


```

CCCCCCCC RRRRRRRR FFFFFFFF MM MM AAAAAA CCCCCCCC RRRRRRRR 000000 SSSSSSSS
CCCCCCCC RRRRRRRR FFFFFFFF MM MM AAAAAA CCCCCCCC RRRRRRRR 000000 SSSSSSSS
CC RR RR FF MMMM MMMM AA AA CC RR RR 00 00 SS
CC RR RR FF MMMM MMMM AA AA CC RR RR 00 00 SS
CC RR RR FF MM MM MM AA AA CC RR RR 00 00 SS
CC RRRRRRRR FFFFFFFF MM MM MM AA AA CC RRRRRRRR 00 00 SSSSSS
CC RRRRRRRR FFFFFFFF MM MM MM AA AA CC RRRRRRRR 00 00 SSSSSS
CC RR RR FF MM MM AAAAAAAAAA CC RR RR 00 00 SS
CC RR RR FF MM MM AAAAAAAAAA CC RR RR 00 00 SS
CC RR RR FF MM MM AA AA CC RR RR 00 00 SS
CC RR RR FF MM MM AA AA CC RR RR 00 00 SS
CCCCCCCC RR RR FF MM MM AA AA CCCCCCCC RR RR 000000 SSSSSSSS
CCCCCCCC RR RR FF MM MM AA AA CCCCCCCC RR RR 000000 SSSSSSSS

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MM MM AAAAAA RRRRRRRR
MM MM AAAAAA RRRRRRRR
MMMM MMMM AA AA RR RR
MMMM MMMM AA AA RR RR
MM MM MM AA AA RR RR
MM MM MM AA AA RRRRRRRR
MM MM MM AA AA RRRRRRRR
MM MM AAAAAAAAAA RR RR
MM MM AAAAAAAAAA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR
MM MM AA AA RR RR

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.TITLE CRF MACROS
.IDENT 'VOZ-000'

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**
* FACILITY: CROSS REFERENCE PROGRAM
*
* ABSTRACT: ACCEPTS CROSS REFERENCE DATA AND PRODUCES A SUMMARY
*
* ENVIRONMENT: LINKABLE IMAGE TO BE USED WITH THE NATIVE MODE LINKER AND COMPILERS
*
* AUTHOR: K.D. MORSE , CREATION DATE: 12-APR-77
*
* MODIFIED BY:
*
* 01.01 B.L. SCHREIBER 25-Oct-1979
* Change macro name and arguments to conform with bliss names
*
* 01.02 B.L. SCHREIBER 12-Dec-1979
* Modify for new Cref.
*
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.SBTTL DECLARATIONS

: MACROS:

: MACRO TO INITIALIZE THE OUTPUT LINE DESCRIPTION TABLE

: SCRFACTLTABLE KEYTYPE, ERROR, OUTPUT, MEMEXP, KEY1TABLE, KEY2TABLE,-
: VAL1TABLE, VAL2TABLE, REF1TABLE, REF2TABLE

: WHERE

: KEYTYPE = TYPE OF KEY, 0=ASCIC, 1=BINARY LONGWORD
: ERROR = ADDRESS OF USER'S ERROR ROUTINE
: OUTPUT = ADDRESS OF USER'S OUTPUT ROUTINE
: MEMEXP = NUMBER OF PAGES TO EXPREG BY WHEN NEEDED
: KEY1TABLE = ADDRESS OF KEY1 FIELD DESCRIPTION TABLE
: KEY2TABLE = ADDRESS OF KEY2 FIELD DESCRIPTION TABLE
: VAL1TABLE = ADDRESS OF VAL1 FIELD DESCRIPTION TABLE
: VAL2TABLE = ADDRESS OF VAL2 FIELD DESCRIPTION TABLE
: REF1TABLE = ADDRESS OF REF1 FIELD DESCRIPTION TABLE
: REF2TABLE = ADDRESS OF REF2 FIELD DESCRIPTION TABLE: .MACRO SCRFACTLTABLE KEYTYPE=ASCIC, OUTPUT, ERROR=0, MEMEXP=50, KEY1TABLE=0,-
: KEY2TABLE=0, VAL1TABLE=0, VAL2TABLE=0, REF1TABLE=0,-
: REF2TABLE=0: .LONG 0 : ADDRESS OF HASH TABLE
: .LONG 0 : ADDRESS OF LAST KEY LOOKED AT
: .BYTE CRF\$K_'KEYTYPE : TYPE OF KEY
: .BYTE 0 : CRF FLAGS
: .WORD 0 : SECONDARY ERROR STATUS CODE
: .LONG 0 : NUMBER OF ENTRIES IN CROSS REFERENCE
: .LONG 0,0 : LIST HEAD FOR VIRTUAL MEMORY ALLOCATED
: .LONG MEMEXP*512 : NUMBER OF BYTES TO EXPAND REGION BY
: .LONG MEMEXP : NUMBER OF PAGES TO EXPAND REGION BY
: .LONG 0,0,0,0,0,0,0,0 : RESERVED FOR EXPANSION
: .ADDRESS ERROR : ADDR OF ERROR ROUTINE
: .ADDRESS OUTPUT : ADDR OF OUTPUT ROUTINE
: : ADDRESSES OF FIELD DESCRIPTIONS
: .ADDRESS KEY1TABLE : KEY1 FIELD DESCRIPTIONS
: .ADDRESS KEY2TABLE : KEY2 FIELD DESCRIPTIONS
: .ADDRESS VAL1TABLE : VAL1 FIELD DESCRIPTIONS
: .ADDRESS VAL2TABLE : VAL2 FIELD DESCRIPTIONS
: .ADDRESS REF1TABLE : REF1 FIELD DESCRIPTIONS
: .ADDRESS REF2TABLE : REF2 FIELD DESCRIPTION
: .ENDM SCRFACTLTABLE : END OF INIT MACRO

: MACRO TO DEFINE ONE FIELD OF THE OUTPUT LINE

: SCRFFIELD BIT_MASK, FAO_STRING, SET_CLEAR, FIELD_WIDTH

: WHERE:

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: BIT_MASK=MASK OF BITS INDICATING THIS OUTPUT DESCRIPTION HOLDS
: FAO_STRING=FAO CONTROL STRING FOR THIS FIELD
: FIELD_WIDTH=MAXIMUM SIZE OF THIS OUTPUT LINE FIELD
: SET_CLEAR=INDICATOR HOW TO TEST MASK BITS, I.E. ONE OF THE FOLLOWING:
:   SET=MASK BITS ARE TO BE TESTED AS SET
:   CLEAR=MASK BITS ARE TO BE TESTED AS CLEAR

