Program Number: J2-106
April 24, 1959

DATA INPUT 13

TITLE: 6-Bit Floating Point Data Input Routine

AUTHOR: R.A. Koenig, National Lead Company
South Amboy, New Jersey

ABSTRACT:

This 5-track routine for use with ERFP Format No. 2 will read in decimal numbers in 6-bit mode with the decimal point properly placed. The input consists of 9 decimal digits, plus the decimal point (and the minus sign, if negative) input as two 5-character words. If negative, the minus sign is included as a sixth character in the first word. There is no limitation as to the decimal point except that it lie within the permissible range of the ten characters. Accuracy of conversion is assured by a pre-scaling normalization of the numbers, thus permitting any relative position of the decimal point. The instructional words, "Group" and "Exit" have the same meaning as in Program 11.5. The output of the program is the number in floating point form stored in memory in two consecutive locations -- the first for the fraction and the second for the exponent.

A last minute addition to the program makes an automatic test for the position of the six-bit button. If not depressed, the program will refuse to continue.

DISCLAIMER:

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Program Number: J2-106
April 24, 1959

Title: 6-Bit Floating Point Data Input Routine

Author: R.A. Koenig, National Lead Company

Function:

The function of this routine is to input, convert, and store nine decimal digit numbers in proper floating point form of ERFP Format No. 2. To allow for direct placing of the decimal point, the six-bit input mode is used. This routine is compatible with ERFP Format No. 2 and can be used to replace Subroutine No. 11.5 if Format No. 2 is used.

Calling Sequence:

To use this routine, the following changes must be made to the ERFP routine (Prog. 24.1).

Location	New Contents
0900	Y 1560
0901	U 1446

This routine will not affect the contents of the floating point accumulator.

NOTE: If it is desired to take advantage of the two additional tracks available for data storage (this routine occupies five tracks as compared to seven tracks for Program No. 11.5), the following additional changes should be made to Program 24.1

Location	New Contents
0732	R 1847
0733	U 1663

Loading Sequence:

This program must be loaded as follows:

	Start Fill	Set Modifier
24.1 6-Bit Input	Lo Lo + 1100	Lo Lo + 1100

Input:

Three types of words are used by this routine.

a. Initial address.
b. First half of number or "group" and "exit" instructional words.
c. Second half of number.

The initial address word is a 4-digit decimal address at which sequential storage is to begin. Sequential storing will continue until either an "EXIT" or "GROUP" word appears in the first half of the number.

The first half of the word can contain the following:

a. "EXIT" - The reading of the word "EXIT" will cause a carriage return to be executed and the routine to return to the next sequential interpretative order following the I0000 order.

b. "GROUP" - The reading of the word "GROUP" will cause the routine to read a new initial address word.

c. First half of number - The first half of a number can consist of five or less "acceptable" characters plus the minus sign if the number is negative. An "acceptable" character is defined as a decimal digit or the decimal point itself. If the number is positive, the positive sign must not be used. In the event that the number is negative, leading zeroes must be supplied. (See examples below.)

The second half of the word consists of five or less acceptable characters, as defined above.

Data Tape Preparation:

Any number containing nine decimal digits, plus the decimal point (and with a minus sign, if negative), is acceptable. These ten acceptable characters are read in two 5-character words.

Example: It is desired to place the following numbers into the specified locations.

Number	0.0	0.1435	768.976456	-0.000465712	100.0	100,000,000
Location	6200	6202	6204	6206	6220	6230

12.35	-4.0	.000000001	-60.00
6232	6234	6236	6250

DATA LOAD SHEET

Address Word	Stop	±	First Word	Stop	Second Word	Stop	
6200	'			'		'	
			.1435	'		/	
			768.9	'	76456	'	
		−	.0004	'	65712	'	
			GROUP	'			(Read New Address)
6220	'			'	100.	'	
			GROUP	'			(Read New Address)
6230	'		10000	'	0000.	'	
				'	12.35	'	
		−	4.000	'		'	
			.0000	'	00001	'	
			GROUP	'			(Read New Address)
6250	'	−	60.00	'		'	
			EXIT	'			(End of Input)

Note: Words consisting of all zeroes need not be punched. A Stop Code is sufficient. The number zero can be input by using two Stop Codes.

It is immaterial to the accuracy of conversion as to the relative position of the decimal point. For example, the number 12.34 can be punched in any of the following ways.

