

1401 TAPE IOCS PROGRAM LABEL KEY

Mr. Tom Scharf
IBM School
Gladengvn. 3 B
Etterstad, Oslo
Norway

FOR IBM INTERNAL USE ONLY

This paper is in the author's original form.
The objective in providing this copy is to
keep you informed in your field of interest.
Please do not distribute this paper to persons
outside the Company.

INTRODUCTION

This list was originally compiled in norwegian * by the author while working as a programmer at Storebrand Insurance Company, Oslo, in early 1963 before a good many changes had been made to the system and the author has no pretensions that this list is complete or correct. However experience has shown that it is very complete and quite correct enough to provide very time-saving and useful information while analyzing errors or studying the system logic. Labels which did not normally appear in the authors own programs were picked out from the macro listing for completeness and an attempt was made to ascertain the labels function from that list.

The author would like to recommend as a companion tool to this paper, another paper by the same author

"1401 Tape IOCS Advanced Notes (Tie 6503-0057)"
where a more complete discussion of the functions of important fields and labels is attempted.

I hope this list will stimulate readers to compile similar lists for other systems if these lists are not found in published IBM literature- if for no other reason than that it is an excellent way to learn about a system in considerable detail and thus be well armed for future system trouble shooting.

* available upon request from author

During translation the author has utilized the opportunity to make some corrections and to enlarge extensively upon the explanations. The author feels that the present document is much more reliable and much clearer than the original document, and is to be preferred.

Instructions for use of this list

Labels ending with OON indicate DTF or Macroinstruction labels which can be any number 002, 003, 004 etc. depending on the position in the program relative to any other macros.

Labels ending in 001 all belong to DIOCS routines because it is always the first macro. (DIOCS is macro 55555 in your library)

Labels beginning with IOC are usually associated with DIOCS routines and are primarily labels external to the DIOCS. That is some DTF, OPEN or other IOCS macro, or user coding according to the manual (see IOCUXT in connection with exits for example) needs to refer to the label.

The following abbreviations will be used to indicate where the label definition is valid.

PRI	printer files (DTF's)
PUN	punch files
REA	reader files
TAB	DTF table
IFX	input fixed length files
OFX	output fixed length files
OVU	output variable unblocked files
OVB	output variable blocked files
IVU	input variable unblocked files

Caution this list is relevant only for non-overlap programs compiled with a tape-oriented compiler. Tape programs compiled on a disk compiler (1311) have different labels.

