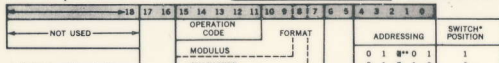
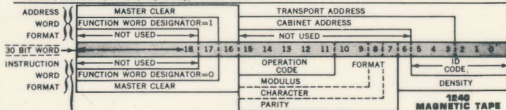


OPERATION CODES

CODE	OPERATION	
	1540/1541	1240
0000	Read (Read Forward)	Read
0001	Read Selective (Selective Read Forward)	Read Selective
0010	Read Modified Stop	Read Ignore Error Halt
0011	Space File	Space File
0100	Search Type I	Search Type I
0101	Search Type II	Search Type II
0110	Search File Type I	Search File Type I
0111	Search File Type II	Search File Type II
0100	Write	Write
0101	Write XIRG	Write XIRG
0110	Write Ignore Error Halt	Write Ignore Error Halt
0111	Write XIRG Ignore Error Halt	Write XIRG Ignore Error Halt
0110	Write Modified Stop	Write Tape Mark
0110	Write Edit	Write Tape Mark, XIRG
0111	Write Tape Mark	Write Tape Mark, XIRG
0111	Write Tape Mark, XIRG	
1000	Backread (Read Backward)	Backspace
1001	Backread Selective (Selective Read-Backward)	Backspace
1001	Backread Modified Stop	Backspace Read
1001	Backspace File	Backspace File
1010	Backsearch Type I	Backsearch Type I
1010	Backsearch Type II	Backsearch Type II
1011	Backsearch File Type I	Backsearch File Type I
1011	Backsearch File Type II	Backsearch File Type II
1100	Rewind	Rewind
1101	Rewind, Clear Write Enable	Rewind, Clear Write Enable
1101	Rewind, Clear Write Enable	Rewind
1100	Rewind-Read	Rewind, Clear Write Enable
1101	Rewind-Read, Clear Write Enable	Rewind-Read
1110	Rewind-Read	Rewind-Read, Clear Write Enable
1111	Rewind-Read	Rewind-Read
1111	Request Transport Status	

Bits 17, 16 and 6=1, 0 and 1, respectively, transmit Extra



*Indicates position of address switch on each tape transport

**0=zero or one

DUPLICATE CONTROL CODE		BIAS	
NONDUPLICATE	0 0	0 0 0 0	Normal Bias
RELEASE CONTROL	0 1	0 1 0 0	Force Low Bias
REQUEST CONTROL	1 0	1 0 0 0	Force High Bias
DEMAND CONTROL (Master Clear)	1 1	1 1 0 0	Force Low Bias
TRANSMIT EXTRA	1 0	1 0 1 0	