12.34' ' 12.3'40000' 12.'34000' 12'.3400'

1'2.340' '12.34'

Similarly -12.34 can be punched as:

-12.34' ' -012.3'40000' -0012.'34000' -00012'.34000'

-00001'2.340' -00000'12.34'

Note that leading zeroes must be supplied for the negative situation.

Special Notes:

If the number consists of five or less characters (4 digits plus decimal point), the routine will load faster if these are in entirely the first word. The reason for this is discussed in the section on conversion method used.

Storage:

5 tracks of instructions and constants.
The following sectors of Track 63 are used as temporary storage.
00, 01, 02, 04, 05, 06, 07, 08, 10, 20, 21, 22, 27, 31, 32, 35, 37, 40, 43, 44, 47, 50, 63.

Time: Approximately 30 words/minute.

Accuracy: Integers are converted exactly.
Fractional numbers will be in error by less than 1 in the 29th bit regardless of relative position of decimal point.

Method of Conversion:

To guarantee maximum accuracy in conversion of the number, a normalizing operation is used. After binarization at q = 30 is completed, a normalizing loop is entered (provided $N \neq 0$). Since N is a nine-digit number is must be $< 10^{10}$. The normalizing routine scales N such that $8 \times 10^7 \leq N < 10^{10}$, counting the number of multiplying shifts (by 10 at 31) required to do this. Call the number of left shifts R and the resulting shifted number N^*. Having already determined P ($0 \leq P \leq 9$), N^* is scaled by two successive divide operations -- one to account for P, the decimal point location and the other to account for the R shifts. By this method, therefore, a number such as 0.1 will be accurately converted regardless of the position of the "." and "1" within the two words. If the significant characters are all placed in the first word, the R loop will not require as many iterations; hence the routine will require less time than if the significant characters are all placed in the second word. All numbers are standardized prior to storage. The number zero is represented as zero fraction and zero exponent.

Special Applications:

This routine also contains a special one word fill that leaves the fractional part of the number in Lo and the exponent (at 29) in Lo + 1. This can not be used in conjunction with ERFP system.

The calling sequence for single word fill is:

R0460

U0461

Using this mode operation, only the two halves of the number are used as input. Upon completion of storing the fraction in Lo and exponent in Lo + 1 the routine will exit.

Program Stops

0244 6-bit button not depressed. Depress 6-bit button and press start to continue.