LABELS BEGINNING WITH IOC

ACT	A little subroutine which puts an "N" (NOP) at the DTF file name address (first instruction in DTF routine) to <u>open</u> the file.	ER1	Resets error count after 50 read attempts and a halt. Press start for new try.
ALT	Alternate tape number. Exchanged with IOCTAP. As returned to the DTF table after alternate tape switching operations.	ER2	Resets error count after 30 write attempts and a halt. Press start for a new try.
ASC	1 pos. counter for testing a max. of 10 erase tape tries.	ER3	Resets error count after 10 erase attempts. Halt 3010. Press start for further attempts.
BLK	Block count contents for file being handled by DIOCS. See IOCS manual for use	ERC	Halt when one tries to close a file which has not been opened.
BYP	One pos. GMARK/WMARK used to skip possible tape mark after leader label.	ERO	3 instructions which end the CLEAN routine with a last read tape instruction before proceeding to process, bypass, scan or dump options.
BYX	Exit instruction from checkpoint record routine.	ERR	One pos. counter bucket for testing of total read/write errors during a given Get/Put etc.
CHE	EOR condition sensed during an erase. Error routine. Halt nr. 3900 depress start to continue.	FES	A WM switch. ON while FEORL routine is engaged by this macro.
CLE	Part of tape error routine, where IRG generated GMARK in input area is removed in the case of a noise record. This routine restores noise record count and goes to a reread.	FSW	A WM switch. ON while file serial number is blank in the file being considered.
CRD	5 position area for creation date (65001 etc.) while a particular file is being worked on by DIOCS.	HSH	10 pos. bucket for hash total while file is being worked on by DIOCS routines.
DAC	A little subroutine which closes a files DTF routine by moving a "B" (branch around the DTF routine) on the first DTF instruction.	HSW	A WM switch. ON when the file being handled by DIOCS has no hash total.
DGM	Beginning of dump tape error routine	IDT	10 pos. bucket for leader label ident. while corresponding file is being DIOCS handled.
DRR	Part of tape error (write) routine where error count is bumped and tested.	KBY	A subroutine for sensing the ** CHKPT checkpoint records.
DSW	A switch used by the CLEAN routine so that it can exit from the comb.R/W routine after noise record test but before error test.	LEN	A Label which is an alternative (or substitute for) IOCONR as a referense point when the CLEAN routine is not present. A branch to IOCLN&4 (see IOCNRR routine) is a branch to DUMP tape, BYPASS or PROCESS routines.
ECK	Entrance to tape Read/Write subroutine from error routines for BYPASS option	LOS	A WM switch. ON when CLOSE routine has been activated.
END	Address of 1st available position after last IOCS routine in core.	LOZ	Entrance to CLOSE routine
ENT	Entrance for CLOSE, OPEN, EOR, FEORL, so that DTF table data is moved to IOCPSV area for DIOCS routine use. Exit from the routine is also initialized.	LVE	Exit routine for OPEN, CLOSE, end of reel and forced end of reel routines. Its' primary objective is to return the updated file information (such as reel count) to the DTF table. It restores x3 and places the N or B on the DTF routine entrance in order to open or close the file when called for.
EOF	End of file address bucket during file processing	MPR	Routine in R/Write subroutine which tests for noise records (tape records of only 1 to 12 positions.)
EOR	Entrance to end of reel processing	NPR	B 000 exit from joint Read/Write subroutine after this is through (often a useful point to examine in core to find out the address of the routine which last called the read write subroutine.)
		NRR	Subroutine in tape error routine which subtracts one from error count and retrys.
		NT2	Accumulator bucket used exclusively by CLEAN routine for testing of total BSP and RT

