ$_EXEHDRACTIVE
                .EXTRN  ANLOBJ$_EXEHDRBLKCOUNT
                .EXTRN  ANLOBJ$_EXEHDRCHANCOUNT
                .EXTRN  ANLOBJ$_EXEHDRCHANDEF
                .EXTRN  ANLOBJ$_EXEHDRDECECO
                .EXTRN  ANLOBJ$_EXEHDRDMT
                .EXTRN  ANLOBJ$_EXEHDRDST
                .EXTRN  ANLOBJ$_EXEHDRFILEID
                .EXTRN  ANLOBJ$_EXEHDRFIXED
                .EXTRN  ANLOBJ$_EXEHDRFLAGS
                .EXTRN  ANLOBJ$_EXEHDRGBLIDENT
                .EXTRN  ANLOBJ$_EXEHDRGST
                .EXTRN  ANLOBJ$_EXEHDRIDENT
                .EXTRN  ANLOBJ$_EXEHDRIMAGEID
                .EXTRN  ANLOBJ$_EXEHDRISD
                .EXTRN  ANLOBJ$_EXEHDRISDBASE
                .EXTRN  ANLOBJ$_EXEHDRISDCOUNT
                .EXTRN  ANLOBJ$_EXEHDRISDFLAGS
                .EXTRN  ANLOBJ$_EXEHDRISDGBLNAM
                .EXTRN  ANLOBJ$_EXEHDRISDNUM
                .EXTRN  ANLOBJ$_EXEHDRISDPFCDEF
                .EXTRN  ANLOBJ$_EXEHDRISDPFCSIZ
                .EXTRN  ANLOBJ$_EXEHDRISDTYPE
                .EXTRN  ANLOBJ$_EXEHDRISDVBN
                .EXTRN  ANLOBJ$_EXEHDRLINKID
                .EXTRN  ANLOBJ$_EXEHDRMATCH
                .EXTRN  ANLOBJ$_EXEHDRNAME
                .EXTRN  ANLOBJ$_EXEHDRNOPATCH
                .EXTRN  ANLOBJ$_EXEHDRPAGECOUNT
                .EXTRN  ANLOBJ$_EXEHDRPAGEDEF
                .EXTRN  ANLOBJ$_EXEHDRPATCH
                .EXTRN  ANLOBJ$_EXEHDRPATCHDATE
                .EXTRN  ANLOBJ$_EXEHDRPRIV
                .EXTRN  ANLOBJ$_EXEHDRROPATCH
                .EXTRN  ANLOBJ$_EXEHDRRWPATCH
                .EXTRN  ANLOBJ$_EXEHDRSYMDBG
                .EXTRN  ANLOBJ$_EXEHDRSYSVER
                .EXTRN  ANLOBJ$_EXEHDRTEXTVBN
                .EXTRN  ANLOBJ$_EXEHDRTIME
                .EXTRN  ANLOBJ$_EXEHDRTYPEEXE
                .EXTRN  ANLOBJ$_EXEHDRTYPELIM
                .EXTRN  ANLOBJ$_EXEHDRUSERECO
                .EXTRN  ANLOBJ$_EXEHDRXFER1
                .EXTRN  ANLOBJ$_EXEHDRXFER2
                .EXTRN  ANLOBJ$_EXEHDRXFER3
```

```
                .EXTRN  ANLOBJ$_EXEHEADING
                .EXTRN  ANLOBJ$_EXEPATCH
                .EXTRN  ANLOBJ$_FLAG, ANLOBJ$_HEXDATA
                .EXTRN  ANLOBJ$_HEXHEADING1
                .EXTRN  ANLOBJ$_HEXHEADING2
                .EXTRN  ANLOBJ$_INDMSGSEC
                .EXTRN  ANLOBJ$_INTERACT
                .EXTRN  ANLOBJ$_MASK, ANLOBJ$_OBJCPRREC
                .EXTRN  ANLOBJ$_OBJDBGREC
                .EXTRN  ANLOBJ$_OBJENV, ANLOBJ$_OBJEOMFLAGS
                .EXTRN  ANLOBJ$_OBJEOMREC
                .EXTRN  ANLOBJ$_OBJEOMSEVABT
                .EXTRN  ANLOBJ$_OBJEOMSEVERR
                .EXTRN  ANLOBJ$_OBJEOMSEVIGN
                .EXTRN  ANLOBJ$_OBJEOMSEVRES
                .EXTRN  ANLOBJ$_OBJEOMSEVSUC
                .EXTRN  ANLOBJ$_OBJEOMSEVWRN
                .EXTRN  ANLOBJ$_OBJEOMWREC
                .EXTRN  ANLOBJ$_OBJFADPASSMECH
                .EXTRN  ANLOBJ$_OBJGSDENV
                .EXTRN  ANLOBJ$_OBJGSDENVFLAGS
                .EXTRN  ANLOBJ$_OBJGSDENVPAR
                .EXTRN  ANLOBJ$_OBJGSDEPM
                .EXTRN  ANLOBJ$_OBJGSDEPMW
                .EXTRN  ANLOBJ$_OBJGSDIDC
                .EXTRN  ANLOBJ$_OBJGSDIDCENT
                .EXTRN  ANLOBJ$_OBJGSDIDCFLAGS
                .EXTRN  ANLOBJ$_OBJGSDIDCMATCH
                .EXTRN  ANLOBJ$_OBJGSDIDCOBJ
                .EXTRN  ANLOBJ$_OBJGSDIDCVALA
                .EXTRN  ANLOBJ$_OBJGSDIDCVALB
                .EXTRN  ANLOBJ$_OBJGSDLEPM
                .EXTRN  ANLOBJ$_OBJGSDLPRO
                .EXTRN  ANLOBJ$_OBJGSDLSY
                .EXTRN  ANLOBJ$_OBJGSDPRO
                .EXTRN  ANLOBJ$_OBJGSDPROW
                .EXTRN  ANLOBJ$_OBJGSDPSC
                .EXTRN  ANLOBJ$_OBJGSDPSCALIGN
                .EXTRN  ANLOBJ$_OBJGSDPSCALLOC
                .EXTRN  ANLOBJ$_OBJGSDPSCBASE
                .EXTRN  ANLOBJ$_OBJGSDPSCFLAGS
                .EXTRN  ANLOBJ$_OBJGSDREC
                .EXTRN  ANLOBJ$_OBJGSDSPSC
                .EXTRN  ANLOBJ$_OBJGSDSYM
                .EXTRN  ANLOBJ$_OBJGSDSYMW
                .EXTRN  ANLOBJ$_OBJGTXREC
                .EXTRN  ANLOBJ$_OBJHDRIGNREC
                .EXTRN  ANLOBJ$_OBJHEADING
                .EXTRN  ANLOBJ$_OBJLITINDEX
                .EXTRN  ANLOBJ$_OBJLNKREC
                .EXTRN  ANLOBJ$_OBJLNMREC
                .EXTRN  ANLOBJ$_OBJMHDCREATE
                .EXTRN  ANLOBJ$_OBJMHDNAME
                .EXTRN  ANLOBJ$_OBJMHDPATCH
                .EXTRN  ANLOBJ$_OBJMHDREC
                .EXTRN  ANLOBJ$_OBJMHDRECSIZ
                .EXTRN  ANLOBJ$_OBJMHDSTRLVL
```

```
                .EXTRN  ANLOBJ$_OBJMHDVERSION
                .EXTRN  ANLOBJ$_OBJMTCCORRECT
                .EXTRN  ANLOBJ$_OBJMTCINPUT
                .EXTRN  ANLOBJ$_OBJMTCNAME
                .EXTRN  ANLOBJ$_OBJMTCREC
                .EXTRN  ANLOBJ$_OBJMTCSEQNUM
                .EXTRN  ANLOBJ$_OBJMTCUIC
                .EXTRN  ANLOBJ$_OBJMTCVERSION
                .EXTRN  ANLOBJ$_OBJMTCWHEN
                .EXTRN  ANLOBJ$_OBJPROARGCOUNT
                .EXTRN  ANLOBJ$_OBJPROARGNUM
                .EXTRN  ANLOBJ$_OBJPSECT
                .EXTRN  ANLOBJ$_OBJSRCREC
                .EXTRN  ANLOBJ$_OBJSTATHEADING1
                .EXTRN  ANLOBJ$_OBJSTATHEADING2
                .EXTRN  ANLOBJ$_OBJSTATLINE
                .EXTRN  ANLOBJ$_OBJSTATTOTAL
                .EXTRN  ANLOBJ$_OBJSYMBOL
                .EXTRN  ANLOBJ$_OBJSYMFLAGS
                .EXTRN  ANLOBJ$_OBJTIRARGINDEX
                .EXTRN  ANLOBJ$_OBJTIRCMD
                .EXTRN  ANLOBJ$_OBJTIRCMDSTK
                .EXTRN  ANLOBJ$_OBJTBTREC
                .EXTRN  ANLOBJ$_OBJTIRREC
                .EXTRN  ANLOBJ$_OBJTIRSTOIM
                .EXTRN  ANLOBJ$_OBJTIRVIELD
                .EXTRN  ANLOBJ$_OBJTTLREC
                .EXTRN  ANLOBJ$_OBJVALUE
                .EXTRN  ANLOBJ$_OBJUVALUE
                .EXTRN  ANLOBJ$_PROTECTION
                .EXTRN  ANLOBJ$_SEVERITY
                .EXTRN  ANLOBJ$_TEXT, ANLOBJ$_TEXTHDR
                .EXTRN  ANLOBJ$_NOSUCHMOD
                .EXTRN  ANLOBJ$_BADDATE
                .EXTRN  ANLOBJ$_BADHDRBLKCOUNT
                .EXTRN  ANLOBJ$_BADSEVERITY
                .EXTRN  ANLOBJ$_BADSYMIST
                .EXTRN  ANLOBJ$_BADSYMCHAR
                .EXTRN  ANLOBJ$_BADSYMLEN
                .EXTRN  ANLOBJ$_EXEBADFIXUPEND
                .EXTRN  ANLOBJ$_EXEBADFIXUPISD
                .EXTRN  ANLOBJ$_EXEBADFIXUPVBN
                .EXTRN  ANLOBJ$_EXEBADISDS1
                .EXTRN  ANLOBJ$_EXEBADISDTYPE
                .EXTRN  ANLOBJ$_EXEBADMATCH
                .EXTRN  ANLOBJ$_EXEBADPATCHLEN
                .EXTRN  ANLOBJ$_EXEBADOBJ
                .EXTRN  ANLOBJ$_EXEBADTYPE
                .EXTRN  ANLOBJ$_EXEBADXFERO
                .EXTRN  ANLOBJ$_EXEHDRISDLONG
                .EXTRN  ANLOBJ$_EXEHDRLONG
                .EXTRN  ANLOBJ$_EXEISDLENDZRO
                .EXTRN  ANLOBJ$_EXEISDLENGBL
                .EXTRN  ANLOBJ$_EXEISDLENPRIV
                .EXTRN  ANLOBJ$_EXENOTNATIVE
                .EXTRN  ANLOBJ$_EXTRABYTES
                .EXTRN  ANLOBJ$_FIELDFIT
```

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                                                .EXTRN  ANLOBJ$_FLAGERROR
                                                .EXTRN  ANLOBJ$_NOTOK, ANLOBJ$_OBJBADIDCMATCH
                                                .EXTRN  ANLOBJ$_OBJBADNUM
                                                .EXTRN  ANLOBJ$_OBJBADPOP
                                                .EXTRN  ANLOBJ$_OBJBADPUSH
                                                .EXTRN  ANLOBJ$_OBJBADTYPE
                                                .EXTRN  ANLOBJ$_OBJBADVIELD
                                                .EXTRN  ANLOBJ$_OBJEOMBADSEV
                                                .EXTRN  ANLOBJ$_OBJEOMMISSING
                                                .EXTRN  ANLOBJ$_OBJFADBADAVC
                                                .EXTRN  ANLOBJ$_OBJFADBADRBC
                                                .EXTRN  ANLOBJ$_OBJGSDBADALIGN
                                                .EXTRN  ANLOBJ$_OBJGSDBADSUBTYP
                                                .EXTRN  ANLOBJ$_OBJHDRRES
                                                .EXTRN  ANLOBJ$_OBJMHDBADRECSIZ
                                                .EXTRN  ANLOBJ$_OBJMHDBADSTRLVL
                                                .EXTRN  ANLOBJ$_OBJMHDMISSING
                                                .EXTRN  ANLOBJ$_OBJNONTIRCMD
                                                .EXTRN  ANLOBJ$_OBJNOPSC
                                                .EXTRN  ANLOBJ$_OBJNULLREC
                                                .EXTRN  ANLOBJ$_OBJPOSPACE
                                                .EXTRN  ANLOBJ$_OBJPROMINMAX
                                                .EXTRN  ANLOBJ$_OBJPSCABSLEN
                                                .EXTRN  ANLOBJ$_OBJRECTOOBIG
                                                .EXTRN  ANLOBJ$_OBJTIRRES
                                                .EXTRN  ANLOBJ$_OBJUNDEFENV
                                                .EXTRN  ANLOBJ$_OBJUNDEFLIT
                                                .EXTRN  ANLOBJ$_OBJUNDEFPSC
                                                .EXTRN  ANALYZE$_FACILITY
                                                .EXTRN  ANL$CHECK_FLAGS
                                                .EXTRN  ANL$CHECK_SYMBOL
                                                .EXTRN  ANL$FORMAT_DATA_TYPE
                                                .EXTRN  ANL$FORMAT_ERROR
                                                .EXTRN  ANL$FORMAT_FLAGS
                                                .EXTRN  ANL$FORMAT_HEX, ANL$FORMAT_LINE
                                                .EXTRN  ANL$FORMAT_MASK
                                                .EXTRN  ANL$FORMAT_SEVERITY
                                                .EXTRN  ANL$OBJECT_RECORD_LINE
                                                .EXTRN  ANL$REPORT_LINE
                                                .EXTRN  LIB$FREE_VM, LIB$GET_VM

                                                .PSECT  $CODE$,NOWRT,2

                                0FFC 00000      .ENTRY  ANL$OBJECT_GSD, Save R2,R3,R4,R5,R6,R7,R8,- ; 0573
                                                        R9,R10,R11
                    5B 00000000G  8F   DO 00002         MOVL    #ANLOBJ$_FIELDFIT, R11          ;
                    5E            0C   C2 00009         SUBL2   #12, SP                         ;
                    56      08    AC   DO 0000C         MOVL    THE_RECORD, R6                  ; 0576
                                  56   DD 00010         PUSHL   R6                              ; 0647
                            04    AC   DD 00012         PUSHL   RECORD_NUMBER                   ;
                       00000000G  8F   DD 00015         PUSHL   #ANLOBJ$_OBJGSDREC              ;
              0000G CF              03   FB 0001B         CALLS   #3, ANL$OBJECT_RECORD_LINE      ;
                                    59   D4 00020         CLRL    SUBRECORD_NUMBER                ; 0654
6E      04    A6                    01   C1 00022         ADDL3   #1, 4(R6), SCANP                ; 0655
                                    53   01   90 00027     MOVB    #1, FIT_OK                      ; 0656
                                    52   6E   DO 0002A 1$:  MOVL    SCANP, R2                       ; 0657
                                    54   66   3C 0002D     MOVZWL  (R6), R4                        ;
```

```
                         54        04   A6  C0 00030        ADDL2   4(R6), R4                        ;
                         54             52  D1 00034        CMPL    R2, R4                           ;
                                        01  1F 00037        BLSSU   2$                               ;
                                            04 00039        RET                                      ;
                         01             53  E8 0003A 2$:    BLBS    FIT_OK, 3$                       ;
                                            04 0003D        RET                                      ;
                                        59  D6 0003E 3$:    INCL    SUBRECORD_NUMBER                 ; 0663
                                        7E  D4 00040        CLRL    -(SP)                            ; 0664
                   0000G CF             01  FB 00042        CALLS   #1, ANL$REPORT_LINE              ;
                         5A             62  90 00047        MOVB    (R2), GSD_TYPE                   ; 0666
                         55             5A  9A 0004A        MOVZBL  GSD_TYPE, R5                     ; 0667
                         0C             55  91 0004D        CMPB    R5, #12                          ;
                                        12  1A 00050        BGTRU   4$                               ;
                                        59  DD 00052        PUSHL   SUBRECORD_NUMBER                 ; 0668
                               0000'CF45    DD 00054        PUSHL   GSD_SUBRECORD_MSG[R5]            ;
