

KIM-1 BASEBALL

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
				: Scratch and constant			locations.	1
0000				ATBAT	RES	1	Indicates A's or B's half-inning	
0001				INNING	RES	1	Inning number	5
0002				OUTS	RES	1	Number of outs in this half-inning	
0003				BTSWNG	RES	1	Negative from start of pitch till batter swings	
0004				BALL	RES	1	Number of ball's	
0005				STRIKE	RES	1	Number of strikes	
0006				HIT	RES	1	Index (-3 to +3) to type of hit.	
0007				HSPD	RES	1	Half of pitch speed	10
0008				DELAY	RES	1	Windup delay.	
0009				CAUGHT	RES	1	Flag = 1 if foul or popup is caught	
000A				PATPOS	RES	1	Position of the bat in display window.	
000B				PHPTR	RES	1	Pointer to next pitch/hit character to display.	
000C				FLDMSG	RES	6	Message for batter, inning, outs, runners, count.	15
0012				Q	RES	1	Quotient of SWINGTIME / SPEED.	
0013				QT	RES	1	Quotient-increment during HIT DIV.	
0014				RND	RES	6	Table of random numbers generated by RAND.	
001A				RUNNRS	RES	1	Men on base: Bit 3=Home plate; 2=3rd; ...; 0=1st	
001B				SCOREA	RES	1	Player A's score.	20
001C				SCOREB	RES	1	Player B's score.	
001D				SPEED	RES	1	Number of counts for a pitch or hit to stay in each LED.	
001E				EOG	RES	1	End Of Game flag. Cleared in GAMEST; set in BASES	
001F				WINDO	RES	6	Segment-data for LED's.	
0025				YSAY	RES	1	Location for preserving Y-reg during LIGHT S/R.	25
09				SWTIME	EQU	CAUGHT	Counter value at time of swing.	
09				TMP	EQU	CAUGHT	Temporary storage location	
13				WUP	EQU	QT	Position of ball-segment during windup	
0026				POINTR	RES	1	LSH of message-pointer	
0027	00			POINTR+1	DATA	#00	MSB of message-pointer - always page 0.	
27				SEG	EQU	POINTR+1	Blank segment	
0028	08			SEG+1	DATA	#08	Lower segment	
0029	40			SEG+2	DATA	#40	Middle segment	
002A	01			SEG+3	DATA	#01	Upper segment	
002B	01			BATTEN	DATA	#01	Value of BAT-TEN: "Bat" input from: Positive Keyboard ("B"-key) Negative Accessory (MSB of Port A) or Keyboard	35
002C	00			PITCHR	DATA	#00	Value of PITCHR: Port selected by: Positive Keyboard Zero KIM Negative Accessory	40

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
002D	FD			HITTBLC	DATA	\$FD	Foul	1
002E	00				DATA	\$00	Single.	
002F	00				DATA	\$00	Single	
0030	00				DATA	\$00	Single	
0031	FE				DATA	\$FE	Pop up	5
0032	01				DATA	\$01	Double	
0033	FF				DATA	\$FF	Flyout	
0034	02				DATA	\$02	Triple	
0035	03				DATA	\$03	Homer	
0036	A4			HTMSAD	DATA	FOULMS	Addresses of messages for hits.	10
0037	9F				DATA	PPUPMS		
0038	AF				DATA	FLYMS		
0039	B5				DATA	SINGMS		
003A	BB				DATA	DBLMS		
003B	C1				DATA	TRPLMS		
003C	A9				DATA	HRMS		
003D	8D			MCMSAD	DATA	MISSMS	Addresses of "missed"	
003E	87				DATA	CGHTMS	and "caught" messages	
003F	6F			SCMISHD	DATA	SCORMS	Addresses of two-player	20
0040	75				DATA	SCORMS1	and one-player score messages.	
0041	00			RUNSEG	DATA	\$00	No men on base.	
0042	01				DATA	\$01	Man on third.	
0043	40				DATA	\$40	Man on second.	
0044	41				DATA	\$41	Man on second, third.	25
0045	08				DATA	\$08	Man on first.	
0046	09				DATA	\$09	Man on first, third.	