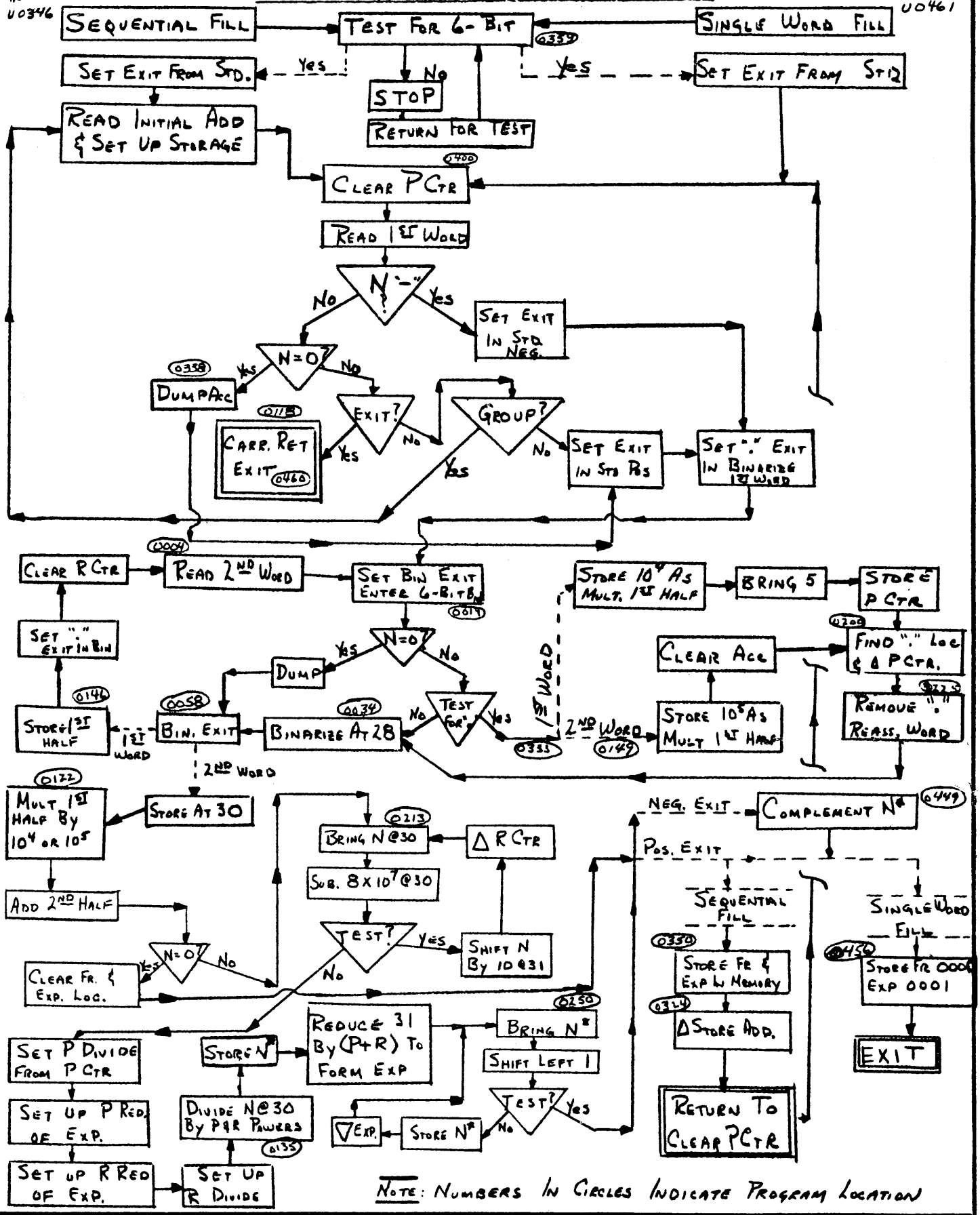
Addenda

A programmed check for depression of 6-bit button has been included in the program. The effect of this is to give a dummy print order followed by an I0000 and testing the amount of shifting caused by the I order. (This was adopted per a suggestion from J. Rayna of Lehigh University.) All necessary changes have been made in the coding sheets and tape copies.

FLOWCHART — 6 BIT F.P. INPUT

R0460 U0346

R0460 U0461



NOTE: NUMBERS IN CIRCLES INDICATE PROGRAM LOCATION

FLOWCHART - 6-BIT FLOATING POINT DATA INPUT FOR ERFP FORMAT No. 2	TECHNICAL DEPARTMENT NATIONAL LEAD COMPANY TITANIUM DIVISION SAYREVILLE, N. J.	SCALE DATE APRIL 27, 1959 CHARGE DRAWN BY R.A. KOENIG APPROVED BY	FIG. NO.

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JOB NO. | PROGRAM NO. J2-106 | PROGRAM PREPARED BY: R.A. Koenig | PROGRAM CHECKED BY: POOL Review | DATE 2-9-59

PROBLEM: 6-Bit F.P. Input (ERFP Format 2) | TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
,0000004	!	0000	[	]	/	Fr }	Word stored in
		0001	[	]	/	Exp@ 29 }	single fill mode
		0002	12J	Q8KF	/	"Exit" 6-Bit in 4 bit	(0337)
		0003			/	☒	
		0004	XC	6347	/	R Ctr	
		0005	XP	0020	/	} Read 2nd word	
		0006	XI	0000	/	}	
		0007	N	0436	/	☒ 1@ 30	Shift Left
		0008	R	0058	/	}	
		0009	U	0019	/	} →Enter 6-Bit Binarize	
		0010	M	0060	/	1@ 2	
		0011	XH	6340	/	☒ Store lower half	
		0012	U	0122	/	→Assemble Word	
,0000006	!	0013		7J	/	31@ 29	(0148)
		0014			/		
		0015		9J4	/	☒ 10,000 @	33 (0150)
		0016	8320	0000	/	-3996 @12	(0044)
		0017	8013	8800	/	-16,677,216 @ 24	(0052)
		0018	7907	9078	/	Mask	(0032)
		0019	XH	6305	/	☒ N in 6-Bit	Enter 6-Bit Binarize
		0020	S	0163	/	1@ 30	
		0021	T	0322	/	→N = 0	
		0022	A	0037	/	1@ 30	
		0023	E	0059	/	☒ 2082082	Save only 6th channels
		0024	S	0046	/	1@ 30	
		0025	T	0032	/	→No "." in word	
		0026	U	0332	/	→To dec. Pt.	Exit
,0000005	!	0027	420	J400	/	☒ 1@ 5 + 2@ 11 + 3@ 17 + 4@ 23	(0155)
		0028			/		
		0029	3W	8000	/	Mask	(0043)
		0030	7J00	0000	/	Mask	(0051)
		0031		14	/	☒ 5@ 29	(0116)