                                        01  DD 00059        PUSHL   #1                               ;
                                        02  DD 0005B        PUSHL   #2                               ;
                   0000G CF             04  FB 0005D        CALLS   #4, ANL$FORMAT_LINE              ;
                                        2A  11 00062        BRB     5$                               ;
                                        55  DD 00064 4$:    PUSHL   R5                               ; 0670
                            00000000G   8F  DD 00066        PUSHL   #ANLOBJ$_OBJGSDBADSUBTYP         ;
                   0000G CF             02  FB 0006C        CALLS   #2, ANL$FORMAT_ERROR             ;
              50   04    A6             52  C3 00071        SUBL3   R2, 4(R6), R0                    ; 0671
                         51             66  3C 00076        MOVZWL  (R6), R1                         ;
         04   AE         50             51  C1 00079        ADDL3   R', R0, WORK_DSC                 ;
                   08    AE        04   A6  D0 0007E        MOVL    4(R6), WORK_DSC+4                ;
                                   04   AE  9F 00083        PUSHAB  WORK_DSC                         ; 0672
                                        02  DD 00086        PUSHL   #2                               ;
                   0000G CF             02  FB 00088        CALLS   #2, ANL$FORMAT_HEX               ;
                                            04 0008D        RET                                      ; 0669
              0C         00             55  8F 0008E 5$:    CASEB   R5, #0, #12                      ; 0678
   0165       0165       0165         001A     00092 6$:    .WORD   7$-6$,-                          ;
   0410       0165       0165         0165     0009A                23$-6$,-                         ;
   0165       0165       0165         05DC     000A2                23$-6$,-                         ;
                                      001A     000AA                23$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    53$-6$,-                         ;
                                                                    72$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    23$-6$,-                         ;
                                                                    7$-6$                            ;
                         7E             53  E9 000AC 7$:    BLBC    FIT_OK, 11$                      ; 0686
                         50        02   A2  9E 000AF        MOVAB   2(R2), R0                        ;
                         54             50  D1 000B3        CMPL    R0, R4                           ;
                                        09  1B 000B6        BLEQU   8$                               ;
                                        5B  DD 000B8        PUSHL   R11                              ;
                   0000G CF             01  FB 000BA        CALLS   #1, ANL$FORMAT_ERROR             ;
                                        53  94 000BF        CLRB    FIT_OK                           ;
                         7E             53  E9 000C1 8$:    BLBC    FIT_OK, 12$                      ; 0687
                               0000'    CF  D6 000C4        INCL    HIGHEST_DEF_PSECT                ; 0688
                               0000'    CF  DD 000C8        PUSHL   HIGHEST_DEF_PSECT                ; 0690
              7E         01        01   A2  78 000CC        ASHL    1(R2), #1, -(SP)                 ; 0689
                            00000000G   8F  DD 000D1        PUSHL   #ANLOBJ$_OBJGSDPSCALIGN          ;
                                        02  DD 000D7        PUSHL   #2                               ;
```

```
                                  7E  D4 000D9          CLRL    -(SP)                              ;
           0000G  CF              05  FB 000DB          CALLS   #5, ANL$FORMAT_LINE                ;
                  09       01     A2  91 000E0          CMPB    1(R2), #9                          ; 0691
                                  0D  1B 000E4          BLEQU   9$                                 ;
                                  09  DD 000E6          PUSHL   #9                                 ; 0692
                      00000000G   8F  DD 000E8          PUSHL   #ANLOBJ$_OBJGSDBADALIGN            ;
           0000G  CF              02  FB 000EE          CALLS   #2, ANL$FORMAT_ERROR               ;
                  4C              53  E9 000F3 9$:      BLBC    FIT_OK, 12$                        ; 0697
                  50       04     A2  9E 000F6          MOVAB   4(R2), R0                          ;
                  54              50  D1 000FA          CMPL    R0, R4                             ;
                                  09  1B 000FD          BLEQU   10$                                ;
                                  5B  DD 000FF          PUSHL   R11                                ;
           0000G  CF              01  FB 00101          CALLS   #1, ANL$FORMAT_ERROR               ;
                                  53  94 00106          CLRB    FIT_OK                             ;
                  76              53  E9 00108 10$:     BLBC    FIT_OK, 14$                        ; 0698
                         0000'    CF  9F 0010B          PUSHAB  PSC_FLAGS_DEF                      ; 0699
                  7E       02     A2  3C 0010F          MOVZWL  2(R2), -(SP)                       ;
                      00000000G   8F  DD 00113          PUSHL   #ANLOBJ$_OBJGSDPSCFLAGS            ;
                                  02  DD 00119          PUSHL   #2                                 ;
           0000G  CF              04  FB 0011B          CALLS   #4, ANL$FORMAT_FLAGS               ;
                         0000'    CF  9F 00120          PUSHAB  PSC_FLAGS_DEF                      ; 0700
                  7E       02     A2  3C 00124          MOVZWL  2(R2), -(SP)                       ;
           0000G  CF              02  FB 00128          CALLS   #2, ANL$CHECK_FLAGS                ;
                  51              53  E9 0012D 11$:     BLBC    FIT_OK, 14$                        ; 0705
                  50       08     A2  9E 00130          MOVAB   8(R2), R0                          ;
                  54              50  D1 00134          CMPL    R0, R4                             ;
                                  09  1B 00137          BLEQU   12$                                ;
                                  5B  DD 00139          PUSHL   R11                                ;
           0000G  CF              01  FB 0013B          CALLS   #1, ANL$FORMAT_ERROR               ;
                                  53  94 00140          CLRB    FIT_OK                             ;
                  3C              53  E9 00142 12$:     BLBC    FIT_OK, 14$                        ; 0706
                           04     A2  DD 00145          PUSHL   4(R2)                              ; 0707
                      00000000G   8F  DD 00148          PUSHL   #ANLOBJ$_OBJGSDPSCALLOC            ;
                                  02  DD 0014E          PUSHL   #2                                 ;
                                  7E  D4 00150          CLRL    -(SP)                              ;
           0000G  CF              04  FB 00152          CALLS   #4, ANL$FORMAT_LINE                ;
        3FFFFFFF  8F       04     A2  D1 00157          CMPL    4(R2), #1073741823                 ; 0708
                                  0B  1B 0015F          BLEQU   13$                                ;
                      00000000G   8F  DD 00161          PUSHL   #ANLOBJ$_OBJPOSPACE                ; 0709
           0000G  CF              01  FB 00167          CALLS   #1, ANL$FORMAT_ERROR               ;
    10     02     A2              03  E0 0016C 13$:     BBS     #3, 2(R2), 14$                     ; 0710
                           04     A2  D5 00171          TSTL    4(R2)                              ;
                                  0B  13 00174          BEQL    14$                                ;
                      00000000G   8F  DD 00176          PUSHL   #ANLOBJ$_OBJPSCABSLEN              ; 0711
           0000G  CF              01  FB 0017C          CALLS   #1, ANL$FORMAT_ERROR               ;
                  0C              55  91 00181 14$:     CMPB    R5, #12                            ; 0720
                                  2F  12 00184          BNEQ    17$                                ;
                  27              53  E9 00186          BLBC    FIT_OK, 16$                        ; 0721
                  50       0C     A2  9E 00189          MOVAB   12(R2), R0                         ;
                  54              50  D1 0018D          CMPL    R0, R4                             ;
                                  09  1B 00190          BLEQU   15$                                ;
                                  5B  DD 00192          PUSHL   R11                                ;
           0000G  CF              01  FB 00194          CALLS   #1, ANL$FORMAT_ERROR               ;
                                  53  94 00199          CLRB    FIT_OK                             ;
                  12              53  E9 0019B 15$:     BLBC    FIT_OK, 16$                        ; 0722
                           08     A2  DD 0019E          PUSHL   8(R2)                              ; 0723
                      00000000G   8F  DD 001A1          PUSHL   #ANLOBJ$_OBJGSDPSCBASE             ;
```

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                                    02  DD 001A7          PUSHL   #2                                                    ;
                                    7E  D4 001A9          CLRL    -(SP)                                                 ;
                0000G               CF  04 FB 001AB       CALLS   #4, ANL$FORMAT_LINE                                   ;
                                    6E  0C C0 001B0 16$:  ADDL2   #12, SCANP                                            ; 0724
                                        03 11 001B3       BRB     18$                                                   ; 0720
                                    6E  08 C0 001B5 17$:  ADDL2   #8, SCANP                                             ; 0726
                                    1F  53 E9 001B8 18$:  BLBC    FIT_OK, 20$                                           ; 0730
                    50              6E  01 C1 001BB       ADDL3   #1, SCANP, R0                                         ;
                                    54  50 D1 001BF       CMPL    R0, R4                                                ;
                                        09 1B 001C2       BLEQU   19$                                                   ;
                                        5B DD 001C4       PUSHL   R11                                                   ;
                0000G               CF  01 FB 001C6       CALLS   #1, ANL$FORMAT_ERROR                                  ;
                                        53 94 001CB       CLRB    FIT_OK                                                ;
                                    0A  53 E9 001CD 19$:  BLBC    FIT_OK, 20$                                           ;
                                  04 AE 00  BE 9A 001D0   MOVZBL  @SCANP, WORK_DSC                                      ;
                    08 AE           6E  01 C1 001D5       ADDL3   #1, SCANP, WORK_DSC+4                                 ;
                                    03  53 E8 001DA 20$:  BLBS    FIT_OK, 21$                                           ;
                                      0566 31 001DD       BRW     78$                                                   ;
                                    50  04 AE 3C 001E0 21$:  MOVZWL  WORK_DSC, R0                                       ;
                                    50  08 C6 001E4       DIVL2   #8, R0                                                ;
                                    50  6E C0 001E7       ADDL2   SCANP, R0                                             ;
                                        50 D6 001EA       INCL    R0                                                    ;
                                    54  50 D1 001EC       CMPL    R0, R4                                                ;
                                        03 1A 001EF       BGTRU   22$                                                   ;
                                      052F 31 001F1       BRW     77$                                                   ;
                                      0523 31 001F4 22$:  BRW     76$                                                   ;
                                    35  53 E9 001F7 23$:  BLBC    FIT_OK, 25$                                           ; 0762
                                    50  02 A2 9E 001FA    MOVAB   2(R2), R0                                             ;
                                    54  50 D1 001FE       CMPL    R0, R4                                                ;
                                        09 1B 00201       BLEQU   24$                                                   ;