0047	48				DATA	\$48	Man on first, second.	
0048	49				DATA	\$49	Basers loaded.	
								30
								35
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
0049	3A			PITCH1	DATA	\$3A	Slow - - - - - Strikes	1
004A	1A				DATA	\$1A	Fast / (part 1)	
004B	2A				DATA	\$2A	Upcurve /	
004C	2A				DATA	\$2A	Downcurve /	5
004D	25				DATA	\$25	Riser /	
004E	2F				DATA	\$2F	Sinker /	
004F	3A				DATA	\$3A	Slow - - - - - Balls	
0050	1A				DATA	\$1A	Fast / (part 1)	
0051	2A				DATA	\$2A	Upcurve /	
0052	2A				DATA	\$2A	Downcurve /	10
0053	25				DATA	\$25	Riser /	
0054	2F				DATA	\$2F	Sinker /	
0055	20				DATA	\$20	Foul - - - - - Hits	
0056	20				DATA	\$20	Popup / (part 1)	
0057	24				DATA	\$24	Flyout /	15
0058	24				DATA	\$24	Single /	
0059	29				DATA	\$29	Double /	
005A	2E				DATA	\$2E	Triple /	
005B	2F				DATA	\$2F	Homer /	
005C	AA			PITCH2	DATA	\$AA	Slow - - - - - Strikes	20
005D	AA				DATA	\$AA	Fast / (part 2)	
005E	AF				DATA	\$AF	Upcurve /	
005F	A5				DATA	\$A5	Downcurve /	
0060	A9				DATA	\$A9	Riser /	
0061	AB				DATA	\$AB	Sinker /	25
0062	FA				DATA	\$FA	Slow - - - - - Balls	
0063	5A				DATA	\$5A	Fast / (part 2)	
0064	FF				DATA	\$FF	Upcurve /	
0065	55				DATA	\$55	Downcurve /	
0066	F9				DATA	\$F9	Riser /	30
0067	5B				DATA	\$5B	Sinker /	
0068	29				DATA	\$29	Foul - - - - - Hits	
0069	2D				DATA	\$2D	Popup / (part 2)	
006A	2F				DATA	\$2F	Flyout /	
006B	2A				DATA	\$2A	Single /	35
006C	2F				DATA	\$2F	Double /	
006D	2B				DATA	\$2B	Triple /	
006E	2B				DATA	\$2B	Homer /	
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
006F	00	00	'8	SCORMS	CHARL	--to--	Score message for 2 players	1
0072	5C	00	00					
0075	00	00	50	SCORMSI	CHARL	--runs	Score message for 1 player	5
0078	1C	54	6D					
007B	7C	77	38	BALLMS	CHARL	bALL_#	No. of balls	10
007E	38	00	00					
0081	6D	78	50	STRKMS	CHARL	Str_--#	No. of strikes	15
0084	00	00	00					
0087	39	77	3E	CGHTNS	CHAR	CAUGHT	Caught	20
008A	3D	76	78					
008D	37	06	6D	MISSMS	CHAR	MISSED	Missed	25
0090	6D	79	5E					
0093	6E	79	50	YOUTMS	CHAR	yErout	You're out	30
0096	5C	1C	78					
0099	00	00	00	OUTSMS	CHAR	#_out	No. of outs	35
009C	5C	1C	78					
009F	73	3F	73	PUPMS	CHAR	POPUP	Popup	40
00A2	3E	73						
00A4	00	71	3F	FOULMS	CHAR	FOUL	Foul ball	45
00A7	3E	38						
00A9	00	76	3F	HRMS	CHAR	HOMER	Home run	50
00AC	37	79	50					
00AF	71	38	6E	FLYMS	CHAR	FLy out	Fly out	55
00B2	5C	1C	78					
00B5	6D	04	54	SINGMS	CHAR	SING LE	Single	60
00B8	3D	38	79					
00BB	5E	5C	1C	DBLMS	CHAR	double	Double	65
00BE	7C	38	79					
00C1	78	50	04	TRPLMS	CHAR	tri PLE	Triple	70
00C4	73	38	79					
00C7	5E	7C	38	DBPLMS	CHAR	dbl _ PL	Double play	75
00CA	00	73	38					
00CD	63	63	63	ENDDIS	CHAR	000 000	"6-balls" (end-game message)	80
00DD	63	63	63					
							:	85
								90
								95

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ADDR	B1	B2	B3	T	OPCODE	OPAND	COMMENT	LINE
00D3	46	13		WINDUP	LSR	WUP	Pitcher's windup subroutine.	1
00D5	D0	04			BNE	WUPDIS	Continue windup.	