ONR	Entrance to CLEAN routine	RDX	since one doesn't have to evaluate whether or not a reader DTF is actually present when including a B IOCRDX instruction. See also IOCPNX.
OPN	Entrance to OPEN routine	(cont.)	
OPS	A WM switch. ON (- WM) while OPEN routine is activated.	RED	1st. inst. in tape error routine. It tests whether or not any errors have occurred on the same record.
ORC	A branch instruction (BEF 000) in Read/Write tape routine which contains the EOR routine for a read file. Goes to DTF EOR routine.	RER	read instruction and subroutine which reads records up to the record in question after the CLEAN attempt.
PCK	Address of a subroutine which converts 5 pos. addresses to 3 pos. 1401 machine addresses.	RKS	Test for tape error. Used to hop over noise record test.
PKX	Exit from IOCPCK 5 to 3 pos. conversion routine.	RDW	Beginning of erase tape routine in write error routines.
PNX	If RELEASE in DIOCS FEATURES is specified but PUNCH is <u>not</u> specified, then this "do nothing" routine is included so that IOCS and users can attempt to "release" the punch feed even though they are not aware this is not possible. If release and Punch are specified then this routine works as described in the IOCS manual- to "release" the punched feed.	RSW	A WM switch which is on (WM) to indicate that a file has no record count.
PSV-4	Represents one of the codes on the DTF table which have been moved to the joint DIOCS routines for use. It indicates label type. 1 is "standard labels, check all." 2 is non-standard. J is Standard and IDENT. A is "standard labels, not ident, not all. Blank indicates no labels. Caution- it is not always possible to simply patch in new codes here unless the DIOCS LABELDEF specification includes the possibility ("Mixed" includes <u>all</u> possibilities.)	RWD	Rewind option code in DIOCS DTF-table work area. See IOCS manual.
PSV	A 16 position area in the DIOCS routines; used to contain the lower (highest core address) 16 positions of the current DTF file table which is being treated. See IOCBLK RWD, ACT, TAP, TYP etc. as parts of this table.	RWR	Entrance to a subroutine for reading and writing header and trailer labels. See IOCTDF.
QUT	Label of a B 000 instruction where core storage inspection will reveal the last OPEN, CLOSE or FEORL macro (possibly other portions of DIOCS routine). Can be very useful as an error analysis tool.	RXR	Exit from joint read/write subroutine with index register restore, used by error routine for <u>process</u> option.
RAS	Erase tape (because of write error) routine. Reset error counts; attempt rewrite.	SAV	Save bucket for index registers. X 1 is saved in DTF routines here.
RCL	EOR test at end of combination R/W routine for write files goes to DTF EOR routine.	SEQ	3 pos. bucket for reel sequence while the particular files DTF table is being handled by the DIOCS routines.
RCT	10 position bucket for record count for a DTF while the DTF table is held in the DIOCS work areas. Used principally for comparing to trailer labels or writing on them.	SER	5 pos. bucket for file serial number while the particular files DTF table is being handled by the DIOCS routines.
RCY	3 pos. area for retention cycle contents while DTF table is being handled by DIOCS.	SLB	DA label for an 80 pos. (+GM) area used as tape label input/output area. This area is a critical point since the IOCS routines read "old leader labels" in for all output files which are to have standard labels written on them. This is done in load mode, and if the old tape should happen to have a record more than 80 pos. the DA GM/WM will <u>not</u> stop the I/O operation ruining the IOCS program portion just <u>after</u> this area and resulting in a "process" when the program tries to continue from the ruined portion.
RDL	entrance to a routine which reads cards at the command of the RDLIN macro; decides if they are RDLIN cards and transfers contents of RDLIN cards to the DTF label named in the macro.	SPC	backspace instruction in "CLEAN" routine which backspace the tape error portion past the vacuum cleaner portion of the tape unit.
RDX	This subroutine is normally executed by the user or by IOCS routines to force card reading after a start read feed has been give. It is described in the IOCS manual. If <u>release</u> is specified but <u>reader</u> is not specified in DIOCS then this routine is included but it is a "do nothing" subroutine. This is useful	SRE	Return address from an EXIT user routine to IOCS. See manual.
		SRW	Entrance to general read/write routine
		SV1	1 pos. temporary bucket for alternate tape unit switching routine. It contains unit number of one of the units being switched.
		SV3	Index register 3 save bucket- esp. during close routine.