```

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: .MACRO SCRFFIELD BIT_MASK=0,FAO_STRING=0,FIELD_WIDTH=0,SET_CLEAR=0
:
: .SAVE
: .PSECT $$CRFSTRNG,RD,WRT,REL,NOEXE,NOSHR : REMEMBER USER'S PSECT
$$$LNG1=: .ASCII \FAO_STRING\ : ADDRESS OF FAO CONTROL STRING
: .ASCII \FAO_STRING\ : OUTPUT FIELD CONTROL STRING
$$$LNG2=: : INDICATOR FOR LENGTH
:
: .RESTORE
: .WORD BIT_MASK!*X8000 : RESTORE USER'S PSECT
: : RECORD MASK BITS
:
: .IF IDN <SET_CLEAR>,<CLEAR> : DETERMINE WHETHER
: .BYTE 0 : MASK IS TO BE CLEAR
: .IFF : OR IF
: .BYTE 1 : MASK IS TO BE SET
: .ENDC
:
: .BYTE FIELD_WIDTH : MAXIMUM SIZE OF FIELD
:
: .LONG $$$LNG2-$$$LNG1 : STRING DESCRIPTOR
: .ADDRESS $$$LNG1 : FOR FAO CONTROL STRING
:
: .ENDM SCRFFIELD : END OF FIELD DESCRIPTION MACRO

```

: MACRO TO INDICATE END OF OUTPUT LINE DESCRIPTION TABLE

: SCRFFIELDEND

: WHERE:

: THERE ARE NO FORMAL PARAMETERS.

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: .MACRO SCRFFIELDEND :
: .WORD 0 : END FIELD DESCRIPTIONS
: .ENDM SCRFFIELDEND : END OF MACRO

```