                                        5B DD 00203       PUSHL   R11                                                   ;
                0000G               CF  01 FB 00205       CALLS   #1, ANL$FORMAT_ERROR                                  ;
                                        53 94 0020A       CLRB    FIT_OK                                                ;
                                    78  53 E9 0020C 24$:  BLBC    FIT_OK, 29$                                           ; 0763
                                    7E  01 A2 9A 0020F    MOVZBL  1(R2), -(SP)                                          ; 0764
                                        02 DD 00213       PUSHL   #2                                                    ;
                0000G               CF  02 FB 00215       CALLS   #2, ANL$FORMAT_DATA_TYPE                              ;
                                    6A  53 E9 0021A       BLBC    FIT_OK, 29$                                           ; 0773
                                    50  04 A2 9E 0021D    MOVAB   4(R2), R0                                             ;
                                    54  50 D1 00221       CMPL    R0, R4                                                ;
                                        09 1B 00224       BLEQU   25$                                                   ;
                                        5B DD 00226       PUSHL   R11                                                   ;
                0000G               CF  01 FB 00228       CALLS   #1, ANL$FORMAT_ERROR                                  ;
                                        53 94 0022D       CLRB    FIT_OK                                                ;
                                    55  53 E9 0022F 25$:  BLBC    FIT_OK, 29$                                           ; 0774
                                  0000' CF  9F 00232      PUSHAB  SYM_FLAGS_DEF                                         ; 0775
                                    7E    02  A2 3C 00236 MOVZWL  2(R2), -(SP)                                          ;
                                00000000G 8F  DD 0023A    PUSHL   #ANLOBJ$_OBJSYMFLAGS                                  ;
                                        02 DD 00240       PUSHL   #2                                                    ;
                0000G               CF  04 FB 00242       CALLS   #4, ANL$FORMAT_FLAGS                                  ;
                                  0000' CF  9F 00247      PUSHAB  SYM_FLAGS_DEF                                         ; 0776
                                    50  02 A2 3C 0024B    MOVZWL  2(R2), R0                                             ;
                7E                  50 FFFF0800 8F CB 0024F BICL3 #-63488, R0, -(SP)                                    ;
                0000G               CF  02 FB 00257       CALLS   #2, ANL$CHECK_FLAGS                                   ;
                                        50 D4 0025C       CLRL    R0                                                    ; 0781
                                    01  55 91 0025E       CMPB    R5, #1                                                ;
                                        02 12 00261       BNEQ    26$                                                   ;
```

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                                                50   D6 00263          INCL    R0                                                  ;
                                                51   D4 00265 26$:     CLRL    R1                                                  ; 0782
                                          04    55   91 00267          CMPB    R5, #4                                              ;
                                                02   12 0026A          BNEQ    27$                                                 ;
                                                51   D6 0026C          INCL    R1                                                  ;
                                          51    50   C8 0026E 27$:     BISL2   R0, R1                                              ;
                                                50   D4 00271          CLRL    R0                                                  ; 0783
                                          09    55   91 00273          CMPB    R5, #9                                              ;
                                                02   12 00276          BNEQ    28$                                                 ;
                                                50   D6 00278          INCL    R0                                                  ;
                                    58    50    51   89 0027A 28$:     BISB3   R1, R0, SYMBOL_SPEC                                 ;
                              50    02    A2    01   01   EF 0027E      EXTZV   #1, #1, 2(R2), R0                                   ; 0784
                                          57    50   90 00284          MOVB    R0, SYMBOL_DEF                                      ;
                                          6E    04   C0 00287 29$:     ADDL2   #4, SCANP                                           ; 0792
                                          09    55   91 0028A          CMPB    R5, #9                                              ; 0797
                                                0A   13 0028D          BEQL    30$                                                 ;
                                          0A    55   91 0028F          CMPB    R5, #10                                             ; 0798
                                                05   13 00292          BEQL    30$                                                 ;
                                          0B    55   91 00294          CMPB    R5, #11                                             ; 0799
                                                37   12 00297          BNEQ    32$                                                 ;
                                          34    53   E9 00299 30$:     BLBC    FIT_OK, 32$                                         ; 0800
                                    50    6E    02   C1 0029C          ADDL3   #2, SCANP, R0                                       ;
                                          54    50   D1 002A0          CMPL    R0, R4                                              ;
                                                09   1B 002A3          BLEQU   31$                                                 ;
                                                5B   DD 002A5          PUSHL   R11                                                 ;
                                    0000G CF    01   FB 002A7          CALLS   #1, ANL$FORMAT_ERROR                                ;
                                                53   94 002AC          CLRB    FIT_OK                                              ;
                                          1F    53   E9 002AE 31$:     BLBC    FIT_OK, 32$                                         ; 0801
                                          7E 00 BE   3C 002B1          MOVZWL  @SCANP, -(SP)                                       ; 0802
                                       00000000G  8F   DD 002B5          PUSHL   #ANLOBJ$_OBJENV                                     ;
                                                02   DD 002BB          PUSHL   #2                                                  ;
                                                7E   D4 002BD          CLRL    -(SP)                                               ;
                                    0000G CF    04   FB 002BF          CALLS   #4, ANL$FORMAT_LINE                                 ;
                                          7E 00 BE   3C 002C4          MOVZWL  @SCANP, -(SP)                                       ; 0803
                                    0000V CF    01   FB 002C8          CALLS   #1, ANL$OBJECT_ENV_REF                              ;
                                          6E    02   C0 002CD          ADDL2   #2, SCANP                                           ; 0804
                                          06    58   E9 002D0 32$:     BLBC    SYMBOL_SPEC, 33$                                    ; 0811
                                          03    57   E8 002D3          BLBS    SYMBOL_DEF, 33$                                     ;
                                             00D7   31   002D6          BRW     43$                                                 ;
                                          01    55   91 002D9 33$:     CMPB    R5, #1                                              ; 0817
                                                0A   13 002DC          BEQL    34$                                                 ;
                                          02    55   91 002DE          CMPB    R5, #2                                              ; 0818
                                                05   13 002E1          BEQL    34$                                                 ;
                                          03    55   91 002E3          CMPB    R5, #3                                              ; 0819
                                                38   12 002E6          BNEQ    36$                                                 ;
                                          12    53   E9 002E8 34$:     BLBC    FIT_OK, 35$                                         ; 0820
                              50          6E    01   C1 002EB          ADDL3   #1, SCANP, R0                                       ;
                                          54    50   D1 002EF          CMPL    R0, R4                                              ;
                                                09   1B 002F2          BLEQU   35$                                                 ;
                                                5B   DD 002F4          PUSHL   R11                                                 ;
                                    0000G CF    01   FB 002F6          CALLS   #1, ANL$FORMAT_ERROR                                ;
                                                53   94 002FB          CLRB    FIT_OK                                              ;
                                          6C    53   E9 002FD 35$:     BLBC    FIT_OK, 39$                                         ; 0821
                                          7E 00 BE   9A 00300          MOVZBL  @SCANP, -(SP)                                       ; 0822
                                       00000000G  8F   DD 00304          PUSHL   #ANLOBJ$_OBJPSECT                                   ;
                                                02   DD 0030A          PUSHL   #2                                                  ;
                                                7E   D4 0030C          CLRL    -(SP)                                               ;
```

```
                0000G  CF              04 FB 0030E          CALLS   #4, ANL$FORMAT_LINE
                       7E        00    BE 9A 00313          MOVZBL  @SCANP, -(SP)                   ;0823
                0000V  CF              01 FB 00317          CALLS   #1, ANL$OBJECT_PSECT_REF
                       6E              6E D6 0031C          INCL    SCANP                           ;0824
                                       37 11 0031E          BRB     38$                             ;0817
                       61              53 E9 00320 36$:     BLBC    FIT_OK, 40$                     ;0829
          50           6E              02 C1 00323          ADDL3   #2, SCANP, R0
                       54              50 D1 00327          CMPL    R0, R4
                                       09 1B 0032A          BLEQU   37$
                                       5B DD 0032C          PUSHL   R11
                0000G  CF              01 FB 0032E          CALLS   #1, ANL$FORMAT_ERROR
                                       53 94 00333          CLRB    FIT_OK
                       4C              53 E9 00335 37$:     BLBC    FIT_OK, 40$                     ;0830
                       7E        00    BE 3C 00338          MOVZWL  @SCANP, -(SP)                   ;0831
                          00000000G    8F DD 0033C          PUSHL   #ANLOBJ$_OBJPSECT
                                       02 DD 00342          PUSHL   #2
                                       7E D4 00344          CLRL    -(SP)
                0000G  CF              04 FB 00346          CALLS   #4, ANL$FORMAT_LINE
                       7E        00    BE 3C 0034B          MOVZWL  @SCANP, -(SP)                   ;0832
                0000V  CF              01 FB 0034F          CALLS   #1, ANL$OBJECT_PSECT_REF
                       6E              02 C0 00354          ADDL2   #2, SCANP                       ;0833
                       2A              53 E9 00357 38$:     BLBC    FIT_OK, 40$                     ;0840
          50           6E              04 C1 0035A          ADDL3   #4, SCANP, R0
                       54              50 D1 0035E          CMPL    R0, R4