00D7	A9	20			LDA	# \$20	Ball went all the way around,	
00D9	85	13			STA	WUP	reset to start of windup.	
00DB	20	63	01	WUPDIS	JSR	WINCLR	Clear display window.	5
00DE	A5	13			LDA	WUP	Place windup in	
00EO	85	24			STA	WINDO+5	right-hand window cell.	
00E2	A9	30			LDA	# \$30	Place bat in	
00E4	85	1F			STA	WINDO	left-hand window cell.	10
00E6	A0	07			LDY	# \$07	Make seven	
00E8	20	17	01	WUPLP	JSR	LIGHT	passes through display	
00EB	88				DEY		routine to show this	
00EC	D0	FA			BNE	WUPLP	position of ball in windows.	
00EE	60				RTS		Return	15
00EF				PT6	RES	1	Six locations used as	
00F0				PT5	RES	1	temporary storage	
00F1				PT4	RES	1	of the pitch	
00F2				PT3	RES	1	(or the hit)	20
00F3				PT2	RES	1	pattern	
00F4				PT1	RES	1	after unpacking.	
				MSG			MSG Subroutine. Accepts message ADL in Y-reg,	25
							assumes message ADH = (POINTR+1)	
0100	84	26		MSG	STY	POINTR	Set up pointer.	
0102	A0	05			LDY	# 5	Fill the	
0104	B1	26		MFIL	LDA	(POINTR),Y	windows	
0106	99	1F	00		STA	WINDO,Y	with the	
0109	88				DEY		specified	
010A	10	F8			BPL	MFIL	message.	30
010C	A0	C0			LDY	# \$C0	Make a bunch	
010E	20	17	01	SHMSG	JSR	LIGHT	of calls to	
0111	20	17	01		JSR	LIGHT	the	
0114	88				DEY		display	
0115	D0	F7			BNE	SHMSG	routine.	35
							(Then fall through LIGHT one more time for S/I return.)	
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
				;	LIGHT	Subroutine.	Assumes WINDO is set up. Preserves Y-reg.	1
				;			Contains Keyboard sampler (S/R KBG), returns key in A-reg	
0117	84	25		LIGHT	STY	YSAV		
0119	A0	00			LDY	#0		5
011B	A9	7F			LDA	#\$7F		
011D	8D	41	17		STA	PADD		
0120	A2	09			LDX	#9		
0122	84	FC		LITELP	STY	TEMP		
0124	B9	1F	00		LDA	WINDO, Y		
0127	20	4E	1F		JSR	CONVD+6		10
012A	C8				DEY			
012B	C0	06			CPY	#6		
012D	90	F3			BCC	LITELP		
				;	KBG	Subroutine.		
012F	20	3D	1F	KBG	JSR	KEYS		15
0132	20	6A	1F		JSR	GETKEY		
0135	A4	25			LDY	YSAV		
0137	60	EA			RTS	NOP		
				;	SHOWPH	Subroutine. Unpacks Pitch (or Hit) according to X-reg; places speed, 1/2 speed in SPD, HSPD; saves the six segments in PT6 through PT1.		20
0139	85	DB		SHOWPH	STA	PHPTR	Save Pitch/Hit pointer.	
013B	B5	49		SHOWPA	LDA	PITCH1,X	Get first half of Pitch/Hit.	
013D	48	48			PHA	PHA		
013F	29	F8			AND	#\$FB	Unpack speed of ball.	25
0141	EA				NOP		(Change to LSR to double all speeds.)	
0142	85	1D			STA	SPD	Save speed.	