SV6	6 pos. bucket used in the IOCS routine which checks retention cycle and creation date on the output tape (to be written on) against "today's date" IOCSV6-1 will contain the modulus 365 sum of creation date + retention cycle.	UXT	Label of a B 000 instruction where the 000 is filled out at object time with (among other things) the return address to the users program after GET, PUT, RDLIN instruction is executed. This can be especially useful during error analysis where, using the core print, you can often determine which user macro was last executed.
SVA	3 pos. bucket contains A-reg. contents from the move instruction which transfers the DTF label to IOCPSV. This gives the location of the upper part of the DTF table (lowest core pos. not transferred).	WDP	Beginning of write dump tape routine.
TAP	- tape unit which a file is using at the moment the file is being handled by the DIOCS routine. Used in connection with ALT TAPE routine swap.	XR1	Index register one label = position 089. May be used by user to avoid defining own labels.
TBR	3 pos. bucket where location of the position after a group mark (evt. word mark) at the end of a tape record, is noted especially for the noise record test and wrong length record control. It is also used as the basis for removing Group Marks read in in noise and WLR records as well as for changing GM to Record Mark on Form 3 (V/U) records.	XR2	Position 094. Index register 2 address.
TCT	error bucket used in dump tape routine.	XR3	Position 099. Index register 3 address.
TDE	skip and blank tape error routine for dump tape.	XSV	8 position index register save area used by among others IOCENT routine. The registers are saved by a chaining operation and the register contents are saved in the extreme 3 (left and right) position. The middle two positions contain the contents of the 2 positions between the index regs.
TFD	a table used by read/write routine and IOCRWR to indicate how labels are to be read or written, end of reel address etc; built up as described in IOCS manual for use of IOCSRW routine.	XT1	XT2, XT3 etc. are labels of instructions which branch to users EXnADDR label if present for the file which DIOCS is currently processing. If no user exit is specified in the DTF then IOCSRE (re-entry) is branched to making it non-effective as an exit.
TDH	HALT 3666. Ten consecutive erases while dump tape write was attempted.	ZON	Table of zonebits for use in IOCPCK (convert 5 to 3 position address) routine.
TDY	Pos. 199 to 195 contains "today's date" (for example 66001). Pos. 195 <u>must</u> contain the WM IOCS places there. It is the users (possibly operators) responsibility to place the date in 195-199. Used for control of old header label and creation of new header label.	<u>Internal Labels (used only within one macro, DIOCS or DTF)</u>	
TNT	6 pos. bucket for saving of X2 and X3.	◊ (lozenge) is the first character of each label in the following list list. It will be omitted in the list. NOTE: Labels ending in 001 are DIOCS labels. Others are used in DTF's or other IOCS Macros.	
TRW	label of the instruction in the read/write routine containing the I/O instruction itself. It is often used to pick up information about the last read/write operation performed- particularly in tape error routines. It is useful to investigate this instruction in a core clump.	OKOO1	Routine which writes last block on tape.
TSS	Temporary 5 pos. bucket which contains the tape serial number while the label area (IOCSLB) is blanked before formation of a new output label.	OLOO1	Reference point used by printer etc. to hop over routines which pick up label dates from DTF table.
TTM	Part of tape read error routine where the error count is bumped and tested.	OMOON IFX	Test for area parameter which might be contained in the calling "GET" instruction or (if WORKAREA is specified) transfer of file data to its DTF specified WORKAREA.
TYP	Located in IOCPSV save area with a code for the current DTF being handled by DIOCS indicating file type as follows R = Tape INPUT, W = tape output, 1 = card reader, 2 = printer, 4 = punch. Picked up from DTF table when DIOCS routines are used.	OFX	Test for workarea parameter contained in "PUT" calling sequence or (if WORKAREA is specified) transfer without test from DTF WORKAREA specified area to the output area.
		OMOO1	Punch extra card at CLOSE of a PUNCH file used to ensure that the last card punched is also checked.
		ONOO1	EXIT initialization or restore to operand value IOCSRE, i. e. the DIOCS EXITS are "closed" until they are opened by a DTF with corresponding exits.