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ROYAL McBEE J13841X

☒ CARRIAGE RETURN

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	J2-106	R.A. Koenig	POOL Review	2-9-59

PROBLEM: 6-Bit F.P. Input (ERFP Format 2)

TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0032	B	0018	/	79Q79Q78	
		33	XE	63 05	/	N in 6-bit	Trim To BCD
		34	XH	6306	/	N_1	
		35	U	0039	/	☒	
,000 0003	/	36	12J	Q8K8	/	"Exit" -1 @ 30	
		37		2	/	1 @ 30	(0022)
		38		2	/	1 @ 30	(0409)
		39	E	0161	/	☒ 1Q01Q00	
		40	M	0162	/	-54 @ 6	
		41	XA	6306	/	N_1	
		42	XH	6307	/	N_2	
		43	E	0029	/	☒ 3W8000	
		44	M	0016	/	-3996 @ 12	
		45	U	0049	/		
,000 0003	/	46		2	/	1 @ 30	(0024)(0403)
		47		10	/	☒ 4 @29	(0204)
		48		2	/	1 @ 30	(0126)(0405)
		49	XA	6307	/	N_2	
		50	XH	6308	/	N_3	
		51	E	0030	/	☒ 7J000000	
		52	M	0017	/	-16,677,216 @ 24	
		53	U	0057	/		
,000 0013	/	54		2	/	1 @ 30	(0232)
		55	W3	JW3J	/	☒ Mask	(0240)
		56		4	/	1 @ 29	(0327)
		57	A	3w20	/	N_3	XA6308 in hex
		58	U	[ ]	/	Exit from binarize	
		59	Z08	2082	/	☒ 6 bit mask	(0023)
		60	2000	0000	/	1 @ 2	(0010)
		61	W	J000	/	Mask	(0318)
		62	8200	0000	/	- 63/64 @ 0	(0319)
		63	200	0000	/	☒ 1@ 6	(0227)

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PROBLEM: 6-Bit F.P. Input (ERFP Format 2) | TRACK 01

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0100		61F8	/	100,000 @ 33	(0114)
		0101	9491	6800	/	8 x 10^7 @ 30	(0215)
		0102			/		
		0103	E	0132	/	☒ W00W00	Continue Add Bin.
		0104	M	0133	/	-54 @ 6	
		0105	XA	6327	/	N1	
		0106	U	0313	/		
		0107	E	0129	/	☒ 7WWWWWWQ	Drop Sign Here: N Neg
		0108	R	0058	/	Set up Exit in Bin.	
		0109	U	0111	/		
		0110	U	0146	/		
		0111	R	0333	/	☒ Set Up "."	in 1st word
		0112	U	0019	/	→ Enter 6 bit bin.	
		0113	XH	6335	/	Dec. Pt. Loc	Here "." in 1st word
		0114	B	0100	/	100,000 @ 33	
		0115	XC	6337	/	☒ M1	
		0116	B	0031	/	5 @ 29	
		0117	U	0152	/		
		0118	XP	1604	/	C.R.	Here to Exit
		0119	U	0460	/	☒	
		0120	XP	1600	/	Carr. Ret.	Here: 4-bit mode
		0121	U	0207	/		
		0122	XB	6337	/	M1 ≤ 100,000 @ 33 / 10,000 @ 33	Here: assemble word
		0123	U	0124	/	☒	
		0124	XN	6332	/	1st word @ 28	Shift to q = 30
		0125	XA	6340	/	2nd word @ 30	
		0126	S	0048	/	1 @ 30	
		0127	T	0341	/	☒ → N = 0	
		0128	U	0213	/	→ To normalize	
,0000 0006	/	0129	7WWW	WWWQ	/	Mask	(0107)
		0130		28	/	10 @ 29	(0308)
		0131		28	/	☒ 10 @ 29	(0302)

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PROBLEM: 6-Bit F.P. Input (ERFP Format 2) | TRACK

