```
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
```

FILEID**LIBICHAR

```
LL              IIIIII    BBBBBBBB      IIIIII      CCCCCCCC  HH      HH    AAAAAA    RRRRRRRR
LL              IIIIII    BBBBBBBB      IIIIII      CCCCCCCC  HH      HH    AAAAAA    RRRRRRRR
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR      RR
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR      RR
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR      RR
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR      RR
LL                II      BBBBBBBB        II      CC          HHHHHHHHHH  AA      AA  RRRRRRRR
LL                II      BBBBBBBB        II      CC          HHHHHHHHHH  AA      AA  RRRRRRRR
LL                II      BB      BB      II      CC          HH      HH  AAAAAAAAAA  RR  RR
LL                II      BB      BB      II      CC          HH      HH  AAAAAAAAAA  RR  RR
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR    RR        ....
LL                II      BB      BB      II      CC          HH      HH  AA      AA  RR    RR        ....
LLLLLLLLLL      IIIIII    BBBBBBBB      IIIIII      CCCCCCCC  HH      HH  AA      AA  RR      RR      ....
LLLLLLLLLL      IIIIII    BBBBBBBB      IIIIII      CCCCCCCC  HH      HH  AA      AA  RR      RR      ....

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

Table of contents

```
0000     1          .TITLE  LIB$ICHAR       ; Return first char of string as value
0000     2          .IDENT  /1-006/         ; File: LIBICHAR.MAR Edit:RKR1006
0000     3
0000     4 ;
0000     5 ;*****************************************************************************
0000     6 ;*                                                                           *
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0000    24 ;*                                                                           *
0000    25 ;*                                                                           *
0000    26 ;*****************************************************************************
0000    27 ;
0000    28 ;
0000    29 ; FACILITY: General Utility Library
0000    30 ;++
0000    31 ; ABSTRACT:
0000    32 ;
0000    33 ;       Return first character of a string as INTEGER*4 ASCII value.
0000    34 ;
0000    35 ;--
0000    36 ;
0000    37 ; VERSION: 1-001
0000    38 ;
0000    39 ; HISTORY:
0000    40 ;
0000    41 ; AUTHOR:
0000    42 ;       Thomas N. Hastings, 6-Aug-77: Version 0
0000    43 ;
0000    44 ; MODIFIED BY:
0000    45 ;
0000    46 ;
0000    47 ;
```

```
                        49          .SBTTL  HISTORY         ; Detailed Current Edit History
                        50
                        51
                        52 ; Edit History for Version 0
                        53 ;
                        54
                        55 ; 1-001 - Update copyright notice and version number.  The last edit
                        56 ;         number on version 0 was 3.  JBS 16-NOV-78
                        57 ; 1-002 - Add "_" to PSECT directive.  JBS 21-DEC-78
                        58 ; 1-003 - Add support for 0 length dynamic strings.  RW  16-AUG-79
                        59 ; 1-004 - Enhance to allow recognition of additional classes of
                        60 ;         string descriptors by using LIB$ANALYZE_SDESC_R3 to extract
                        61 ;         length and address of 1st byte of data from descritpor.
                        62 ;         RKR 20-MAY-1981
                        63 ; 1-005 - Add special-case code to process string descriptors that
                        64 ;         "read" like fix string descriptors.  RKR 7-OCT-1981.
                        65 ; 1-006 - Redirect jsb's from LIB$ANALYZE_SDESC_R3 to
                        66 ;         LIB$ANALYZE_SDESC_R2.  Drop R3 from entry mask.
                        67 ;         RKR 18-NOV-1981.
```

```
                        69          .SBTTL  DECLARATIONS
                        70
                        71 ;
                        72 ; INCLUDE FILES: NONE
                        73 ;
                        74
                        75 ;
                        76 ; EXTERNAL SYMBOLS:
                        77 ;
                        78          .DSABL  GBL                     ; no default externals
                        79          .EXTRN  LIB$ANALYZE_SDESC_R2    ; extract length and address
                        80
                        81 ;
                        82 ; MACROS:
                        83 ;
                        84          $DSCDEF                 ; for fields within a descriptor
                        85
                        86 ;
                        87 ; PSECT DECLARATIONS:
                        88 ;
                        89          .PSECT  _LIB$CODE PIC,SHR,LONG,EXE,NOWRT
                        90 ;
                        91 ; EQUATED SYMBOLS: NONE
                        92 ;
                        93
                        94 ;
                        95 ; OWN STORAGE: NONE
                        96 ;
                        97
```