00001	Routine resets tape header read error counter after 10 errors.	1NOO1	Exit from the \square 1LOO1 routine when hash but no record count is to be taken.
0POO1	Test for % in DTF table (which indicates that the label information will be found in the immediately lower (core position-wise) part of core). This is necessary so that label information may be transmitted to the DIOCS area IOCPSV.	1POO1	Beginning of the main routine for file handling.
0QOO1	Handles exit addresses	1QOO1	Branch to address for skipping of record count taking by the DIOCS routines when none so specified for the current DTF.
0ROO1	Handles exit addresses	1ROO1	Address used as reference point when a "no-hash-total-on-current-file" condition causes elimination of hash count checking.
1JOO1	Beginning to the routine that tests to see if label information from the DTF table is to be transmitted to the DIOCS IOCPSV area; and its transmission, if necessary.	2JOO1	EXIT 6 return address after exit routine.
1KOON	Table required as a parameter list for any use of the combination read/write tape routine (see IOCS manual for table construction details).	2KOON	OVB End of reel address for this DTF routine. See \square 1KOON table.
1KOO1	Transmits reel sequence, retention cycle and creation date to common (to DTF's) DIOCS area.	2KOO1	BOOO Instruction containing the current DTF's own EOFADDR. See IOCRCL&IOCORC: Note <u>these</u> are only end of reel routines which return to the DTF end of reel routine which then goes to IOCEDR and <u>then</u> we come to the \square 2KOO1 exit if it is end of file - <u>not</u> just reel. Note this is a B/NOP switch activated by the \square OLOO1 routine.
1LOO1	Record count and hash total if present are transmitted to the common DIOCS area from the upper part (lower core) of the DTF table of the file being handled.	2LOON	IVB Routine reads a new block, checks for possible checkpoint records (if specified), bumps block count, tests wrong length record and "zeroes" the \square 2Q counter to 004, that is, to the first data record.
1MOON	IVU routine which moves a record from the input area to the work area (the IRG produced GM is converted to record mark for this purpose). It increases hash & record count.	OVB	Routine which sets GM/WM bumps blocksize counts by 004 to take account of the 4 pos BCC field, bumps block count and initiates writing of the record on tape.
OVU	Routine which moves the workarea to the output area, sets the necessary GM/WM and calls the write tape routine.	IVU	As for IVB, however, no WLR checking and the IRG formed GM is changed to a \ddagger to aid MRCM operations (there is no WM on the GM and if we put one there it would have to be cleared later).
IFX	Transfer from input area to the work area specified in the GET/PUT instruction.	OFX	Routine which imitates writing of new tape record, bumps block count, resets relse switch.
OFX	Move record instruction. Moves work area to the file output area. This move is also used to copy padding records after the first padding record is formed. The IOCS does <u>not</u> place a record mark at the end of the first record it forms. It assumes there is one there. However, this assumption often fails when padding occurs before the first block has been written out and the DA has no record mark specification. This can also occur if there is no record mark at the assumed position based on the SIZEREC specification or the actual record (workarea) size. If this "error" occurs during testing the simplest remedy is usually to increase the number of output cases to exceed the block factor.	IFX	Routine which initiates reading of new tape record bumps block count.
1MOO1	Similar to 1LOO1 above.	2LOO1	Beginning of end-of-reel rewind routine.
1NOON	OVU Routine which bumps hash and record totals and writes the record out on tape (calls the write routine)	2MOON	OVB Relse routine for this file.
OFX	This NOP instruction is changed at object time to an MRCM if the put instruction (or the padding routine - see 1MOON for OFX) needs work area transfer to the output area. It is a sort of NOP/MRCM switch. (<u>N</u> or <u>P</u>)	IVB	Routine sets block count to 004 and returns control to user coding after the RELSE instruction.
		IVU	Exit from DTF routine to instruction after users RELSE. Sort of a do-nothing instruction which must be there due to the system RELSE uses in the first 3 instructions of the DTF routine.