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0132	W	0W00	/	Mask	(0103)
		33	9400	0000	/	-54 @ 6	(0104)
		34		4	/	1 @ 29	(0219)
		35	XB	6350	/	☒ N @ 30	
		36	M	0315	/	1 @ 1	
		37	D	[ ]	/	P Divide	
		38	D	[ ]	/	R Divide	
		39	U	0140	/	☒	
		40	XC	6322	/	N*	
		41	B	0013	/	31 @ 29	
		42	S	[ ]	/	q for R Shifts	
		43	U	0246	/	☒	
		44			/		
		45	XC	6331	/	Here if word 1 = 0	(0406)
		46	XC	6332	/	Store 1st word Bin. @ 28	(0110)
		47	R	0333	/	☒ Set Exit for "." in 2nd word	
		48	U	0004	/	→ Read 2nd Word	
		49	XH	6335	/	Dec. Pt.	Here "." in 2nd word
		50	B	0015	/	10,000 @ 33	
		51	XC	6337	/	☒ M_1	
		52	XC	6310	/	P Ctr (Temp)	
		53	U	0155	/		
		54			/		
		55	B	0027	/	☒ 420J400 1@ 5 + 2@11 + 3@17 +4 @ 23	
		56	XM	6335	/	Dec. Pt.	
		57	E	0243	/	XZ0007	Save Loc.@ 29
		58	XH	6344	/	Dec. Pt. Loc.	
		59	XA	6310	/	☒ Temp P Ctr	
		60	U	0200	/		
,0000 0003	'	61	1Q0	1Q00	/	Mask	(0039)
		62	9400	0000	/	-54 @ 6	(0040)
		63		2	/	☒ 1 @ 30	(0020)(0213)

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PROBLEM:				TRACK	
6-Bit F.P. Input (ERFP Format 2)				02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0200	XC	6343	/	P Ctr.	
		01	XB	6344	/	Dec. Pt. Loc.	
		02	A	0224	/	(Z0437) Lo	Mask #2 table
		03	Y	0225	/	☒ Set Mask	# 2
		04	A	0047	/	4 @ 29	
		05	Y	0234	/	Set Mask #	1
		06	U	0225	/		
		07	XZ	0022	/	☒ Delay	
		08	XP	2623	/	"6"	
		09	U	0230	/		
		10	R	0253	/		Here: N Neg
		11	U	0107	/	☒	
		12	U	0449	/		
		13	A	0163	/	1 @ 30	Enter Normalize
		14	XH	6350	/		
		15	S	0101	/	☒ 8×10^7 @	30
		16	T	0218	/	→N not normalized	
		17	U	0263	/	→N normalized	
		18	XB	6347	/	R Ctr	
		19	A	0134	/	☒ 1 @ 29	
		20	XH	6347	/	R Ctr	
		21	XB	6350	/	n @ 30	
		22	N	0230	/	10 @ 31	
		23	U	0214	/	☒	
		24	Z	0437	/	Lo Mask Table	(0202)
		25	B	[ ]	/	Mask# 2	
		26	XE	6305	/	N	
		27	M	0063	/	☒ 1 @ 6	
		28	XH	6307	/	Save L.H. Portion	
		29	U	0233	/		
,000 0002	'	30		F	/	10 @ 31	Delay & (0222)
		31	8	070J	/	☒ "-"	

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PROBLEM: 6-Bit F.P. Input (ERFP Format 2) | TRACK 02

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0232	U	0315	/		
		33	XB	6305	/	N	
		34	E	[ ]	/	Save R.H. Portion	
		35	XA	6307	/	☒ L.H. Portion	
		36	U	0034	/	→ Return to Bin.	
		37	XC	6302	/		
		38	XP	0003	/	} Read Add.	
		39	XI	0004	/	☒ }	
		40	E	0055	/	W3JW3J Trim to BCD	
		41	XH	6327	/		
		42	U	0103	/		
		43	XZ	0007	/	☒ Mask	Delay (0157)
		44	XZ	0000	/	Stop: 6-Bit not down	
		45	U	0359	/	→ Test 6-bit again	
		46	S	[ ]	/	q from P shifts	
		47	U	0249	/	☒	
		48	Z	0424	/	Lo q table	(0305)
		49	XH	6321	/	q @ 29	
		50	XB	6322	/	N*	
		51	N	0259	/	☒ 1 @ 30	Shift Left
		52	U	0253	/		
		53	T	[ ]	/	→ N Standardized Exit ~~Pos~~ Neg	
		54	XC	6322	/	N*	
		55	S	0134	/	☒ 1 @ 29	
		56	XA	6321	/	q @ 29	
		57	U	0249	/	→ Return	
0.0000005	1	58	5G3W	8GQ8	/	"Group"-	"Exit" (0336)
		59		2	/	☒ 1 @ 30	(0251)
		60			/		
		61	5G3W	8GQ6	/	"Group"-	"Exit" - 1 @ 30 (0411)
		62			/		
		63	B	0335	/	☒ (Z0414)	Lo 10^k Table