**1840/1841
MAGNETIC TAPE**

UNIVAC 1218 COMPUTER REPERTOIRE OF INSTRUCTIONS

INSTRUCTION WORD FORMAT: I 17-4-12 11-u-0
II 17-4-12 11-m-6 5-k-0

Code (Decimal)	m	TRIM SYMBOL	INSTRUCTION	DESCRIPTION	TIME μ SEC.
#02*		CMAL	Compare and set designator	(AL)-(Y); (AL) ₁ -(AL) ₂	8
#06*		CMSK	Comp. with mask and set des.	L(AL)(AU)-L(Y)(AU); (A) ₁ -(A) ₂	8
#04*		SLSU	Selective substitute	L(AU)(AL)-L(AU)(Y) \rightarrow AL; (AU) ₁ -(AU) ₂	8
#10*		ENTAU	Enter AU with (Y)	(Y) \rightarrow AU	8
#12*		ENTAL	Enter AL with (Y)	(Y) \rightarrow AL	8
#14*		ADDA	Add (Y) to (AL)	(AL) ₁ -(Y) \rightarrow AL	8
#16*		SUBAL	Subtract (Y) from (AL)	(AL) ₁ -(Y) \rightarrow AL	8
#20*		ADDA	Add (Y+1, Y) to (A)	(A) ₁ -(Y+1, Y) \rightarrow A	12
#22*		SUBA	Subtract (Y+1, Y) from (A)	(A) ₁ -(Y+1, Y) \rightarrow A	12
#24*		MULAL	Multiply (AL) by (Y)	(AL) ₁ (Y) \rightarrow A	26-48-67
#26*		DIVA	Divide (A) by (Y)	(A) ₁ -(Y); Quot \rightarrow AL, Rem \rightarrow AU	48
30*		IRJP	Indirect return jump	(P) ₁ -1 \rightarrow (Y); (Y) ₁ -1 \rightarrow P (See Note 2)	12
#32*		ENTB	Enter B with (Y)	(Y) \rightarrow B	12
34*		JP	Unconditional jump	Y \rightarrow P	4
36*		ENTBK	Enter B with constant	Y \rightarrow B (See Note 1)	8
37		ENTBRB	Modify (B) with constant	(B) ₁ -Y \rightarrow B (See Note 1)	12
#40*		CL	Store zero (clear Y)	0 \rightarrow Y	8
#42*		STRB	Store (B) in Y	(B) \rightarrow Y	12
#44*		STRAL	Store (AL) in Y	(AL) \rightarrow Y	8
#46*		STRAU	Store (AU) in Y	(AU) \rightarrow Y	8
51		SLEST	Selective set (incl. or)	(AL) ₁ (Y) \rightarrow AL; set AL ₁ for (Y) ₁ -1	8
52		SLCL	Selective clear (log. prod)	L(AL) ₁ (Y) \rightarrow AL; clear AL ₁ for (Y) ₁ -0	8
53		SLEPC	Selective compl (excl. or)	(AL) ₁ (Y) \rightarrow AL; complement (AL) ₁ for (Y) ₁ -1	8
54		IJPEI	Ind. jump and enable int.	(Y) \rightarrow P; enable interrupts	8
55		IJP	Indirect jump	(Y) \rightarrow P	8
56		BSK	B skip	{ if (B) ₁ -(Y) ₁ , skip NI { if (B) ₁ =(Y) ₁ , (B) ₁ -1 \rightarrow B, read NI	16

#Y₁-12 from SR_{2,0} if SR active, i.e., (SR)₁-1; otherwise from P₁₄-12.

*In listed instruction, Y₁-Y₂ for the equivalent B indexed instruction, i.e., Y₁-Y₂(B)₁(X); suffix trim symbol with the letter "B", add "1" to the function code, f, and add 4 μ sec. to the execution time.

Y₁-Y₂ or Y₁(B)₁(X)
y₁-y₂ or y₁(B)₁(X)

UNIVAC 1218 COMPUTER
REPERTOIRE OF INSTRUCTIONS

Code (Octal) f	m	TRIM SYMBOL	INSTRUCTION	DESCRIPTION	TIME /sec
50	11	IN	Input transfer	((P) 1)→60 2k; ((P) 2)→61 2k; set input active	20
50	12	OUT	Output transfer	((P) 1)→40 2k; ((P) 2)→41 2k; set output active	20
50	13	EXF	Ext. funct. transfer	((P) 1)→20 2k; ((P) 2)→21 2k; set ext. func. active	20
50	15	INSTP	Terminate input	Clear input active, channel k	4
50	16	OUTSTP	Terminate output	Clear output active, channel k	4
50	17	EXFSTP	Terminate ext. funct.	Clear function active, channel k	4
50	20	SRSM	Set resume	Set the resume designator (intercomputer)	4
50	21	SKPIN	Skip on input inactive	Skip NI if chan. k input is inactive	4.67
50	22	SKPOIN	Skip on output inactive	Skip NI if chan. k output is inactive	
50	23	SKPEIN	Skip on ext. funct. inactive	Skip NI if chan. k ext. funct. is inactive	4.67
50	24	WTFI	Wait for interrupt	Stop; then interrupt entrance reg. for NI	
50	26	OUTOV	Output override	Force one word out channel k with output ack.	4.67
50	27	EXFOV	External function override	Force one word out channel k with ext. funct.	4.67
50	30	RIL	Remove interrupt lockout	Enable all interrupts	4
50	32	RXL	Remove ext. int. lockout	Enable external interrupts	4
50	34	SIL	Set interrupt lockout	Disable all interrupts	4
50	36	SXL	Set ext. int. lockout	Disable external interrupts	4
50	41	RSHAU	Right shift (AU)	Shift (AU) right by k; sign fill	5.33
50	42	RSHAL	Right shift (AL)	Shift (AL) right by k; sign fill	
50	43	RSA	Right shift (A)	Shift (A) right by k; sign fill	2k 3
50	44	SF	Scale factor shift	Shift (A) left, with sign fill, until (A) ₁₅ ≠(A) ₁₄ or [k-shiftcount]→0; [k-shiftcount]→0007	
50	45	LSHAU	Left shift (AU)	Cyclic shift (AU) left by k	5.33
50	46	LSHAL	Left shift (AL)	Cyclic shift (AL) left by k	
50	47	LSA	Left shift (A)	Cyclic shift (A) left by k	2k 3
50	50	SKP	Skip on key setting	Skip NI if k-console key setting	
50	51	SKPNB0	Skip on no borrow	Skip NI if borrow designator not set	
50	52	SKPOV	Skip on overflow	Skip NI if overflow designator set	
50	53	SKPN0V	Skip on no overflow	Skip NI if overflow designator not set	4.67 6
50	54	SKPODD	Skip on odd parity	Skip NI if sum of ones in L(AU)(AL) is odd	
50	55	SKPEVN	Skip on even parity	Skip NI if sum of ones in L(AU)(AL) is even	
50	56	STOP	Stop on key setting	Stop if k-console key setting	4.67
50	57	SKPNR	Skip on no resume	Skip NI if resume designator is not set	4.67 6
50	60	RND	Round AU	If (A) ₀ (AU) (AL) ₁ →AL, (AU) ₁ (AU); If (A) ₀ (AU) Compl (AL) ₁ →AL, (AU) ₁ (AU).	
50	61	CPAL	Complement (AL)	(AL) ₁ →AL	5.33
50	62	CPAU	Complement (AU)	(AU) ₁ →AU	5.33
50	63	CPA	Complement (A)	(A) ₁ →A	5.33
50	72	ENTICR	Enter Index Control Reg.	k ₀ →ICR	4
50	73	ENTSR	Enter Special Register	k ₀ →SR	4