OVU	Same as IVU	3KOON	OVB	routine which removes WM from GM after a write operation and resets the counters to indicate the first available space for new output data records at the beginning (+4) of the output area.
OFX	RELSE routine, ensures padding of output block if necessary.		OVU	removes WM over GM used for WT. See 3JOON.
IFX	RELSE routine resets 2 QOON and users DTF specified INDEXREG FOR BLOCKED RECORDS: A "do-nothing" routine for unblocked records.	3KOO1		Return address to main checking (label: DTF compare) routine if the comparison was equal. See 3JOO1.
2MOO1	Routine which bumps reel sequence nr. if it is not yet end of file.	3LOON	OFX	routine which zeroes INDEXREG and 2QOON before returning to user coding after (PUT) macro. This is a "reset to new block, first data record" routine.
2NOO1	Reference point used to hop over end of reel procedures at certain times such as OPEN or ON unit record files.	3LOO1		General input trailer comparison test routine, analogous to 3JOO1. Press start to "approve" the error if it halts here - but ask yourself why it is halting - are the count specifications in DTF/DIOCS in agreement with the actual label? Take a core printout at the halt and check the IOCSLB area against the counts in the upper part of the DTF table. The contents of 3MOO1 instruction points to the compare that failed.
2O001	Beginning of routine which clears block count and record/hash areas and imitates reading of a header label.	3MOON	OFX	initialization routine for index register and MRCM instruction used as a reference point by the RELSE initialization so these instructions can be used jointly by RELSE and PUT.
2POON	Standard exit point from the DTF routine after a new data record has been made available.	3MOO1	B ooo	exit from 3LOO1 subroutine for trailer checking.
2POO1	Exit point from the DIOCS rewind routine used as a reference point to skip over the rewind instruction if the current DTF has no need of it.	3NOO1		Halt 3027 allows user to mount his next tape reel.
2QOON	OVB Machine address counter containing address of the next available data record space on its output area.	3POON	OFX	loop address for padding loop. Padding is placed one character pr. loop for the first record.
	IVB A counter which keeps account of the next available data record.	3POO1		Beginnig of handling of new reel on output tape after a possible old header has been read, but before any checking or rewind takes place. The label is read by a joint routine (2Oo01) and this is the branch point after that read, for output files.
	OFX A 3 pos counter used to keep track of next available space for data records. Keeps track parallel with the INDEXREG if specified and is used to update the INDEXREG (or internal indexreg if INDEXREG not specified for blocked records) at each PUT.	3QOO1		a check point to check if the old header was a temporary header label (1BLNK - checks the B) so as to hop the retention cycle checking routine immediately following this point, if necessary.
	IFX As OFX but keeps track of next available input data record.	3ROO1		Beginning of routine which tests the retention cycle to see if the new reel can be written on. It is assumed at this point that pos 195-199 contains a date and that 195 contains the IOCS-set WM.
2QOO1	Reference point after read-header-label routine so that the routine can be skipped if a DTF file specifies no labels.	4JOO1		Create new header label routine (from constants and DTF table data).
2ROON	OFX Test field for the extreme end point of the padding operation.	4KOO1		Return point used by 4NOO1 subroutine.
2ROO1	Reference point placed after header label "ALL" and "IDENT" checking so that this can be skipped if the DTF table specifies.	4LOO1		Marks the end of the standard header label routine. Non-standard files skip to this point.
3JOON	OVU places a WM on an existing GM before writing the record. It is removed at 3KOON.	4MOON	OFX	Hash total add instruction for blocked files.
3JOO1	A general subroutine which tests the equal or unequal result of the several comparisons of DTF table information and their corresponding fields in the actual header label. If any one field is unequal we get an unnumbered halt. Press start allows us to continue as if the <u>whole</u> label was accepted as being correct.			