                                       09 1B 00361          BLEQU   39$
                                       5B DD 00363          PUSHL   R11
                0000G  CF              01 FB 00365          CALLS   #1, ANL$FORMAT_ERROR
                                       53 94 0036A          CLRB    FIT_OK
                       15              53 E9 0036C 39$:     BLBC    FIT_OK, 40$                     ;0841
                             00        BE DD 0036F          PUSHL   @SCANP                          ;0842
                          00000000G    8F DD 00372          PUSHL   #ANLOBJ$_OBJVALUE
                                       02 DD 00378          PUSHL   #2
                                       7E D4 0037A          CLRL    -(SP)
                0000G  CF              04 FB 0037C          CALLS   #4, ANL$FORMAT_LINE
                       6E              04 C0 00381          ADDL2   #4, SCANP                       ;0843
                       03              58 F9 00384 40$:     BLBC    SYMBOL_SPEC, 41$                ;0850
                       26              57 E8 00387          BLBS    SYMBOL_DEF, 43$
                       62              53 E9 0038A 41$:     BLBC    FIT_OK, 45$                     ;0851
          50           6E              02 C1 0038D          ADDL3   #2, SCANP, R0
                       54              50 D1 00391          CMPL    R0, R4
                                       09 1B 00394          BLEQU   42$
                                       5B DD 00396          PUSHL   R11
                0000G  CF              01 FB 00398          CALLS   #1, ANL$FORMAT_ERROR
                                       53 94 0039D          CLRB    FIT_OK
                       79              53 E9 0039F 42$:     BLBC    FIT_OK, 46$                     ;0852
                       7E        00    BE 3C 003A2          MOVZWL  @SCANP, -(SP)                   ;0853
                                       02 DD 003A6          PUSHL   #2
                0000G  CF              02 FB 003A8          CALLS   #2, ANL$FORMAT_MASK
                       6E              02 C0 003AD          ADDL2   #2, SCANP                       ;0854
                       68              53 E9 003B0 43$:     BLBC    FIT_OK, 46$                     ;0862
          50           6E              01 C1 003B3          ADDL3   #1, SCANP, R0
                       54              50 D1 003B7          CMPL    R0, R4
                                       09 1B 003BA          BLEQU   44$
                                       5B DD 003BC          PUSHL   R11
                0000G  CF              01 FB 003BE          CALLS   #1, ANL$FORMAT_ERROR
                                       53 94 003C3          CLRB    FIT_OK
                       53              53 E9 003C5 44$:     BLBC    FIT_OK, 46$
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                     04   AE        00   BE  9A 003C8          MOVZBL  @SCANP, WORK_DSC                                    ;
                08   AE             6E       01  C1 003CD     ADDL3   #1, SCANP, WORK_DSC+4                               ;
                                    46       53  E9 003D2     BLBC    FIT_OK, 46$                                        ;
                                    50       04  AE 3C 003D5 MOVZWL  WORK_DSC, R0                                       ;
                                    50           08  C6 003D9 DIVL2   #8, R0                                            ;
                                    50           6E  C0 003DC ADDL2   SCANP, R0                                          ;
                                                 50  D6 003DF INCL    R0                                                 ;
                                    54           50  D1 003E1 CMPL    R0, R4                                             ;
                                                 09  1B 003E4 BLEQU   45$                                               ;
                                                 5B  DD 003E6 PUSHL   R11                                                ;
                           0000G     CF             01  FB 003E8 CALLS   #1, ANL$FORMAT_ERROR                           ;
                                                    53  94 003ED CLRB    FIT_OK                                         ;
                                    29              53  E9 003EF 45$:   BLBC    FIT_OK, 46$                            ; 0863
                                          08        AE  DD 003F2       PUSHL   WORK_DSC+4                             ; 0864
                                    7E    08        AE  3C 003F5       MOVZWL  WORK_DSC, -(SP)                        ;
                                       00000000G      8F  DD 003F9       PUSHL   #ANLOBJ$_OBJSYMBOL                     ;
                                                      02  DD 003FF       PUSHL   #2                                     ;
                                                      7E  D4 00401       CLRL    -(SP)                                  ;
                           0000G     CF             05  FB 00403       CALLS   #5, ANL$FORMAT_LINE                    ;
                                                    1F  DD 00408       PUSHL   #31                                    ; 0865
                                          08        AE  9F 0040A       PUSHAB  WORK_DSC                               ;
                           0000G     CF             02  FB 0040D       CALLS   #2, ANL$CHECK_SYMBOL                   ;
                                    50       04  AE 3C 00412 MOVZWL  WORK_DSC, R0                                       ; 0866
                                    6E       08 BE40 9E 00416 MOVAB   @WORK_DSC+4[R0], SCANP                          ;
                                    03              55  91 0041B 46$:   CMPB    R5, #3                                 ; 0872
                                                    0A  13 0041E       BEQL    47$                                    ;
                                    06              55  91 00420       CMPB    R5, #6                                 ; 0873
                                                    05  13 00423       BEQL    47$                                    ;
                                    0B              55  91 00425       CMPB    R5, #11                                ; 0874
                                                    75  12 00428       BNEQ    52$                                    ;
                                    72              53  E9 0042A 47$:   BLBC    FIT_OK, 52$                            ; 0882
                           50       6E              02  C1 0042D       ADDL3   #2, SCANP, R0                          ;
                                    54              50  D1 00431       CMPL    R0, R4                                 ;
                                                    09  1B 00434       BLEQU   48$                                    ;
                                                    5B  DD 00436       PUSHL   R11                                    ;
                           0000G     CF             01  FB 00438       CALLS   #1, ANL$FORMAT_ERROR                   ;
                                                    53  94 0043D       CLRB    FIT_OK                                 ;
                                    5D              53  E9 0043F 48$:   BLBC    FIT_OK, 52$                            ; 0883
                                    54              6E  D0 00442       MOVL    SCANP, R4                              ; 0884
                                    7E        01    A4  9A 00445       MOVZBL  1(R4), -(SP)                           ;
                                    7E              64  9A 00449       MOVZBL  (R4), -(SP)                            ;
                                       00000000G      8F  DD 0044C       PUSHL   #ANLOBJ$_OBJPROARGCOUNT                ;
                                                      02  DD 00452       PUSHL   #2                                     ;
                                                      7E  D4 00454       CLRL    -(SP)                                  ;
                           0000G     CF             05  FB 00456       CALLS   #5, ANL$FORMAT_LINE                    ;
                             01      A4             64  91 0045B       CMPB    (R4), 1(R4)                            ; 0885
                                                    0B  1B 0045F       BLEQU   49$                                    ;
                                       00000000G      8F  DD 00461       PUSHL   #ANLOBJ$_OBJPROMINMAX                  ; 0886
                           0000G     CF             01  FB 00467       CALLS   #1, ANL$FORMAT_ERROR                   ;
                                    55        01    A4  9A 0046C 49$:   MOVZBL  1(R4), MAX_ARGS                       ; 0887
                                    6E              02  C0 00470       ADDL2   #2, SCANP                              ; 0888
                                    54              01  D0 00473       MOVL    #1, I                                  ; 0893
                                                    22  11 00476       BRB     51$                                    ;
                                                    54  DD 00478 50$:   PUSHL   I                                      ; 0894
                                       00000000G      8F  DD 0047A       PUSHL   #ANLOBJ$_OBJPROARGNUM                  ;
                                                      02  DD 00480       PUSHL   #2                                     ;
                                                      7E  D4 00482       CLRL    -(SP)                                  ;
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                                0000G  CF              04  FB 00484          CALLS   #4, ANL$FORMAT_LINE                          ;
                                                        56  DD 00489          PUSHL   R6                                          ; 0895
                                     04                 AE  9F 0048B          PUSHAB  SCANP                                       ;
                                                        03  DD 0048E          PUSHL   #3                                          ;
                                0000V  CF              03  FB 00490          CALLS   #3, ANL$OBJECT_ARGUMENT_DSC                 ;
                                       53              50  90 00495          MOVB    R0, FIT_OK                                  ;
                                                       54  D6 00498          INCL    I                                           ; 0893
                                       55              54  D1 0049A 51$:      CMPL    I, MAX_ARGS                                 ;
                                                       09  1B 0049D          BLEQU   50$                                         ;
                                                   FB88  31 0049F 52$:      BRW     1$                                          ; 0678
                                       3B              53  E9 004A2 53$:      BLBC    FIT_OK, 55$                                 ; 0909
                                       50        03    A2  9E 004A5          MOVAB   3(R2), R0                                   ;
                                       54              50  D1 004A9          CMPL    R0, R4                                      ;
                                                       09  1B 004AC          BLEQU   54$                                         ;
                                                       5B  DD 004AE          PUSHL   R11                                         ;
                                0000G  CF              01  FB 004B0          CALLS   #1, ANL$FORMAT_ERROR                        ;
                                                       53  94 004B5          CLRB    FIT_OK                                      ;
                                       26              53  E9 004B7 54$:      BLBC    FIT_OK, 55$                                 ; 0910
                                            0000'      CF  9F 004BA          PUSHAB  ENTITY_FLAGS_DEF                            ; 0911
                                       7E        01    A2  3C 004BE          MOVZWL  1(R2), -(SP)                                ;
)                                          00000000G   8F  DD 004C2          PUSHL   #ANLOBJ$_OBJGSDIDCFLAGS                     ;
                                                       02  DD 004C8          PUSHL   #2                                          ;
                                0000G  CF              04  FB 004CA          CALLS   #4, ANL$FORMAT_FLAGS                        ;
                                            0000'      CF  9F 004CF          PUSHAB  ENTITY_FLAGS_DEF                            ; 0912
                                       50        01    A2  3C 004D3          MOVZWL  1(R2), R0                                   ;