0144	4A				LSR			
0145	25	07			STA	HSPD	Save half-speed.	30
0147	68				PLA			
0148	29	03			AND	#3		
014A	85	F4			STA	PT1	Save pointer to (right-most) Pitch/Hit segment.	
014C	68				PLA			
014D	4A	4A			LSR	LSR		35
014F	29	03			AND	#3		
0151	85	F3			STA	PT2	Save pointer to (2 nd from right) Pitch/Hit segment	
0153	B5	5C			LDA	PITCH2,X		
0155	A2	03			LDX	#3		
0157	48			SPHL	PHA			
0158	29	03			AND	#3		
015A	95	EF			STA	PT6,X	Save pointers to (3 rd , 4 th , 5 th , 6 th from right) Pitch/Hit segments.	40
015C	68				PLA			
015D	4A	4A			LSR	LSR		
015F	CA				DEX			
0160	10	F5			BPL	SPHL		
0162	60				RTS		Return	45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE	
				; WINCLIC	Subroutine.	Clears WINDO and loads next piece of Pitch (or Hit),		1	
							into proper WINDO location. Returns SPD in Y-reg.		
0163	A9	00		WINCLR	LDA	#0			
0165	A2	05			LDX	#5			
0167	95	1F		WCLP	STA	WINDO,X	Blank all window segments	5	
0169	CA				DEX				
016A	10	FB			BPL	WCLP			
016C	A6	0B			LDX	PHPTR	Get pointer to next part of Pitch (or Hit),		
016E	B4	EF			LDY	PTL,X	pick up the corresponding segment-pointer,		
0170	B9	27	00		LDA	SEG,Y	and (finally) get the corresponding segment,	10	
0173	95	1F			STA	WINDO,X	placing it in the display window.		
0175	A4	ID			LDY	SPD			
0177	60				RTS				
				; BASES	Subroutine.	Advances baserunners after a hit (or walk). If			
						any scoring results, score is displayed. If this ends			
						the game (in bottom of ninth), EOG is set.		15	
						Call with (# of bases to be advanced - 1) in Y-register.			
0178	A2	00		BASES	LDX	#0	Initialize X-reg to indicate "no scoring."		
017A	46	1A		ADVANS	LSR	RUNNRS	Advance baserunners. Did one score?		
017C	90	1C			BCC	BAS1	No. Continue.	20	
017E	A6	00			LDX	ATBAT	Yes, add one		
0180	B5	11			LDA	SCOREA-SA,X	run to the		
0182	69	00			ADC	#0	score of		
0184	95	11			STA	SCOREA-SA,X	team at bat.		
0186	E0	0B			CPX	#\$B	Was team B at bat? (i.e. - bottom of inning?)	25	
0188	D0	10			BNE	BAS1	No. Continue.		
018A	A5	01			LDA	INNING	Yes, was this run		
018C	C9	09			CMP	#9	scored in the 9th (or greater) inning?		
018E	90	0A			BCC	BAS1	No, continue.		
0190	A5	1B			LDA	SCOREA	Yes. Is team B	30	
0192	C5	1C			CMP	SCOREB	now ahead?		
0194	B0	04			BCS	BAS1	No, continue.		
0196	86	1E			STX	EOG	Yes. Indicate end-of-game,		
0198	D0	06			BNE	SCUPD	go show score and return.		
019A	88				BAS1	DEY	More bases?	35	
019B	10	DD				ADVANS	Yes, advance runners again.		
019D	8A					TXA	Were any runs scored?		
019E	F0	23				BEQ	BASRET	No, no need to show score. Return.	
				; SCUPD	Subroutine. (Embedded in BASES.)	Updates/displays Score messages.			
01A0	A5	1B		SCUPD	LDA	SCOREA	Get A's score,	40	
01A2	20	80	17		JSR	SCCON	convert to two characters.		
01A5	A6	2C			LDX	PITCHIL	Is KIM pitching?		
01A7	F0	11			BEQ	ONEPLR	Yes, go show single-player score.		
01A9	84	6F			STY	SCORMS	No. Place A's score		
01AB	85	70			STA	SCORMST+1	in first part of score message.		