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ROYAL MCBEE J13541X

☒ CARRIAGE RETURN

/ = CONDITIONAL STOP CODE

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PROBLEM: 6-Bit F.P. Input (ERFP Format 2)

TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0300	XA	6343	/	P Ctr	
		01	Y	0137	/	Set "P" Divide	
		02	A	0131	/	(XZ0010)	
		03	Y	0246	/	☒ Set Up "P"	Shift of q
		04	XB	6347	/	R Ctr	
		05	A	0248	/	Lo q table	(Z0424)
		06	Y	0142	/	Set Up "R"	adj of q
		07	U	0308	/	☒	
		08	S	0130	/	(XZ0010)	Generate Add of R Divide
		09	Y	0138	/	Set "R" Divide	
		10	U	0135	/	→ Convert N to N*	
		11	XZ	0001	/	☒ 1 @ 29	(0325)
		12			/		
		13	XH	6363	/	N_2	Add Bin (0106)
		14	U	0318	/		
,0000002	1	15	4000	0000	/	☒ 1 @ 1	Delay (0136)
		16	8	0508	/	"B"	
		17	U	0243	/		
		18	E	0061	/	WJ000	
		19	M	0062	/	☒ -63/64 @	0
		20	XA	6363	/	N_2	Add Bin. @29
		21	U	0326	/		
		22	XC	6308	/	Dump	Here: N=0 in Bin.
		23	U	0058	/	☒ → To exit from Bin	
		24	B	0357	/	C[ ]	Here: Modify store
		25	A	0311	/	1 @ 29	
		26	Y	0355	/	C[ ] Fr.	
		27	A	0056	/	☒ 1 @ 29	
		28	Y	0357	/	C[ ] Exp.	
		29	XC	6301	/	Dump	
		30	U	0400	/	→ RW 1	
		31			/	☒	

☒ CARRIAGE RETURN

/ = CONDITIONAL STOP CODE

FORM LP-10

ROYAL McBEE J13841X

Royal McBee Corporation
DATA PROCESSING DIV.
PORT CHESTER, NEW YORK

PREPARED FOR:				PAGE 8 OF 10
LGP-30 RPC-4000 USERS' ORGANIZATION - POOL				
JOB NO.	PROGRAM NO. J2-106	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 2-9-59
PROBLEM: 6-Bit F.P. Input (ERFP Format 2)				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	'						
	'	☒					
		0332	A	0054	'	1 @ 30	
		33	U	[ ]	'	Exit from Bin. with Dec. Pt.	
		34			'		
		35	Z	0414	'	☒ Lo 10^k table	(0263)
		36	A	0258	'	"Group"-"Exit"- 1 @ 30	
		37	A	0002	'	"Exit"	
		38	R	0253	'	Set up ps. exit from standardization	
		39	U	0108	'	☒	
		40	U	[ ]	'	Exit on seq. or single word fill	
		41	XC	6320	'	Dump Here: N=0 after assem.	
		42	XC	6321	'	Exp.	
		43	XC	6322	'	☒ Fr.	
		44	U	0340	'	→ To proper exit	
,000 0001	'	45	800	0000	'	Text word	(0359)
		46	R	0363	'	Enter here sequential fill	
		47	U	0359	'	☒ → To 6-bit test	
		48	R	0340	'	Set exit from word read	
		49	U	0237	'	→ Read Add.	
		50	XB	6322	'	Fraction	
		51	U	0355	'	☒	
		52			'		
		53			'		
		54			'		
		55	C	[ ]	'	☒ Store fr.	
		56	XB	6321	'	Exp.	
		57	C	[ ]	'	Store exp.	
		58	U	0324	'	→ Modify addresses	
		59	B	0345	'	☒ Text Word	
		60	XP	6311	'	Dummy print	
		61	XI	0000	'		
		62	T	0120	'	→ 4-bit mode	
		63	U	[ ]	'	☒ → o.k. on 6-bit	