                                    7E                 50  CB 004D7          BICL3   #62, R0, -(SP)                              ;
                                0000G  CF              02  FB 004DB          CALLS   #2, ANL$CHECK_FLAGS                         ;
                             50 01 A2                  01  EF 004E0 55$:      EXTZV   #0, #1, 1(R2), R0                           ; 0918
                                                       50  90 004E6          MOVB    R0, BINARY                                  ;
                                                       3E  E9 004E9          BLBC    R0, 61$                                     ;
                             57 01 A2                  02  EF 004EC          EXTZV   #1, #2, 1(R2), R7                           ; 0919
                                   03                  00  CF 004F2          CASEL   R7, #0, #3                                  ;
                          0023      0023          000E      0008  004F6 56$:      .WORD   57$-56$,-                                   ;
                                                                                        58$-56$,-                                   ;
                                                                                        60$-56$,-                                   ;
                                                                                        60$-56$                                     ;
                                            0000'      CF  9F 004FE 57$:      PUSHAB  P.AAR                                       ; 0920
                                                       04  11 00502          BRB     59$                                         ;
                                            0000'      CF  9F 00504 58$:      PUSHAB  P.AAS                                       ; 0921
                                          00000000G    8F  DD 00508 59$:      PUSHL   #ANLOBJ$_OBJGSDIDCMATCH                     ;
                                                       02  DD 0050E          PUSHL   #2                                          ;
                                                       7E  D4 00510          CLRL    -(SP)                                       ;
                                0000G  CF              04  FB 00512          CALLS   #4, ANL$FORMAT_LINE                         ;
                                                       11  11 00517          BRB     61$                                         ;
                          7E 01 A2                     01  00 EF 00519 60$:      EXTZV   #0, #1, 1(R2), -(SP)                        ; 0922
                                          00000000G    8F  DD 0051F          PUSHL   #ANLOBJ$_OBJBADIDCMATCH                     ;
                                0000G  CF              02  FB 00525          CALLS   #2, ANL$FORMAT_ERROR                        ;
                          7E 01 A2                     03  03 EF 0052A 61$:      EXTZV   #3, #3, 1(R2), -(SP)                        ; 0927
                                                       02  DD 00530          PUSHL   #2                                          ;
                                0000G  CF              02  FB 00532          CALLS   #2, ANL$FORMAT_SEVERITY                     ;
                                       55              53  E9 00537          BLBC    FIT_OK, 64$                                 ; 0931
                                       50        04    A2  9E 0053A          MOVAB   4(R2), R0                                   ;
                                       54              50  D1 0053E          CMPL    R0, R4                                      ;
                                                       09  1B 00541          BLEQU   62$                                         ;
                                                       5B  DD 00543          PUSHL   R11                                         ;
                                0000G  CF              01  FB 00545          CALLS   #1, ANL$FORMAT_ERROR                        ;
                                                       53  94 0054A          CLRB    FIT_OK                                      ;
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                                40              53  E9 0054C 62$:    BLBC    FIT_OK, 64$                             ;
                             04 AE          03  A2  9A 0054F         MOVZBL  3(R2), WORK_DSC                         ;
                             08 AE          04  A2  9E 00554         MOVAB   4(R2), WORK_DSC+4                       ;
                                33              53  E9 00559         BLBC    FIT_OK, 64$                             ;
                                50          04  AE  3C 0055C         MOVZWL  WORK_DSC, R0                            ;
                                50              08  C6 00560         DIVL2   #8, R0                                  ;
                                50          01 A042  9E 00563         MOVAB   1(R0)[R2], R0                           ;
                                54              50  D1 00568         CMPL    R0, R4                                  ;
                                                09  1B 0056B         BLEQU   63$                                     ;
                                                5B  DD 0056D         PUSHL   R11                                     ;
                         0000G  CF              01  FB 0056F         CALLS   #1, ANL$FORMAT_ERROR                    ;
                                                53  94 00574         CLRB    FIT_OK                                  ;
                                16              53  E9 00576 63$:    BLBC    FIT_OK, 64$                             ; 0932
                                            08  AE  DD 00579         PUSHL   WORK_DSC+4                              ; 0933
                                7E          08  AE  3C 0057C         MOVZWL  WORK_DSC, -(SP)                         ;
                                    00000000G   8F  DD 00580         PUSHL   #ANLOBJ$_OBJGSDIDCENT                   ;
                                                02  DD 00586         PUSHL   #2                                      ;
                                                7E  D4 00588         CLRL    -(SP)                                   ;
                         0000G  CF              05  FB 0058A         CALLS   #5, ANL$FORMAT_LINE                     ;
                                50          04  AE  3C 0058F 64$:    MOVZWL  WORK_DSC, R0                            ; 0934
                                6E          08 BE40  9E 00593         MOVAB   @WORK_DSC+4[R0], SCANP                  ;
                                6F              53  E9 00598         BLBC    FIT_OK, 68$                             ; 0939
                     50         6E              01  C1 0059B         ADDL3   #1, SCANP, R0                           ;
                                54              50  D1 0059F         CMPL    R0, R4                                  ;
                                                09  1B 005A2         BLEQU   65$                                     ;
                                                5B  DD 005A4         PUSHL   R11                                     ;
                         0000G  CF              01  FB 005A6         CALLS   #1, ANL$FORMAT_ERROR                    ;
                                                53  94 005AB         CLRB    FIT_OK                                  ;
                                5A              53  E9 005AD 65$:    BLBC    FIT_OK, 68$                             ;
                             04 AE          00  BE  9A 005B0         MOVZBL  @SCANP, WORK_DSC                        ;
                     08  AE     6E              01  C1 005B5         ADDL3   #1, SCANP, WORK_DSC+4                   ;
                                4D              53  E9 005BA         BLBC    FIT_OK, 68$                             ;
                                50          04  AE  3C 005BD         MOVZWL  WORK_DSC, R0                            ;
                                50              08  C6 005C1         DIVL2   #8, R0                                  ;
                                50              6E  C0 005C4         ADDL2   SCANP, R0                               ;
                                                50  D6 005C7         INCL    R0                                      ;
                                54              50  D1 005C9         CMPL    R0, R4                                  ;
                                                09  1B 005CC         BLEQU   66$                                     ;
                                                5B  DD 005CE         PUSHL   R11                                     ;
                         0000G  CF              01  FB 005D0         CALLS   #1, ANL$FORMAT_ERROR                    ;
                                                53  94 005D5         CLRB    FIT_OK                                  ;
                                30              53  E9 005D7 66$:    BLBC    FIT_OK, 68$                             ; 0940
                                17              55  E9 005DA         BLBC    BINARY, 67$                             ; 0941
                                50              6E  D0 005DD         MOVL    SCANP, R0                               ; 0942
                                            01  A0  DD 005E0         PUSHL   1(R0)                                   ;
                                    00000000G   8F  DD 005E3         PUSHL   #ANLOBJ$_OBJGSDIDCVALB                  ;
                                                02  DD 005E9         PUSHL   #2                                      ;
                                                7E  D4 005EB         CLRL    -(SP)                                   ;
                         0000G  CF              04  FB 005ED         CALLS   #4, ANL$FORMAT_LINE                     ;
                                                16  11 005F2         BRB     68$                                     ;
                                            08  AE  DD 005F4 67$:    PUSHL   WORK_DSC+4                              ; 0944
                                7E          08  AE  3C 005F7         MOVZWL  WORK_DSC, -(SP)                         ;
                                    00000000G   8F  DD 005FB         PUSHL   #ANLOBJ$_OBJGSDIDCVALA                  ;
                                                02  DD 00601         PUSHL   #2                                      ;
                                                7E  D4 00603         CLRL    -(SP)                                   ;
                         0000G  CF              05  FB 00605         CALLS   #5, ANL$FORMAT_LINE                     ;
                                50          04  AE  3C 0060A 68$:    MOVZWL  WORK_DSC, R0                            ; 0945
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                                6E       08 BE40   9E 0060E          MOVAB   @WORK_DSC+4[R0], SCANP                ;
                                55             53 E9 00613          BLBC    FIT_OK, 71$                          ; 0949
                          50    6E             01 C1 00616          ADDL3   #1, SCANP, R0                        ;
                                54             50 D1 0061A          CMPL    R0, R4                               ;
                                               09 1B 0061D          BLEQU   69$                                  ;
                                               5B DD 0061F          PUSHL   R11                                  ;
                             0000G CF          01 FB 00621          CALLS   #1, ANL$FORMAT_ERROR                 ;
                                               53 94 00626          CLRB    FIT_OK                               ;
                                40             53 E9 00628 69$:     BLBC    FIT_OK, 71$                          ;
                                04    AE       00    BE 9A 0062B    MOVZBL  @SCANP, WORK_DSC                     ;
                          08    AE             6E    01 C1 00630    ADDL3   #1, SCANP, WORK_DSC+4                ;
                                               33    53 E9 00635    BLBC    FIT_OK, 71$                          ;
                                               50    04 AE 3C 00638 MOVZWL  WORK_DSC, R0                         ;
                                               50    08 C6 0063C    DIVL2   #8, R0                               ;
                                               50    6E C0 0063F    ADDL2   SCANP, R0                            ;
                                               50       D6 00642    INCL    R0                                   ;
                                               54       D1 00644    CMPL    R0, R4                               ;
                                                  09 1B 00647       BLEQU   70$                                  ;
                                                  5B DD 00649       PUSHL   R11                                  ;
