```
RRRRRRRRRRR    MMM           MMM       SSSSSSSSSSSS
RRRRRRRRRRR    MMM           MMM       SSSSSSSSSSSS
RRRRRRRRRRR    MMM           MMM       SSSSSSSSSSSS
RRR       RRR  MMMMMM     MMMMMM       SSS
RRR       RRR  MMMMMM     MMMMMM       SSS
RRR       RRR  MMMMMM     MMMMMM       SSS
RRR       RRR  MMM   MMM   MMM         SSS
RRR       RRR  MMM   MMM   MMM         SSS
RRR       RRR  MMM    MMM  MMM         SSS
RRRRRRRRRRR    MMM           MMM       SSSSSSSSS
RRRRRRRRRRR    MMM           MMM       SSSSSSSSS
RRRRRRRRRRR    MMM           MMM       SSSSSSSSS
RRR   RRR      MMM           MMM                SSS
RRR   RRR      MMM           MMM                SSS
RRR   RRR      MMM           MMM                SSS
RRR     RRR    MMM           MMM                SSS
RRR     RRR    MMM           MMM                SSS
RRR     RRR    MMM           MMM                SSS
RRR       RRR  MMM           MMM       SSSSSSSSSSSS
RRR       RRR  MMM           MMM       SSSSSSSSSSSS
RRR       RRR  MMM           MMM       SSSSSSSSSSSS
```

```
RRRRRRR    MM      MM   333333      CCCCCCCC  LL           000000     SSSSSSSS   EEEEEEEEEEE
RRRRRRRR   MM      MM   333333      CCCCCCCC  LL           000000     SSSSSSSS   EEEEEEEEEEE
RR    RR   MMMM  MMMM   33    33    CC        LL         00    00     SS         EE
RR    RR   MMMM  MMMM   33    33    CC        LL         00    00     SS         EE
RR    RR   MM MM MM     MM      33  CC        LL         00    00     SS         EE
RR    RR   MM  MM  MM         33    CC        LL         00    00     SS         EE
RRRRRRRR   MM      MM         33    CC        LL         00    00     SSSSSS     EEEEEEE
RRRRRRRR   MM      MM         33    CC        LL         00    00     SSSSSS     EEEEEEE
RR  RR     MM      MM         33    CC        LL         00    00         SS     EE
RR  RR     MM      MM         33    CC        LL         00    00         SS     EE
RR    RR   MM      MM   33    33    CC        LL         00    00         SS     EE
RR    RR   MM      MM   33    33    CC        LL         00    00         SS     EE
RR    RR   MM      MM   333333      CCCCCCCC  LLLLLLLLLL   000000     SSSSSSS    EEEEEEEEEE    ....
RR    RR   MM      MM   333333      CCCCCCCC  LLLLLLLLLL   000000     SSSSSSS    EEEEEEEEEE    ....
```

```
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
```

```
     1   0001  0
     2   0002  0  MODULE RM3CLOSE (LANGUAGE (BLISS32) ,
     3   0003  0                  IDENT = 'V04-000'
     4   0004  0                  ) =
     5   0005  1  BEGIN
     6   0006  1
     7   0007  1  !*******************************************************************
     8   0008  1  !*                                                                 *
     9   0009  1  !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                        *
    10   0010  1  !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.          *
    11   0011  1  !*  ALL RIGHTS RESERVED.                                           *
    12   0012  1  !*                                                                 *
    13   0013  1  !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED  *
    14   0014  1  !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
    15   0015  1  !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER  *
    16   0016  1  !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY  *
    17   0017  1  !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY  *
    18   0018  1  !*  TRANSFERRED.                                                    *
    19   0019  1  !*                                                                 *
    20   0020  1  !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE  *
    21   0021  1  !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT  *
    22   0022  1  !*  CORPORATION.                                                    *
    23   0023  1  !*                                                                 *
    24   0024  1  !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS  *
    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:      RMS32 INDEX SEQUENTIAL FILE ORGANIZATION
    33   0033  1  !
    34   0034  1  ! ABSTRACT:
    35   0035  1  !                INDEXED SPECIFIC CODE FOR $CLOSE
    36   0036  1  !
    37   0037  1  !
    38   0038  1  ! ENVIRONMENT:
    39   0039  1  !
    40   0040  1  !                VAX/VMS OPERATING SYSTEM
    41   0041  1  !
    42   0042  1  !--
    43   0043  1
    44   0044  1  !
    45   0045  1  ! AUTHOR:        Wendy Koenig    CREATION DATE:            11-APR-78  13:39
    46   0046  1  !
    47   0047  1  !
    48   0048  1  ! MODIFIED BY:
    49   0049  1  !
    50   0050  1  !     V03-004 MCN0003         Maria del C. Nasr      15-Mar-1983
    51   0051  1  !             More linkages reorganization
    52   0052  1  !
    53   0053  1  !     V03-003 MCN0002         Maria del C. Nasr      24-Feb-1983
    54   0054  1  !             Reorganize linkages.
    55   0055  1  !
    56   0056  1  !     V03-002 MCN0001         Maria del C. Nasr      08-Nov-1982
    57   0057  1  !             Return any index descriptors if file opened for block
```