```
                                        99          .SBTTL  LIB$ICHAR - Return first char of string as INTEGER*4 value
                                       100
                                       101 ;++
                                       102 ; FUNCTIONAL DESCRIPTION:
                                       103 ;
                                       104 ;       Return first character of string as INTEGER*4 8-bit ASCII value.
                                       105 ;       If the string is a null string, ie. the length is 0, return a
                                       106 ;       null.
                                       107 ;
                                       108 ; CALLING SEQUENCE:
                                       109 ;
                                       110 ;       First_char_val.wlu.v = LIB$ICHAR (string.rt.dx)
                                       111
                                  00000004 0000  112          string = 4                      ; Adr. of string descriptor
                                       113
                                       114 ;
                                       115 ; INPUT PARAMETERS:
                                       116 ;       NONE
                                       117 ;
                                       118 ; IMPLICIT INPUTS:
                                       119 ;       NONE
                                       120 ;
                                       121 ; OUTPUT PARAMETERS:
                                       122 ;       NONE
                                       123 ;
                                       124 ; IMPLICIT OUTPUTS:
                                       125 ;       NONE
                                       126 ;
                                       127 ; ROUTINE VALUE
                                       128 ;       FIRST_CHAR_VAL.wlu.v    value of 1st char as a INTEGER*4
                                       129 ;
                                       130 ; SIDE EFFECTS:
                                       131 ;       NONE
                                       132 ;
                                       133 ;--
                                       134
                                       135
                                       136
                                  0004 0000  137          .ENTRY  LIB$ICHAR, ^M<R2>       ; entry mask
                              50  04 AC  D0   0002  138          MOVL    STRING(AP), R0          ; address of string descriptor
                              02  03 A0  91   0006  139          CMPB    DSC$B_CLASS(R0), #DSC$K_CLASS_D ; read like fixed ?
                                 0C  1A   000A  140          BGTRU   1$                      ; no
                              50  04 BC  7D   000C  141          MOVQ    @STRING(AP), R0         ; length->R0, address->R1
                                 50  B5   0010  142          TSTW    R0                      ;
                                 15  1B   0012  143          BLEQU   10$                     ; if negative
                                 50  61   9A   0014  144          MOVZBL  (R1), R0                ; value of 1st character
                                     04   0017  145          RET
                                          0018  146
                          00000000'GF    16   0018  147 1$:      JSB     G^LIB$ANALYZE_SDESC_R2  ; extract: length->R1, addr->R2
                                 08  50   E9   001E  148          BLBC    R0, 10$                 ; if not success, quit
                                 51  B5   0021  149          TSTW    R1                      ; length 0 ?
                                 04  1B   0023  150          BLEQU   10$                     ; if so, return a null
                                 50  62   9A   0025  151          MOVZBL  (R2), R0                ; value of 1st character
                                     04   0028  152          RET                             ; return from LIB$ICHAR
                                          0029  153
                                 50  D4   0029  154 10$:      CLRL    R0                      ; return a null
                                     04   002B  155          RET
```

```
002C   156
002C   157          .END                            ; End of module LIBSICHAR
```

```
DSC$B_CLASS                     = 00000003
DSC$K_CLASS_D                   = 00000002
LIB$ANALYZE_SDESC_R2              ********   X   00
LIB$ICHAR                         00000000 RG   02
STRING                          = 00000004
```

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
ABS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
_LIB$CODE	0000002C (44.)	02 (2.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.02	00:00:02.01
Command processing	113	00:00:00.34	00:00:02.90
Pass 1	132	00:00:01.12	00:00:03.71
Symbol table sort	0	00:00:00.10	00:00:00.11
Pass 2	41	00:00:00.30	00:00:02.59
Symbol table output	2	00:00:00.01	00:00:00.01
Psect synopsis output	3	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	322	00:00:01.91	00:00:11.34

The working set limit was 900 pages.
7877 bytes (16 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 134 non-local and 2 local symbols.
157 source lines were read in Pass 1, producing 13 object records in Pass 2.
8 pages of virtual memory were used to define 7 macros.

Macro library statistics

Macro library name	Macros defined
_255DUA28:[SYSLIB]STARLET.MLB;2	4

190 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

```
MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:LIBICHAR/OBJ=OBJ$:LIBICHAR MSRC$:LIBICHAR/UPDATE=(ENH$:LIBICHAR)
```

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LIS

LIBGETSYI
LIS

LIBICHAR
LIS

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LIS

LIBGETFOR
LIS

LIBGETINP
LIS

LIBINISHR
LIS

LIBGETDVI
LIS

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LIS

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LIS

LIBGETMSG
LIS

LIBINDEX
LIS

LIBINSQHI
LIS

LIBGETJPI
LIS

LIBGETTAB
LIS