

UNIVAC® FILE-COMPUTER INSTRUCTION CODES

AD 14 (U)+(V)-RD, (RD)-W
 AT 13 (U)-RD, (RD)-W
 BT 23 (U)-BTB, (BTB)-W

UFC WORD FORMAT

	U	V	W	PR	S
	11	10	9	8	7
	6	5	4	3	2
	1				

CC 33 { A's - TRACK or BUFFER SPECIFIED
 BY W SECTION OF IW.
 IGNORE U & V SECTIONS.

CP 37 (U) COMPARE (V)

DE 45* { DEMAND STATION: "b" [0 THRU 9]
 DEMAND OUT: "a" ≠ 1 NO TRACK SWITCH
 "a" = 1 TRACK SWITCH. CONTROL INFORMATION
 [VVV] - I/O UNIT, PAK is NI
 SPECIAL OUT: "c" ≠ 1 INHIBIT TRACK SWITCH
 & CONTROL INFORMATION [WWW] is NI
 "c" = 1 PERMIT TRACK SWITCH &
 CONTROL INFORMATION. [VVV] - I/O UNIT
 [WWW] is NI

DO 48 (U)+(V), -RD, (RD)-W
 DR 49 (U)+(V), -RD, (RD)-W
 JN 15 IF COND. STOR = -, U - W of (V), W - PAK IF ≠ -, PAK is NI
 JP 17 IF COND. STOR = +, U - W of (V), W - PAK IF ≠ +, PAK is NI
 JZ 19 IF COND. STOR = 0, U - W of (V), W - PAK IF ≠ 0, PAK is NI
 UJ 41 IGNORE COND. STOR. U - W OF (V), W - PAK
 LA 31 (IRV [0 THRU 4]) - GSAR
 LN 35 (U) [NORMALIZE 0's, -, Δ, i's], (RA) - RD, (RD) - W, LEFT SHIFT COUNT - RB
 LS 32 (IRV) - SRV
 MK 42 (U) [MASK BY] (V) - RD, (RD) - W
 ML 43 (U) × (V), -RD, (RD) - W
 MU 44 (U) × (V), -RC, (RC) - W
 SB 22 (U) - (V) - RD, (RD) - W

NOT COMPLETED: U - PAK
 COMPLETED:
 SUCCESSFUL +; PAK is NI
 UNSUCCESSFUL -; V is NI
 IGNORE FOUND 0; W is NI

SU 24 { (U) - RA, (V) - RB
 (RA [1 THRU 9] + RB [1 THRU 9]) - RD
 (RD) - W

SV 25 { (U) - RA, (V) - RB
 (RA [1 THRU 9, 5 THRU 9] + RB [8 THRU 6]) - RD
 (RD) - W

SW 26 { (U) - RA, (V) - RB
 (RA [1 THRU 6, 2 THRU 5] + RB [5 THRU 3]) - RD
 (RD) - W

SZ 29 (U) [LESS LEFT 0's, -, Δ, i's], (RA) - RD, (RD) - W

TD 34* { DEMAND STATION: "b" [0 THRU 9]
 READY: [VVV] - PAK
 NOT READY: [WWW] - PAK

TI 39* { DEMAND STATION: "b" [0 THRU 9]
 CONTROL LINE TEST is "c" [W, X, Y, Z]
 FOUND "a" = 1 TRACK SWITCH, a ≠ 1
 NO TRACK SWITCH, [WWW] is NI
 NOT FOUND: NO TRACK SWITCH, PAK is NI

*INSTRUCTION WORD FORMAT: abc VVV WWW PRS

SUB-INSTRUCTIONS

	BREAK POINT			SET COND. STGE.	NO CHECK
	1	2	3		
2	X			X	
3		X		X	
4			X	X	
5, Δ, 0, i	IGNORE "S" IN IW				
6	X				
7		X			
8			X		
9				X	
B	X			X	X
C		X		X	X
D			X	X	X
E					X
F	X				X
G		X			X
H			X		X
I				X	X

K i's - GSB L RUR
 M WUR N CS=
 O CS≠ P WUR & CHECK
 Q THRU Y SPECIAL CHAR OUT Z STOP

TRANSCOP INSTRUCTION

TRANSFER CONTROL TO THE PLUGBOARD STEP WHICH
 EQUALS PR OF THE IW [51 THRU 98]

SHIFT

U V W WHERE: u, v, w = TYPE OF SHIFT
 ux vyy wzz 0 = NO SHIFT
 1 = RIGHT END AROUND
 2 = LEFT END OFF
 3 = RIGHT END OFF
 xx, yy, zz = NUMBER OF SHIFTS

ADDRESSES

HIGH SPEED DRUM AND BUFFER ADDRESS: XXY
 Y [0 THRU 9] = WORD. Y [Z] = TRACK. Y [A THRU V EXCEPT I, O] = FIELD
 XX [00 THRU 09] = I/O TRACK.
 XX [10] = BTB, XX [11 AND 12] = FACTOR STORAGE
 XX [13 THRU 97] = INTERMEDIATE STORAGE XX [98] = GSB
 XX [0'] = REFER TO I/O TRACK OF UNIT CURRENTLY ON DEMAND

SPECIAL ADDRESSES LARGE CAPACITY DRUM ADDRESSES: L DS CH AA
 990 RA 996 IRV L [0 THRU 9] = UR LENGTH
 991 RB 997 PAK DS = DRUM SECTION
 992 RC 998* SRV CH = CHANNEL
 993 RD 99W* ISP AA = ANGULAR ADDRESS
 994 CDR 99X* BTP
 995 GSAR 99Y* GSP

* DESTINATION ONLY

UNIVAC® FILE-COMPUTER PROGRAMMING CARD

ANOTHER SERVICE OF . . .