RM3CLOSE
V04-000

E 15
16-Sep-1984 01:38:30   VAX-11 Bliss-32 V4.0-742   Page   2
14-Sep-1984 13:01:15   DISK$VMSMASTER:[RMS.SRC]RM3CLOSE.B32;1   (1)

```
58    0058  1 !              I/O since now the prologue and all descriptors are
59    0059  1 !              processed during create with BIO set.
60    0060  1 !
61    0061  1 !    V03-001 KBT0157        Keith B. Thompson        21-Aug-1982
62    0062  1 !              Reorganize psects
63    0063  1 !
64    0064  1 !    V02-005 CDS0002        C D Saether              06-Aug-1981
65    0065  1 !              Change linkage to only use ifab and impure area.
66    0066  1 !
67    0067  1 !    V02-004 CDS0001        C D Saether              16-Jul-1981
68    0068  1 !              Do not deallocate nrp on indirect close.
69    0069  1 !
70    0070  1 !   V02-099 REFORMAT    Ken Henderson               29-Jul-1980
71    0071  1 !              The code was reformatted.
72    0072  1 !
73    0073  1 ! REVISION HISTORY:
74    0074  1 !
75    0075  1 !   Wendy Koenig,         24-OCT-78  14:01
76    0076  1 !   X0002 - make changes caused by sharing conventions
77    0077  1 !
78    0078  1 !*****
79    0079  1
80    0080  1 LIBRARY 'RMSLIB:RMS';
81    0081  1
82    0082  1 REQUIRE 'RMSSRC:RMSIDXDEF';
83    0147  1
84    0148  1 !
85    0149  1 ! define default psects for code
86    0150  1 !
87    0151  1
88    0152  1 PSECT
89    0153  1     CODE = RM$RMS3(PSECT_ATTR),
90    0154  1     PLIT = RM$RMS3(PSECT_ATTR);
91    0155  1
92    0156  1 !
93    0157  1 ! Linkages
94    0158  1 !
95    0159  1
96    0160  1 LINKAGE
97    0161  1     L_LINK_7_10_11,
98    0162  1     L_RETSPC;
99    0163  1
100   0164  1 !
101   0165  1 ! External Routines
102   0166  1 !
103   0167  1
104   0168  1 EXTERNAL ROUTINE
105   0169  1     RM$RETBLK   : RL$RETSPC;
106   0170  1
```