                             0000G CF             01 FB 0064B       CALLS   #1, ANL$FORMAT_ERROR                 ;
                                                  53 94 00650       CLRB    FIT_OK                               ;
                                16                53 E9 00652 70$:  BLBC    FIT_OK, 71$                          ; 0950
                                         08    AE DD 00655          PUSHL   WORK_DSC+4                           ; 0951
                                7E       08    AE 3C 00658          MOVZWL  WORK_DSC, -(SP)                      ;
                                   00000000G   8F DD 0065C          PUSHL   #ANLOBJ$_OBJGSDIDCOBJ                ;
                                               02 DD 00662          PUSHL   #2                                   ;
                                               7E D4 00664          CLRL    -(SP)                                ;
                             0000G CF          05 FB 00666          CALLS   #5, ANL$FORMAT_LINE                  ;
                                            00D8 31 0066B 71$:      BRW     78$                                  ; 0955
                                FA             53 E9 0066E 72$:     BLBC    FIT_OK, 71$                          ; 0962
                                50       03    A2 9E 00671          MOVAB   3(R2), R0                            ;
                                54             50 D1 00675          CMPL    R0, R4                               ;
                                               09 1B 00678          BLEQU   73$                                  ;
                                               5B DD 0067A          PUSHL   R11                                  ;
                          0000G CF             01 FB 0067C          CALLS   #1, ANL$FORMAT_ERROR                 ;
                                               53 94 00681          CLRB    FIT_OK                               ;
                                E5             53 E9 00683 73$:     BLBC    FIT_OK, 71$                          ; 0963
                                      0000'    CF D6 00686          INCL    HIGHEST_DEF_ENV                      ; 0964
                                      0000'    CF 9F 0068A          PUSHAB  ENV_FLAGS_DEF                        ; 0965
                                7E       01    A2 3C 0068E          MOVZWL  1(R2), -(SP)                         ;
                                   00000000G   8F DD 00692          PUSHL   #ANLOBJ$_OBJGSDENVFLAGS              ;
                                               02 DD 00698          PUSHL   #2                                   ;
                          0000G CF             04 FB 0069A          CALLS   #4, ANL$FORMAT_FLAGS                 ;
                                      0000'    CF 9F 0069F          PUSHAB  ENV_FLAGS_DEF                        ; 0966
                                7E       01    A2 3C 006A3          MOVZWL  1(R2), -(SP)                         ;
                          0000G CF             02 FB 006A7          CALLS   #2, ANL$CHECK_FLAGS                  ;
                                BC             53 E9 006AC          BLBC    FIT_OK, 71$                          ; 0972
                                50       05    A2 9E 006AF          MOVAB   5(R2), R0                            ;
                                54             50 D1 006B3          CMPL    R0, R4                               ;
                                               09 1B 006B6          BLEQU   74$                                  ;
                                               5B DD 006B8          PUSHL   R11                                  ;
                          0000G CF             01 FB 006BA          CALLS   #1, ANL$FORMAT_ERROR                 ;
                                               53 94 006BF          CLRB    FIT_OK                               ;
                                A7             53 E9 006C1 74$:     BLBC    FIT_OK, 71$                          ; 0973
                                      0000'    CF DD 006C4          PUSHL   HIGHEST_DEF_ENV                      ; 0974
                                7E       03    A2 3C 006C8          MOVZWL  3(R2), -(SP)                         ;
                                   00000000G   8F DD 006CC          PUSHL   #ANLOBJ$_OBJGSDENVPAR                ;
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                                 02  DD 006D2          PUSHL   #2                                                    ;
                                 7E  D4 006D4          CLRL    -(SP)                                                 ;
                0000G  CF        05  FB 006D6          CALLS   #5, ANL$FORMAT_LINE                                   ;
                       7E   03   A2  3C 006DB          MOVZWL  3(R2), -(SP)                                          ; 0975
                0000V  CF        01  FB 006DF          CALLS   #1, ANL$OBJECT_ENV_REF                                ;
                       5F        53  E9 006E4          BLBC    FIT_OK, 78$                                           ; 0980
                       50   06   A2  9E 006E7          MOVAB   6(R2), R0                                             ;
                       54        50  D1 006EB          CMPL    R0, R4                                                ;
                                 09  1B 006EE          BLEQU   75$                                                   ;
                                 5B  DD 006F0          PUSHL   R11                                                   ;
                0000G  CF        01  FB 006F2          CALLS   #1, ANL$FORMAT_ERROR                                  ;
                                 53  94 006F7          CLRB    FIT_OK                                                ;
                       4A        53  E9 006F9 75$:     BLBC    FIT_OK, 78$                                           ;
                  04   AE   05   A2  9A 006FC          MOVZBL  5(R2), WORK_DSC                                       ;
                  08   AE   06   A2  9E 00701          MOVAB   6(R2), WORK_DSC+4                                     ;
                       3D        53  E9 00706          BLBC    FIT_OK, 78$                                           ;
                       50   04   AE  3C 00709          MOVZWL  WORK_DSC, R0                                          ;
                       50        08  C6 0070D          DIVL2   #8, R0                                                ;
                       50   01 A042  9E 00710          MOVAB   1(R0)[R2], R0                                         ;
                       54        50  D1 00715          CMPL    R0, R4                                                ;
                                 09  1B 00718          BLEQU   77$                                                   ;
                                 5B  DD 0071A 76$:     PUSHL   R11                                                   ;
                0000G  CF        01  FB 0071C          CALLS   #1, ANL$FORMAT_ERROR                                  ;
                                 53  94 00721          CLRB    FIT_OK                                                ;
                       20        53  E9 00723 77$:     BLBC    FIT_OK, 78$                                           ; 0981
                            08   AE  DD 00726          PUSHL   WORK_DSC+4                                            ; 0982
                       7E   08   AE  3C 00729          MOVZWL  WORK_DSC, -(SP)                                       ;
                          00000000G  8F  DD 0072D       PUSHL   #ANLOBJ$_OBJSYMBOL                                    ;
                                 02  DD 00733          PUSHL   #2                                                    ;
                                 7E  D4 00735          CLRL    -(SP)                                                 ;
                0000G  CF        05  FB 00737          CALLS   #5, ANL$FORMAT_LINE                                   ;
                                 1F  DD 0073C          PUSHL   #31                                                   ; 0983
                            08   AE  9F 0073E          PUSHAB  WORK_DSC                                              ;
                0000G  CF        02  FB 00741          CALLS   #2, ANL$CHECK_SYMBOL                                  ;
                       50   04   AE  3C 00746 78$:     MOVZWL  WORK_DSC, R0                                          ; 0988
                       6E   08 BE40  9E 0074A          MOVAB   @WORK_DSC+4[R0], SCANP                                ;
                            F8D8  31 0074F          BRW     1$                                                    ; 0657
                                  04 00752          RET                                                           ; 0997

; Routine Size:  1875 bytes,    Routine Base:  $CODE$ + 0000
```

```
;  572          0998  1 %sbttl 'ANL$OBJECT_ARGUMENT_DSC - Analyze Argument Descriptors'
;  573          0999  1 !++
;  574          1000  1 ! Functional Description:
;  575          1001  1 !       This routine analyzes argument descriptors, which appear in GSD
;  576          1002  1 !       records and in TIR commands.
;  577          1003  1 !
;  578          1004  1 ! Formal Parameters:
;  579          1005  1 !       indent_level    Level at which to indent lines.
;  580          1006  1 !       scanp_address   Address of argument descriptor block pointer.  We
;  581          1007  1 !                       update it to point past the block.
;  582          1008  1 !       the_record      Address of descriptor of record containing block.
;  583          1009  1 !
;  584          1010  1 ! Implicit Inputs:
;  585          1011  1 !       global data
;  586          1012  1 !
;  587          1013  1 ! Implicit Outputs:
;  588          1014  1 !       global data
;  589          1015  1 !
;  590          1016  1 ! Returned Value:
;  591          1017  1 !       True if descriptor fit in record; false otherwise.
;  592          1018  1 !
;  593          1019  1 ! Side Effects:
;  594          1020  1 !
;  595          1021  1 !--
;  596          1022  1
;  597          1023  1
;  598          1024  2 global routine anl$object_argument_dsc(indent_level,scanp_address,the_record) = begin
;  599          1025  2
;  600          1026  2 bind
;  601          1027  2         scanp = .scanp_address: ref block[,byte],
;  602          1028  2         record_dsc = .the_record: descriptor;
;  603          1029  2
;  604          1030  2 own
;  605          1031  2         passing_mechanism_table: vector[4,long] initial(
;  606          1032  2                                 uplit byte(%ascic 'UNKNOWN'),
;  607          1033  2                                 uplit byte(%ascic 'VALUE'),
;  608          1034  2                                 uplit byte(%ascic 'REF'),
;  609          1035  2                                 uplit byte(%ascic 'DESC'));
;  610          1036  2
;  611          1037  2 local
;  612          1038  2         fit_ok: byte,
;  613          1039  2         work_dsc: descriptor;
;  614          1040  2
;  615          1041  2
;  616          1042  2 ! The argument descriptor begins with a validation control byte containing
;  617          1043  2 ! the passing mechanism.  Print it and check it.
;  618          1044  2
;  619          1045  2 fit_ok = true;
;  620          1046  2
;  621          1047  2 ensure_field_fit(0,0,8,0,record_dsc);
;  622          1048  3 if .fit_ok then (
;  623          1049  3         anl$format_line(0,.indent_level,anlobj$_objfadpassmech,.passing_mechanism_table[.scanp[0,0,2,0]]);
;  624          1050  3         if .scanp[0,2,6,0] nequ 0 then
;  625          1051  3                 anl$format_error(anlobj$_objfadbadavc);
;  626          1052  3         increment (scanp);
;  627          1053  2 );
;  628          1054  2
```

```
2 ensure_ascic_fit(0,0,8,0,record_dsc,work_dsc);
3 if .fit_ok then (
          if .work_dsc[len] nequ 0 then
3                 anl$format_error(anlobj$_objfadbadrbc);
3         scanp = .work_dsc[ptr] + .work_dsc[len];
2 );
2
2 return .fit_ok;
2
1 end;


                                                      .PSECT  $PLIT$,NOWRT,NOEXE,2

        4E 57 4F 4E 4B 4E 55 07  000BC P.AAT:   .ASCII  <7>\UNKNOWN\                         ;
              45 55 4C 41 56 05  000C4 P.AAU:   .ASCII  <5>\VALUE\                           ;
                    46 45 52 03  000CA P.AAV:   .ASCII  <3>\REF\                             ;
                 43 53 45 44 04  000CE P.AAW:   .ASCII  <4>\DESC\                            ;

                                                .PSECT  $OWN$,NOEXE,2

00000000' 00000000' 00000000' 00000000' 000A0 PASSING_MECHANISM_TABLE:
                                                .ADDRESS P.AAT, P.AAU, P.AAV, P.AAW          ;


                                                .PSECT  $CODE$,NOWRT,2

                               00FC 00000       .ENTRY  ANL$OBJECT_ARGUMENT_DSC, Save R2,R3,R4,R5,- ; 1024