MANAGEMENT SERVICES

AND

OPERATIONS RESEARCH DEPARTMENT

Remington Rand Univac

DIVISION OF SPERRY RAND CORPORATION

THE LANGUAGE OF UNIVAC (UNIVAC 7-LEVEL CODE)

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
00	i	Δ	-	0	1	2	3	4	5	6	7	8	9	'	a	(
01	r	.	.	i	A	B	C	D	E	F	G	H	I	#	¢	⊙
10	t	")	J	K	L	M	N	O	P	Q	R	\$	*	?
11	Σ	β	:	+	/	S	T	U	V	W	X	Y	Z	%	=	

NUMERIC CODE	MNEMONIC CODE	AD,SB,ML, MU,DQ,DR, MT,SU,SV, SW	AT	BT	JN JP JZ UJ	CC	LA LS	SZ LN	CP	TD	DE	TI	SP	
		PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	0
13	AT													
14	AD	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	1
15	JN													
17	JP	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	SWITCH IRV	2
19	JZ	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	OP→PR,SR	2
22	SB	U→SAR	U→SAR	U→SAR	NO JUMP: 7→OED	7→OED	7→OED	U→SAR	U→SAR	U→SAR	U→SAR	U→SAR	PROBE CS STG	3
23	BT	SRV _u →SK	SRV _u →SK		JUMP: U→RC			SRV _u →SK	SRV _u →SK				IF +.7→OED	3
24	SU													
25	SV	(U)→RA	(U)→RD	(U)→BTB	↓	—	—	(U)→RA	(U)→RA	PROBE SAR	PROBE SAR TR. SW. DEM'D OUT 7→OED	PROBE SAR TR. SW. NO.7→OED	↓	4
26	SW													
27	SP	V→SAR	SHIFT (RD)	↓	INHIBIT PAK ADVANCE W→PAK	—	—	SHIFT (RA)	V→SAR	INHIBIT PAK ADVANCE V OR W→PAK	INHIBIT PAK ADVANCE W→PAK	INHIBIT PAK ADVANCE W→PAK	INHIBIT PAK ADVANCE U,V, OR W →PAK	5
29	SZ	SHIFT (RA)												
31	LA	(V)→RB	SRV _v →SK	↓	↓	—	—	(V)→RB	(V)→RB	↓	↓	↓	↓	6
32	LS	SRV _v →SK						SRV _v →SK	SRV _v →SK					
33	CC	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	PAK→SAR	ADVANCE PAK	ADVANCE PAK	ADVANCE PAK	7
34	TD	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR	PAK→SAR		PAK→SAR	PAK→SAR	PAK→SAR	7
35	LN													
37	CP	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	LOAD IRV _n	8
39	TI	SRV _w →SK	SRV _w →SK					SRV _w →SK	SRV _w →SK					
41	UJ	PROCESS						PROCESS	PROCESS					
42	MK	W→SAR	W→SAR	W→SAR	JUMP: V→SAR	W→SAR	FORCE SET SAR TO 995 OR 998	W→SAR	I2→OED	I2→OED	V→SAR	I2→OED	I2→OED	9
43	ML	SHIFT (RD)	SHIFT (RD)					SHIFT (RD)						
44	MU													
45	DE	RESULT→W	R→W	R→W	JUMP: (RC)→W OF (V)	Δ'S→W	(IRV _c)→ SSAR OR SR _v	R→W	—	—	C→I/O CONTROL	—	—	10
48	DQ													
49	DR	x OR + CHECK	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
		END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	END PROG. STEP	12
		SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	SUBINST.	13

UFC-1 OPERATION ENABLE DISTRIBUTOR (OED) CYCLE

MAGNETIC TAPE UNIT INSTRUCTIONS		
INSTRUCTION	C→I/O	V ADDRESS CODE
READ FORWARD	A	556
SEARCH FORWARD =	B	557
SEARCH FORWARD = OR>	AB	558
WIND FORWARD WITH INTERLOCK	AC	552
WRITE	BC	553
WRITE & CHECK	ABC	554
TRANSFER BUFFER TO TRACK	D	565
READ BACKWARD	AD	566
SEARCH FORWARD =	BD	567
SEARCH BACKWARD = OR<	ABD	568
REWIND	DC	569
REWIND WITH INTERLOCK	ADC	562
TRANSFER TRACK TO BUFFER	ABCD	564

SORTING-COLLATOR COMPUTER ALERT OPERATION			
COMPUTER ALERT	HSCL	COMPUTER ALERT	HSCL
1	Z	9	WZ
2	Y	10	WY
3	YZ	11	WYZ
4	X	12	WX
5	XZ	13	WXZ
6	XY	14	WXY
7	XYZ	15	WXYZ
8	W		

INQUIRY TYPEWRITER INSTRUCTIONS		
INSTRUCTION	C→I/O	V ADDRESS CODE
INPUT	A	556
AUTOMATIC INPUT	AC	552
OUTPUT	B	557
AUTOMATIC OUTPUT	BC	553