UNIVAC 1218 COMPUTER
REPERTOIRE OF INSTRUCTIONS

Code (Octal) f	m	TRIM SYMBOL	INSTRUCTION	DESCRIPTION	TIME /sec
57		ISK	Index skip	If (Y) ₀ skip NI If (Y) ₀ ≠0, (Y) ₁ →Y, read dl	12
				Jump to Y, i.e., Y→P, if comparison designator is ① or ② as follows: ① not set, and SYMBOL ② set (See Note 3), and	
60		JPAUZ	(AU) ₀	M = (Y) of last compare instruction M = (AL) if last compare instruction was an 02 or an 03. M = L(AU)(AL) if last compare instruction was an 06 or an 07.	4
61		JPALZ	(AL) ₀		
62		JPAUNZ	(AU)≠0		
63		JPALNZ	(AL)≠0		
64		JPAUP	(AU) positive		
65		JPALP	(AL) positive		
66		JPAUNG	(AU) negative		
67		JPALNG	(AL) negative		
70		ENTALK	Enter AL with constant	Y→AL (See Note 1)	4.67
71		ADDALK	Add constant to (AL)	(AL) ₁ →Y ₀ ; (See Note 1)	4.67
72		STRICR	Store (ICR) in Y _k	(ICR) ₁ →Y ₂ ; Y ₁₇₋₄ unchanged; if (ICR)≠0, 000→Y ₅ ; if (ICR) ₁ →0, 001→Y ₅	8
73		BJP	B jump	If (B) ₀ ≠0, (B) ₁ →B, Y→P If (B) ₀ , read NI	12
74		STRADR	Store address in Y _k	(AL) ₁ →Y ₁₂ ; (Y) ₁₇₋₁₂ unchanged	8
75		STRSR	Store (SR) in Y _k	(SR) ₁ →Y ₅ ; 0→Y ₅ ; (Y) ₁₇₋₄ unchanged; 0→SR ₃	8
76		RJP	Return jump	(P) ₁ →Y; Y ₁ →P (See Note 2)	8

NOTES: 1. For f-36, 37, 70, or 71, y-u extended with sign to 18 bits.

2. Store (P) rather than (P)-1 if return jump is executed from Interrupt Entrance Registers.

3. Comparison designator is set by a "compare" instruction, is unaffected by a "conditional jump" instruction, and is cleared by any other instruction.

SPECIAL ADDRESSES

000	Fault entrance register	060-077	Input buffer control
001-0010	Index registers	100-117	External interrupt entrance
016	Synchronization interrupt entrance	120-137	Ext. funct. termination interrupt
017	Scale factor shift count	140-157	Output termination interrupt
020-037	External function buffer control	160-177	Input termination interrupt
040-057	Output buffer control	200-237	Bootstrap program

I/O CONSOLE FUNCTION WORD FORMAT