4MOOI	A routine which handles those cases where the sum of the creation date plus retention cycle is more than 365 days. This is moduls 365 arithmetic. This means that the year count is increased by one and the total number of days is reduced by 365 to compensate.	5MOOI	Return point for the subroutines which activate (B→filename) and deactivate (N→filename) files at OPEN/CLOSE time.
4NOOI	Routine which takes tape serial number as the file serial number when this latter is blank.	5NOOI	Halt 3555 which indicates an incorrect (prog. error) return from exit 8.
4O001	Routine which reads the old header label if the DIOCS is "output only" and the combination-read below π2O001 does not exist.	5O001	Beginning of the part of the IOCLVE routine which restores the fixed portions of the DTF table just "updated" in DIOCS to its DTF.
4POOI	Routine which handles tape output end of reel situations. Referred to in OLOOI to choose between input and output EOR handling.	5QOON	OVB Constant giving maximum block size (= BLOCKSIZE)
4QOON	OVB bucket containing tape record size thus far. IFX For blocked files this is a constant containing in the operand of a NOP instruction (never executed) a value equal to BLOCKSIZE MINUS SIZEREC. It is used to re-initialize the bucket π2QOON to its original value which is such that a new GET will force reading of a new block (used in RELSE routine). This constant is useful when files (FIXED BL, INPUT) must be reinitialized in order to re-open them using either MLC π4QOON, π2QOON (N = the DTF macro number) or a RELSE (filename) which does the same thing.	5QOO1	Tape read error routine for old header label read errors. Must be used if TAPEUSE = OUTPUT since the normal read error routines are absent.
4QOO1	Routine which writes the first Tape Mark on the output end of reel and if necessary continues with formation of the trailer label.	6J0ON	OVB reference point used by the RELSE routine when VARBUILD is specified so that the following portion of coding may be shared between RELSE and PUT routines.
4ROOI	Routine just before EXIT 2 if present and just before writing of the second tape mark used as a reference to skip coding if MIXED labels are specified.	7J0ON TAB	DTF name for record count bucket in DTF table.
5JOO1	Reference point used during restoring of DTF table after the update in DIOCS routines, to skip over header label data update of data for standard labels. This is used when MIXED files are specified and a non-standard label file occurs.	7JOO1	The part of RDLIN subroutine which reads and tests (for "RDLIN") the RDLIN cards.
5KOO1	Reference point label used to skip updated record count restore-to-DTF-table when no record count is present.	7K0ON TAB	DTF bucket for the hash total, located in upper DTF table.
5LOOI	Address reference used by unlabelled DTF files being DIOCS handled to hop over all label data restoring to DTF table after the update for completely unlabelled files (when MIXED is specified).	7KOO1	The part of the RDLIN subroutine which tests DTF table for the % sign which is a signal indicating where the RDLIN card data can be placed on the DTF table. The % sign "floats" according to the number of exits and all label data is in core immediately below (on the post list "above") this % sign.
5MOON	OFX Test for Group mark at end of output DA which indicates that the data record just PUT filled out the physical block and thus the block can be written. This test can "fail" when DA, SIZEREC or BLOCKSIZE specifications do not agree or if the GM is not actually present at the end of the DA for any reason.	7LOON	OVB Routine which bumps block count with the record count from the varbuild operand and notes the record count (from the VARBUILD operand) in a save area π8ROON.
			IVB Routine which moves data record to workarea; notes its length in a bucket and reduces the specified block count by this amount.
			IFX Routine which moves IOAREA data to a workarea.
		7LOO1	The part of RDLIN subroutine which actually transfers the RDLIN card information to the DTF table.
		7MOON	OVB A NOP/B switch used by set to B if RELSE has activated DTF. Used to avoid taking record, hash totals and updating record count when this should not be correct since RELSE does not itself put any data record, but it does note hash, record data from the previous put before writing out the block.
		7NOON	OVB Used if VARBUILD is specified. It resets π7MOON switch to NOP (allowing future "record" totals and data accumulation) and returns 004 to the VARBUILD operand (indicating the next data record is the first in the next block). If the sequence is being used by the RELSE routine it continues at π2LOON (write the block) if not, a test is made to see if the block should be written or not (if it is filled).

8JOON OVB comes when neither VARBUILD or WORKAREA is specified (i. e. a PUT work area parameter must be given). It restores 10CXR3 (097 - 099) to its original value before the DTF routine was called. (The save instruction was SBR 18JOON + 6, 013)

8KOON Restore of X3 similar to 18KOON used if also EXIT8ADDR is present just before the end of reel (IOCEDR) routine is called.

8MOO1 EXIT initialization routine reference point for input files.

8NOO1 Loop address for 18 POO1 routine where each position in the 80 character IOCSLBarea is blanked out one by one.

8POO1 Subroutine which one by one clears data and wordmarks in the IOCSLB label I/O area.

8ROO1 The routine which executes the RWU instruction for the UNLOAD option.

8ROON OVB a save area (3 POS.) for the record length given by the programmer to the VARBUILD area.

9JOON OVB Wordmark switch. NO WM indicates that the RELSE macro is using the DTF routine. WM indicates that PUT is using the routine.

9KOON OVB Exit from the RELSE routine which restores X1 and puts on the 17MOON switch so that the next PUT will not attempt to take hash, record counts for the previously PUT record which were actually taken by the RELSE before the block was written out.

9MOON OFX wordmark switch indicating if ON that the RELSE routine (which is also used by CLOSE) wants the DTF routines, normally used by PUT to move records from a work area, to "move" the padded record it has just created to the next data record to the right (thus copying the padded record), until the block is fully padded. This switch is turned off (NO WM) at the beginning of each PUT use of the DTF routine.

9ROON OVB Halt 3999 program error no VARBUILD or workarea (in DTF or PUT) specification. A recompile is necessary (or at least patching of the put macro out of line so that the area parameter is present).