                                                        R6,R7                                ;
                57      0000G  CF   9E 00002    MOVAB   ANL$FORMAT_ERROR, R7                 ;
                56  00000000G  8F   D0 00007    MOVL    #ANLOBJ$_FIELDFIT, R6                ;
                5E             08   C2 0000E    SUBL2   #8, SP                               ;
                53         08  AC   D0 00011    MOVL    SCANP_ADDRESS, R3                    ; 1027
                52         0C  AC   D0 00015    MOVL    THE_RECORD, R2                       ; 1028
                55             01   90 00019    MOVB    #1, FIT_OK                           ; 1045
                6E             55   E9 0001C    BLBC    FIT_OK, 4$                           ; 1047
      51        63             01   C1 0001F    ADDL3   #1, (R3), R1                         ;
                50             62   3C 00023    MOVZWL  (R2), R0                             ;
                50         04  A2   C0 00026    ADDL2   4(R2), R0                            ;
                50             51   D1 0002A    CMPL    R1, R0                               ;
                07             1B   0002D       BLEQU   1$                                   ;
                56             DD   0002F       PUSHL   R6                                   ;
                67             01   FB 00031    CALLS   #1, ANL$FORMAT_ERROR                 ;
                               55   94 00034    CLRB    FIT_OK                               ;
                77             55   E9 00036 1$: BLBC   FIT_OK, 5$                           ; 1048
                54             63   D0 00039    MOVL    (R3), R4                             ; 1049
50    64        02             00   EF 0003C    EXTZV   #0, #2, (R4), R0                     ;
                    0000'CF40       DD 00041    PUSHL   PASSING_MECHANISM_TABLE[R0]          ;
                00000000G  8F       DD 00046    PUSHL   #ANLOBJ$_OBJFADPASSMECH              ;
                       04  AC       DD 0004C    PUSHL   INDENT_LEVEL                         ;
                           7E       D4 0004F    CLRL    -(SP)                                ;
          0000G  CF        04       FB 00051    CALLS   #4, ANL$FORMAT_LINE                  ;
             FC  8F        64       93 00056    BITB    (R4), #252                           ; 1050
                           09       13 0005A    BEQL    2$                                   ;
                00000000G  8F       DD 0005C    PUSHL   #ANLOBJ$_OBJFADBADAVC                ; 1051
```

```
                                67              01 FB 00062          CALLS   #1, ANL$FORMAT_ERROR
                                                63 D6 00065 2$:      INCL    (R3)                        ; 1052
                                5E              55 E9 00067          BLBC    FIT_OK, 7$                  ; 1055
                          51    63              01 C1 0006A          ADDL3   #1, (R3), R1
                                50              62 3C 0006E          MOVZWL  (R2), R0
                                50        04    A2 C0 00071          ADDL2   4(R2), R0
                                50              51 D1 00075          CMPL    R1, R0
                                                07 1B 00078          BLEQU   3$
                                                56 DD 0007A          PUSHL   R6
                                67              01 FB 0007C          CALLS   #1, ANL$FORMAT_ERROR
                                                55 94 0007F          CLRB    FIT_OK
                                44              55 E9 00081 3$:      BLBC    FIT_OK, 7$
                                6E        00    B3 9A 00084          MOVZBL  @0(R3), WORK_DSC
                          04    AE              01 C1 00088          ADDL3   #1, (R3), WORK_DSC+4
                                38              55 E9 0008D 4$:      BLBC    FIT_OK, 7$
                                50              6E 3C 00090          MOVZWL  WORK_DSC, R0
                                50              08 C6 00093          DIVL2   #8, R0
                                50              63 C0 00096          ADDL2   (R3), R0
                                51        01    A0 9E 00099          MOVAB   1(R0), R1
                                50              62 3C 0009D          MOVZWL  (R2), R0
                                50        04    A2 C0 000A0          ADDL2   4(R2), R0
                                50              51 D1 000A4          CMPL    R1, R0
                                                07 1B 000A7          BLEQU   5$
                                                56 DD 000A9          PUSHL   R6
                                67              01 FB 000AB          CALLS   #1, ANL$FORMAT_ERROR
                                                55 94 000AE          CLRB    FIT_OK
                                15              55 E9 000B0 5$:      BLBC    FIT_OK, 7$                  ; 1056
                                                6E B5 000B3          TSTW    WORK_DSC                    ; 1057
                                                09 13 000B5          BEQL    6$
                          000000000G            8F DD 000B7          PUSHL   #ANLOBJ$_OBJFADBADRBC       ; 1058
                                67              01 FB 000BD          CALLS   #1, ANL$FORMAT_ERROR
                                50              6E 3C 000C0 6$:      MOVZWL  WORK_DSC, R0                ; 1059
                                63        04 BE40 9E 000C3           MOVAB   @WORK_DSC+4[R0], (R3)
                                50              55 9A 000C8 7$:      MOVZBL  FIT_OK, R0                  ; 1062
                                                04 000CB             RET                                 ; 1064

; Routine Size:  204 bytes,    Routine Base:  $CODE$ + 0753
```

```
;  640          1065  1 %sbttl 'ANL$OBJECT_PSECT_REF - Mark Psect Reference'
;  641          1066  1 !++
;  642          1067  1 ! Functional Description:
;  643          1068  1 !       This routine is called to mark a psect reference in the psect
;  644          1069  1 !       reference bitvector.  By remembering every psect that is referenced
;  645          1070  1 !       we can check whether undefined psects are ever referenced.
;  646          1071  1 !
;  647          1072  1 ! Formal Parameters:
;  648          1073  1 !       psect_number    The number of the psect that was referenced.
;  649          1074  1 !
;  650          1075  1 ! Implicit Inputs:
;  651          1076  1 !       global data
;  652          1077  1 !
;  653          1078  1 ! Implicit Outputs:
;  654          1079  1 !       global data
;  655          1080  1 !
;  656          1081  1 ! Returned Value:
;  657          1082  1 !       none
;  658          1083  1 !
;  659          1084  1 ! Side Effects:
;  660          1085  1 !
;  661          1086  1 !--
;  662          1087  1
;  663          1088  1
;  664          1089  2 global routine anl$object_psect_ref(psect_number): novalue = begin
;  665          1090  2
;  666          1091  2 local
;  667          1092  2         status: long;
;  668          1093  2
;  669          1094  2
;  670          1095  2 ! We begin by checking to see whether or not a psect reference bitvector
;  671          1096  2 ! has been allocated.  If not, we allocate it and clear it.
;  672          1097  2
;  673          1098  3 if .psect_ref_bits eqla 0 then (
;  674          1099  3         status = lib$get_vm(%ref(65536/8),psect_ref_bits);
;  675          1100  3         check (.status,.status);
;  676          1101  3         ch$fill(%x'00', 65536/8,.psect_ref_bits);
;  677          1102  2 );
;  678          1103  2
;  679          1104  2 ! Now we can set the psect bit and remember the highest referenced psect.
;  680          1105  2
;  681          1106  2 psect_ref_bits[.psect_number] = true;
;  682          1107  2 highest_ref_psect = max(.psect_number,.highest_ref_psect);
;  683          1108  2
;  684          1109  2 return;
;  685          1110  2
;  686          1111  1 end;


                                                007C 00000          .ENTRY  ANL$OBJECT_PSECT_REF, Save R2,R3,R4,R5,R6   ; 1089
                                    56  0000'   CF  9E 00002        MOVAB   PSECT_REF_BITS, R6                          ;
                                    5E          04  C2 00007        SUBL2   #4, SP                                      ;
                                                66  D5 0000A        TSTL    PSECT_REF_BITS                              ; 1098
                                                27  12 0000C        BNEQ    2$                                          ;
```

```
                                          56  DD 0000E        PUSHL   R6                                             ; 1099
                     04   AE       2000   8F  3C 00010        MOVZWL  #8192, 4(SP)                                   ;
                                     04   AE  9F 00016        PUSHAB  4(SP)                                          ;
              00000000G   00              02  FB 00019        CALLS   #2, LIB$GET_VM                                 ;
                          09              50  E8 00020        BLBS    STATUS, 1$                                     ; 1100
                                          50  DD 00023        PUSHL   STATUS                                         ;
              00000000G   00              01  FB 00025        CALLS   #1, LIB$SIGNAL                                 ;
   2000   8F          00  6E              00  2C 0002C 1$:    MOVC5   #0, (SP), #0, #8192, @PSECT_REF_BITS           ; 1101
                                     00   B6     00033                                                               ;
                00    00  B6         04   AC  E2 00035 2$:    BBSS    PSECT_NUMBER, @PSECT_REF_BITS, 3$              ; 1106
                          50         04   AC  D0 0003B 3$:    MOVL    PSECT_NUMBER, R0                               ; 1107
                     FC   A6              50  D1 0003F        CMPL    R0, HIGHEST_REF_PSECT                          ;
                                          04  18 00043        BGEQ    4$                                             ;
                          50         FC   A6  D0 00045        MOVL    HIGHEST_REF_PSECT, R0                          ;
                     FC   A6              50  D0 00049 4$:    MOVL    R0, HIGHEST_REF_PSECT                          ;
                                             04 0004D         RET                                                    ; 1111

; Routine Size:  78 bytes,    Routine Base:  $CODE$ + 081F
```

```
;  688          1112  1 %sbttl 'ANL$OBJECT_PSECT_CHECK - Check Psect References'
;  689          1113  1 !++
;  690          1114  1 ! Functional Description:
;  691          1115  1 !       This routine is called at the end of an object module to check the
;  692          1116  1 !       psect references.  We need to make sure that no undefined psects
;  693          1117  1 !       were referenced.
;  694          1118  1 !
;  695          1119  1 ! Formal Parameters:
;  696          1120  1 !       none
;  697          1121  1 !
;  698          1122  1 ! Implicit Inputs:
;  699          1123  1 !       global data
;  700          1124  1 !
;  701          1125  1 ! Implicit Outputs:
;  702          1126  1 !       global data
;  703          1127  1 !
;  704          1128  1 ! Returned Value:
;  705          1129  1 !       none
;  706          1130  1 !
;  707          1131  1 ! Side Effects:
;  708          1132  1 !
;  709          1133  1 !--
;  710          1134  1
;  711          1135  1
;  712          1136  2 global routine anl$object_psect_check: novalue = begin
;  713          1137  2
;  714          1138  2 local
;  715          1139  2         status: long;
;  716          1140  2
;  717          1141  2
;  718          1142  2 ! First let's make sure that at least one psect was defined.  An object
;  719          1143  2 ! module must define at least one.
;  720          1144  2
;  721          1145  2 if .highest_def_psect lss 0 then
;  722          1146  2         anl$format_error(anlobj$_objnopsc);
;  723          1147  2
;  724          1148  2 ! OK, now we are going to make sure that all referenced psects were defined.
;  725          1149  2 ! We do this by looping through any psect referenced bits whose number is
;  726          1150  2 ! higher than the highest defined psect.
;  727          1151  2
;  728          1152  3 if .highest_ref_psect gtr .highest_def_psect then (
;  729          1153  3         anl$format_error(anlobj$_objundefpsc);
;  730          1154  4         incru i from .highest_def_psect+1 to .highest_ref_psect do (
;  731          1155  4                 if .psect_ref_bits[.i] then
;  732          1156  4                         anl$format_error(anlobj$_objbadnum,.i);
;  733          1157  3         );
;  734          1158  2 );
;  735          1159  2
;  736          1160  2 ! Now we can reset everything for the next module.