RM3CLOSE
VO4-000

F 15
16-Sep-1984 01:38:30   VAX-11 Bliss-32 V4.0-742   Page   3
14-Sep-1984 13:01:15   DISK$VMSMASTER:[RMS.SRC]RM3CLOSE.B32;1   (2)

```
108   0171   1   GLOBAL ROUTINE RM$CLOSE3 : RL$LINK_7_10_11 =
109   0172   1
110   0173   1   !++
111   0174   1   !
112   0175   1   ! FUNCTIONAL DESCRIPTION:
113   0176   1   !
114   0177   1   !     If this is the last accessor of the file, deallocate all of the index
115   0178   1   !     descriptors ( off the IFAB) and zero the pointer.
116   0179   1   !
117   0180   1   ! CALLING SEQUENCE:
118   0181   1   !     BSBW     RM$CLOSE3
119   0182   1   !     entered via branch from RMS$CLOSE and will RSB back to CLSDLT
120   0183   1   !
121   0184   1   ! INPUT PARAMETERS:
122   0185   1   !     NONE
123   0186   1   !
124   0187   1   ! IMPLICIT INPUTS:
125   0188   1   !     R10 -- IFAB address
126   0189   1   !     R11 -- IMPURE AREA address
127   0190   1   !
128   0191   1   ! OUTPUT PARAMETERS:
129   0192   1   !     NONE
130   0193   1   !
131   0194   1   ! IMPLICIT OUTPUTS:
132   0195   1   !     NONE
133   0196   1   !
134   0197   1   ! ROUTINE VALUE:
135   0198   1   !     usual RMS status codes, especially SUC
136   0199   1   !
137   0200   1   ! SIDE EFFECTS:
138   0201   1   !     if they existed, the index descriptors will be deallocated
139   0202   1   !
140   0203   1   !--
141   0204   1
142   0205   1       ! ********** right now there is no way of telling if this is the last user
143   0206   1       ! ********** has to be taken care of when files are done    if this is the
144   0207   1       ! last accessor of the file, deallocate all of the index    descriptors ( off
145   0208   1       ! the IFAB) and zero the pointer. *********
146   0209   1       !
147   0210   2       BEGIN
148   0211
149   0212   2       EXTERNAL REGISTER
150   0213   2           R_IFAB STR,
151   0214   2           R_IMPURE;
152   0215
153   0216   2       LOCAL
154   0217   2           PTR : REF BBLOCK,
155   0218   2           NEXT;
156   0219
157   0220   2       ! Return on indirect close.
158   0221   2       !
159   0222
160   0223   2       IF .IFAB[IFB$V_PPF_IMAGE]
161   0224   2       THEN
162   0225   2           RETURN RMSSUC();
163   0226
164   0227   2       PTR = .IFAB[IFB$L_IDX_PTR];
```

```
;  165      0228  2          WHILE .PTR NEQ 0
;  166      0229  2          DO
;  167      0230  2              BEGIN
;  168      0231  3              NEXT = .PTR[IDX$L_IDXFL];
;  169      0232  3              RM$RETBLK ( 0, .IFAB, .PTR );
;  170      0233  3              PTR = .NEXT;
;  171      0234  3              END;
;  172      0235  2
;  173      0236  2
;  174      0237  2          IFAB[IFB$L_IDX_PTR] = 0;
;  175      0238  2          RETURN RMS$SUC()
;  176      0239  3
;  177      0240  1          END;
```

```
                                        .TITLE    RM3CLOSE
                                        .IDENT    \V04-000\

                                        .EXTRN    RM$RETBLK

                                        .PSECT    RM$RMS3,NOWRT,  GBL,  PIC,2


                          007C  8F  BB 00000 RM$CLOSE3::
                                                        PUSHR     #^M<R2,R3,R4,R5,R6>
              1B      04  AA          02 E0 00004        BBS       #2, 4(IFAB), 3$           ;  0171
                          54  00AC    CA D0 00009        MOVL      172(IFAB), PTR           ;  0223
                                      10 13 0000E 1$:    BEQL      2$                       ;  0227
                                      64 D0 00010        MOVL      (PTR), NEXT              ;  0229
                                      53 5A D0 00013     MOVL      IFAB, R3                 ;  0232
                                      52 D4 00016        CLRL      R2                       ;  0233
                                   0000G 30 00018        BSBW      RM$RETBLK
                          54          56 D0 0001B        MOVL      NEXT, PTR                ;  0234
                                      EE 11 0001E        BRB       1$                       ;  0229
                          00AC    CA D4 00020 2$:        CLRL      172(IFAB)                ;  0237
                          50          01 D0 00024 3$:    MOVL      #1, R0                   ;  0238
                          007C  8F    BA 00027           POPR      #^M<R2,R3,R4,R5,R6>      ;  0240
                                      05 0002B           RSB
```

; Routine Size: 44 bytes,   Routine Base: RM$RMS3 + 0000

```
;  178      0241  1
;  179      0242  1 END
;  180      0243  1
;  181      0244  0 ELUDOM
```

                            PSECT SUMMARY

;
;   Name   Bytes   Attributes
;
;   RM$RMS3   44 NOVEC,NOWRT, RD , EXE,NOSHR, GBL, REL, CON, PIC,ALIGN(2)

RM3CLOSE
V04-000

H 15
16-Sep-1984 01:38:30
14-Sep-1984 13:01:15

VAX-11 BLiss-32 V4.0-742   Page 5
DISK$VMSMASTER:[RMS.SRC]RM3CLOSE.B32;1 (2)

```
;                        Library Statistics
;
;                                    -------- Symbols --------    Pages       Processing
;            File                    Total    Loaded   Percent    Mapped      Time
;
;    _$255$DUA28:[RMS.OBJ]RMS.L32;1    3109     12        0        154        00:00.4
```

```
;                        COMMAND QUALIFIERS

;        BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:RM3CLOSE/OBJ=OBJ$:RM3CLOSE MSRC$:RM3CLOSE/UPDATE=(ENH$:RM3CLOSE)

; Size:           44 code + 0 data bytes
; Run Time:        00:02.8
; Elapsed Time:    00:12.2
; Lines/CPU Min:    5228
; Lexemes/CPU-Min: 10264
; Memory Used:  32 pages
; Compilation Complete
```

RM2UPDDEL
LIS

RM3CLOSE
LIS

RM3ALLBKT
LIS

RM2CREATE
LIS

RM2GET
LIS

RM2PUT
LIS

RM3BKTIO
LIS

RM3BKTSPL
LIS

RM3CMPKEY
LIS

RM3CMPRSS
LIS

RM2EXTEND
LIS

RM2FMTBKT
LIS

RM3BUG
LIS

RM2OPEN
LIS