☒ CARRIAGE RETURN

' = CONDITIONAL STOP CODE

FORM LP-12

PORT CHESTER, NEW YORK

PREPARED FOR: LGP-30 RPC-4000 USERS' ORGANIZATION - POOL

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JOB NO.	PROGRAM NO.	PROGRAM PREPARED BY:	PROGRAM CHECKED BY:	DATE
	J2-106	R.A. Koenig	POOL Review	2-9-59

PROBLEM: 6-Bit F.P. Input (ERFP Format 2)

TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/ ☒						
		0400	XC	6343	/	P Ctr	Here: Read 1st Word
		01	XP	0016	/		
		02	XI	0000	/		
		03	N	0046	/	☒ 1 @ 30	
		04	T	0210	/	→ N Neg.	
		05	S	0048	/	1 @ 30	
		06	T	0338	/	→ N=0	First word
		07	S	0036	/	☒ "Exit"	-1 @ 30
		08	T	0337	/	→ Pos No. <	"Exit"
		09	S	0038	/	1@ 30	
		10	T	0118	/	→ Word = "Exit"	
		11	S	0261	/	☒ "Group"-"Exit"	-1 @ 30
		12	T	0336	/	→ Pos Number	
		13	U	0237	/	→Word= "Group"	Read New Add.
,000 0035		14	7WWW	WWWQ	/	10^0 @ 0	
		15	5000	0000	/	☒ 10^1 @ 4	
		16	6400	0000	/	10^2 @ 7	
		17	7K00	0000	/	10^3 @ 10	
		18	4Q20	0000	/	10^4 @ 14	10^K Table
		19	61F8	0000	/	☒ 10^5 @ 17	
		20	7F12	0000	/	10^6 @ 20	
		21	4J4G	4000	/	10^7 @ 24	
		22	5W5Q	1000	/	10^8 @ 27	
		23	7735	9400	/	☒ 10^9 @ 30	
		24		0	/	0 @ 29	
		25		10	/	4 @ 29	
		26		1J	/	7 @ 29	
		27		28	/	☒ 10@ 29	
		28		38	/	14 @ 29	q Table
		29		44	/	17 @ 29	
		30		50	/	20 @ 29	
		31		60	/	☒ 24 @ 29	

FORM LP-10

ROYAL McBEE, J13841X

☒ CARRIAGE RETURN

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Royal McBee Corporation
DATA PROCESSING DIV.
PORT CHESTER, NEW YORK

PREPARED FOR: LGP-30 RPC-4000 USERS ORGANIZATION - POOL | PAGE 10 / 10

JOB NO.	PROGRAM NO.	PROGRAM PREPARED BY:	PROGRAM CHECKED BY:	DATE
	J2-106	R.A. Koenig	POOL Review	2-9-59

PROBLEM: 6-Bit F.P. Input (ERFP Format 2) | TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION OPERATION	INSTRUCTION ADDRESS	STOP	CONTENTS OF ADDRESS	NOTES
	/						
	/	☒					
		0432		6J	/	27 @ 29	} q table (con't)
		33		78	/	30 @ 29	}
		34			/		
		35		2	/	☒ 1 @ 30	(0020)
		36		2	/	1 @ 30	(0007)
		37	79Q7	9Q00	/		}
		38	79Q7	8000	/		Masks - L.H. Portion
		39	79Q0	0000	/	☒	of word with
		40	7800	0000	/		dec. pt.
		41		0	/		}
		42		78	/		Masks - R.H. Portion
		43		1Q78	/	☒	
		44	7	9Q78	/		
		45	1Q7	9Q78	/		
		46			/		
		47			/	☒	
		48			/		
		49	XC	6300	/		}
		50	XS	6322	/		Complement Neg. N.
		51	XH	6322	/	☒	
		52	U	0340	/	→ To seq. or single word exit	
		53	XC	6304	/	Dump	
		54	R	0340	/		
		55	U	0400	/	☒ → Read 1st word	
		56	XB	6321	/	Expt	
		57	H	0001	/		
		58	XB	6322	/	Fraction	
		59	C	0000	/	☒	
		60	U	[ ]	/	Exit from routine	
		61	R	0363	/	} Here single word fill	
		62	U	0359	/	} 6-Bit test	
		63	U	0453	/	☒ → to continue	

FORM LP-12 ROYAL MCBEE J13541X

☒ CARRIAGE RETURN

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