;  737          1161  2
;  738          1162  2 highest_def_psect = highest_ref_psect = -1;
;  739          1163  3 if .psect_ref_bits nega 0 then (
;  740          1164  3         status = lib$free_vm(%ref(65536/8),psect_ref_bits);
;  741          1165  3         check (.status,.status);
;  742          1166  3         psect_ref_bits = 0;
;  743          1167  2 );
;  744          1168  2
```

```
;  745          1169  2 return;
;  746          1170  2
;  747          1171  1 end;


                                    003C 00000          .ENTRY  ANL$OBJECT_PSECT_CHECK, Save R2,R3,R4,R5    ; 1136
                              55  0000G CF  9E 00002     MOVAB   ANL$FORMAT_ERROR, R5                        ;
                              54  0000' CF  9E 00007     MOVAB   HIGHEST_DEF_PSECT, R4                       ;
                              5E        04  C2 0000C     SUBL2   #4, SP                                      ;
                                        64  D5 0000F     TSTL    HIGHEST_DEF_PSECT                           ; 1145
                                        09  18 00011     BGEQ    1$                                          ;
                          00000000G     8F  DD 00013     PUSHL   #ANLOBJ$_OBJNOPSC                           ; 1146
                              65        01  FB 00019     CALLS   #1, ANL$FORMAT_ERROR                        ;
                              64    04  A4  D1 0001C 1$:  CMPL    HIGHEST_REF_PSECT, HIGHEST_DEF_PSECT        ; 1152
                                        25  15 00020     BLEQ    4$                                          ;
                          00000000G     8F  DD 00022     PUSHL   #ANLOBJ$_OBJUNDEFPSC                        ; 1153
                              65        01  FB 00028     CALLS   #1, ANL$FORMAT_ERROR                        ;
                              52        64  7D 0002B     MOVQ    HIGHEST_DEF_PSECT, I                        ; 1154
                                        10  11 0002E     BRB     3$                                          ;
                    0B    08  B4        52  E1 00030 2$:  BBC     I, @PSECT_REF_BITS, 3$                      ; 1155
                                        52  DD 00035     PUSHL   I                                           ; 1156
                          00000000G     8F  DD 00037     PUSHL   #ANLOBJ$_OBJBADNUM                          ;
                              65        02  FB 0003D     CALLS   #2, ANL$FORMAT_ERROR                        ;
                                        52  D6 00040 3$:  INCL    I                                           ; 1154
                              53        52  D1 00042     CMPL    I, R3                                       ;
                                        E9  1B 00045     BLEQU   2$                                          ;
                        04    A4        01  CE 00047 4$:  MNEGL   #1, HIGHEST_REF_PSECT                      ; 1162
                              64        01  CE 0004B     MNEGL   #1, HIGHEST_DEF_PSECT                       ;
                                  08    A4  D5 0004E     TSTL    PSECT_REF_BITS                              ; 1163
                                        22  13 00051     BEQL    6$                                          ;
                                  08    A4  9F 00053     PUSHAB  PSECT_REF_BITS                              ; 1164
                                  04    AE  2000 8F  3C 00056     MOVZWL  #8192, 4(SP)                        ;
                                  04    AE  9F 0005C     PUSHAB  4(SP)                                       ;
                          00000000G     00  02 FB 0005F     CALLS   #2, LIB$FREE_VM                         ;
                                        09  50 E8 00066     BLBS    STATUS, 5$                                  ; 1165
                                            50 DD 00069     PUSHL   STATUS                                  ;
                          00000000G     00  01 FB 0006B     CALLS   #1, LIB$SIGNAL                          ;
                                  08    A4  D4 00072 5$:  CLRL    PSECT_REF_BITS                              ; 1166
                                            04 00075 6$:  RET                                               ; 1171

; Routine Size:  118 bytes,    Routine Base:  $CODE$ + 086D
```

```
;  749          1172  1 %sbttl 'ANL$OBJECT_ENV_REF - Mark Environment Reference'
;  750          1173  1 !++
;  751          1174  1 ! Functional Description:
;  752          1175  1 !       This routine is called to mark a environment reference in the environ-
;  753          1176  1 !       ment reference bitvector.  By remembering every environment that is
;  754          1177  1 !       referenced we can check whether undefined environments are ever
;  755          1178  1 !       referenced.
;  756          1179  1 !
;  757          1180  1 ! Formal Parameters:
;  758          1181  1 !       env_number      The number of the environment that was referenced.
;  759          1182  1 !
;  760          1183  1 ! Implicit Inputs:
;  761          1184  1 !       global data
;  762          1185  1 !
;  763          1186  1 ! Implicit Outputs:
;  764          1187  1 !       global data
;  765          1188  1 !
;  766          1189  1 ! Returned Value:
;  767          1190  1 !       none
;  768          1191  1 !
;  769          1192  1 ! Side Effects:
;  770          1193  1 !
;  771          1194  1 !--
;  772          1195  1
;  773          1196  1
;  774          1197  2 global routine anl$object_env_ref(env_number): novalue = begin
;  775          1198  2
;  776          1199  2 local
;  777          1200  2         status: long;
;  778          1201  2
;  779          1202  2
;  780          1203  2 ! We begin by checking to see whether or not an environment reference bitvector
;  781          1204  2 ! has been allocated.  If not, we allocate it and clear it.
;  782          1205  2
;  783          1206  3 if .env_ref_bits eqla 0 then (
;  784          1207  3         status = lib$get_vm(%ref(65536/8),env_ref_bits);
;  785          1208  3         check (.status,.status);
;  786          1209  3         ch$fill(%x'00', 65536/8,.env_ref_bits);
;  787          1210  2 );
;  788          1211  2
;  789          1212  2 ! Now we can set the environment bit and remember the highest referenced one.
;  790          1213  2
;  791          1214  2 env_ref_bits[.env_number] = true;
;  792          1215  2 highest_ref_env = max(.env_number,.highest_ref_env);
;  793          1216  2
;  794          1217  2 return;
;  795          1218  2
;  796          1219  1 end;


                                 007C 00000          .ENTRY  ANL$OBJECT_ENV_REF, Save R2,R3,R4,R5,R6     ; 1197
                     56  0000'   CF  9E 00002          MOVAB   ENV_REF_BITS, R6                            ;
                     5E          04  C2 00007          SUBL2   #4, SP                                      ;
                                 66  D5 0000A          TSTL    ENV_REF_BITS                                ; 1206
```

```
                                                  27  12 0000C          BNEQ    2$                                          ;
                                                  56  DD 0000E          PUSHL   R6                                          ; 1207
                                04    AE    2000  8F  3C 00010          MOVZWL  #8192, 4(SP)                                ;
                                      04    AE    9F  9F 00016          PUSHAB  4(SP)                                       ;
                           00000000G  00          02  FB 00019          CALLS   #2, LIB$GET_VM                              ;
                                      09          50  E8 00020          BLBS    STATUS, 1$                                  ; 1208
                                                  50  DD 00023          PUSHL   STATUS                                      ;
                           00000000G  00          01  FB 00025          CALLS   #1, LIB$SIGNAL                              ;
    2000    8F          00            6E          00  2C 0002C 1$:      MOVC5   #0, (SP), #0, #8192, @ENV_REF_BITS          ; 1209
                                            00    B6      00033                                                             ;
                                00    00    B6    04  AC  E2 00035 2$:  BBSS    ENV_NUMBER, @ENV_REF_BITS, 3$               ; 1214
                                            50    04  AC  D0 0003B 3$:  MOVL    ENV_NUMBER, R0                              ; 1215
                                      FC    A6          50  D1 0003F      CMPL    R0, HIGHEST_REF_ENV                         ;
                                                        04  18 00043      BGEQ    4$                                          ;
                                            50    FC    A6  D0 00045      MOVL    HIGHEST_REF_ENV, R0                         ;
                                      FC    A6          50  D0 00049 4$:  MOVL    R0, HIGHEST_REF_ENV                         ;
                                                        04  0004D         RET                                                 ; 1219

; Routine Size:  78 bytes,    Routine Base:  $CODE$ + 08E3
```

```
1 %sbttl 'ANL$OBJECT_ENV_CHECK - Check Environment References'
1 !++
1 ! Functional Description:
1 !       This routine is called at the end of an object module to check the
1 !       environment references.  We need to make sure that no undefined
1 !       environments were referenced.
1 !
1 ! Formal Parameters:
1 !       none
1 !
1 ! Implicit Inputs:
1 !       global data
1 !
1 ! Implicit Outputs:
1 !       global data
1 !
1 ! Returned Value:
1 !       none
1 !
1 ! Side Effects:
1 !
1 !--
1
1
2 global routine anl$object_env_check: novalue = begin
2
2 local
2       status: long;
2
2
2 ! We are going to make sure that all referenced environments were defined.
2 ! We do this by looping through any environment reference bits whose number is
2 ! higher than the highest defined environment.
2
3 if .highest_ref_env gtr .highest_def_env then (
3       anl$format_error(anlobj$_objundefenv);
4       incru i from .highest_def_env+1 to .highest_ref_env do (
4               if .env_ref_bits[.i] then
4                       anl$format_error(anlobj$_objbadnum,.i);
3       );
2 );
2
2 ! Now we can reset everything for the next module.
2
2 highest_def_env = highest_ref_env = -1;
3 if .env_ref_bits neqa 0 then (
3       status = lib$free_vm(%ref(65536/8),env_ref_bits);
3       check (.status,.status);
3       env_ref_bits = 0;
2 );
2
2 return;
2
1 end;
```

```
                                                001C 00000          .ENTRY  ANL$OBJECT_ENV_CHECK, Save R2,R3,R4                 ; 1244
                                    54      0000' CF   9E 00002     MOVAB   ENV_REF_BITS, R4                                    ;
                                    5E            04   C2 00007     SUBL2   #4, SP                                              ;
                                F8  A4        FC  A4   D1 0000A     CMPL    HIGHEST_REF_ENV, HIGHEST_DEF_ENV                    ; 1254
                                                  2A   15 0000F     BLEQ    3$                                                  ;
                                    00000000G     8F   DD 00011     PUSHL   #ANLOBJ$_OBJUNDEFENV                                ; 1255
                            0000G   CF            01   FB 00017     CALLS   #1, ANL$FORMAT_ERROR                                ;
                                    52        F8  A4   7D 0001C     MOVQ    HIGHEST_DEF_ENV, I                                  ; 1256
                                                  12   11 00020     BRB     2$                                                  ;
                        0D      00  B4            52   E1 00022 1$: BBC     I, @ENV_REF_BITS, 2$                                ; 1257
                                                  52   DD 00027     PUSHL   I                                                   ; 1258
                                    00000000G     8F   DD 00029     PUSHL   #ANLOBJ$_OBJBADNUM                                  ;
                            0000G   CF            02   FB 0002F     CALLS   #2, ANL$FORMAT_ERROR                                ;
                                                  52   D6 00034 2$: INCL    I                                                   ; 1256
                                    53            52   D1 00036     CMPL    I, R3                                               ;
                                                  E7   1B 00039     BLEQU   1$                                                  ;
                                FC  A4            01   CE 0003B 3$: MNEGL   #1, HIGHEST_REF_ENV                                ; 1264
                                F8  A4            01   CE 0003F     MNEGL   #1, HIGHEST_DEF_ENV                                 ;
                                                  64   D5 00043     TSTL    ENV_REF_BITS                                        ; 1265
                                                  20   13 00045     BEQL    5$                                                  ;
                                                  54   DD 00047     PUSHL   R4                                                  ; 1266
                                04  AE      2000  8F   3C 00049     MOVZWL  #8192, 4(SP)                                        ;
                                          04      AE   9F 0004F     PUSHAB  4(SP)                                               ;
                        00000000G   00            02   FB 00052     CALLS   #2, LIB$FREE_VM                                     ;
                                    09            50   E8 00059     BLBS    STATUS, 4$                                          ; 1267
                                                  50   DD 0005C     PUSHL   STATUS                                              ;
                        00000000G   00            01   FB 0005E     CALLS   #1, LIB$SIGNAL                                      ;
                                                  64   D4 00065 4$: CLRL    ENV_REF_BITS                                        ; 1268
                                                       04 00067 5$: RET                                                         ; 1273

; Routine Size:  104 bytes,    Routine Base:  $CODE$ + 0931

;  852          1274  1
;  853          1275  0 end eludom



                                                                    .EXTRN  LIB$SIGNAL


;                                   PSECT SUMMARY
;
;      Name                     Bytes                          Attributes
;
;  $OWN$                         176  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $PLIT$                        211  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                       2457  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)


;                                Library Statistics
;
;                                --------- Symbols ---------      Pages       Processing
```

```
;       File                                    Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]STARLET.L32;1             9776        46         0         581       00:01.0
```

```
;                                       COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:OBJGSD/OBJ=OBJ$:OBJGSD MSRC$:OBJGSD/UPDATE=(ENH$:OBJGSD)

; Size:         2457 code + 387 data bytes
; Run Time:       00:42.8
; Elapsed Time:   02:26.0
; Lines/CPU Min:   1789
; Lexemes/CPU-Min: 16888
; Memory Used:  666 pages
; Compilation Complete
```