01AD	A5	1C			LDA	SCOREB	Do the	45	

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
OIAF	20	80	17		JSR	SCCON	same thing	1
OIB2	84	73			STY	SCORMS+4	with	
OIB4	85	74			STA	SCORMS+5	B's score,	
OIB6	A0	6F			LDY	# SCORMS	Point to proper score message,	5
OIB8	D0	06			BNE	SHOWSC	and call MSG S/R.	
OIBA	84	75		ONCPLR	STY	SCORMS1	Put player's score in "# runs"	
OIBC	85	76			STA	SCORMS1+1	message, and	
OIBE	A0	75			LDY	# SCORMS1	indicate this message to S/R.	
OIC0	20	00	01	SHOWSC	JSR	MSG	Display score message.	10
OIC3	60			BASRET	RTS		Return (from BASES and/or SCUPD).	
							; HITDIV Subroutine. Divides time of swing by period of ball movement to	
							determine effectiveness of swing (and thus the Hit).	
							Call; With Q=0; SPD, HSPD set up; Y-reg = time of swing.	
							Returns: With Q = quotient (expressed as 0-8); A-reg = HIT value	
OIC4	84	09		HITDIV	STY	SWTIME	Save time of swing.	15
OIC6	98	D8			TYA	CLD		
OIC8	C5	07			CMP	HSPD	Is swingtime / SPD $\geq .5$?	
OICA	90	04			BCC	HDCONT	No, continue	
OICC	A5	1D			LDA	SPD	Yes, fold to insure ratio $\leq .5$ (i.e. - change	20
OICE	E5	09			SBC	SWTIME	.9 to .1, .8 to .2, etc.)	
OIDO	A2	08		HDCONT	LDX	#8	Initialize Q-bit to ratio of .5.	
OID2	86	13			STX	QT	(Bit 3 = .5, ..., bit 0 = .0625)	
OID4	C5	07		HDLP	CMP	HSPD	Is dividend \geq divisor?	
OID6	9D	0A			BCC	DIVCON	No, try smaller divisor.	25
OID8	E5	07			SBC	HSPD	Yes, reduce dividend by divisor,	
OIDA	48				PHA		and	
OIDB	A5	12			LDA	Q	add	
OIDD	05	13			ORA	QT	current Q-bit to old quotient,	
OIDF	85	12			STA	Q	getting new quotient.	30
OIE1	68				PLA			
OIE2	46	07		DIVCON	LSR	HSPD	Cut next dividend by Y_2 .	
OIE4	46	13			LSR	QT	Cut next quotient - increment by Y_2 .	
OIE6	D0	EC			BNE	HDLP		
OIE8	H6	12			LDX	Q	Done, so put Q in X-reg, and pick	35
OIEA	BS	2D			LDA	HITBL,X	up corresponding HIT-value.	
OIEC	60				RTS			
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
			;					1
0200	AD	06	17	START	LDA	TIMER	Seed random number generator	
0203	85	15			STA	RND+1	using timer.	
0205	F8			GAMEST	SED		Use decimal mode throughout.	5
0206	A9	0B			LDA	#\$B	Start-of-game initialization.	
0208	85	00			STA	ATBAT		
020A	A9	00			LDA	#0		
020C	85	1E			STA	EDG		
020E	85	01			STA	INNING		
0210	85	1B			STA	SCOREA		
0212	85	1C			STA	SCOREB		
0214	A5	00		INNST	LDA	ATBAT	Start-of-half-inning initialization.	
0216	49	01			EOR	#1	Toggle batter.	
0218	85	00			STA	ATBAT		
021A	C9	0A			CMP	#\$A		
021C	D0	07			BNE	ININIT		
021E	18			NINNST	CLC		Start-of-whole-inning initialization.	
021F	A5	01			LDA	INNING		
0221	69	01			ADC	#1	Increment inning.	
0223	85	01			STA	INNING		
0225	A9	00		ININIT	LDA	#0	Start-of-half/whole-inning initialization.	
0227	85	02			STA	OUTS	Nobody out,	
0229	85	1A			STA	RUNNRS	nobody on base.	
022B	A9	00		BATST	LDA	#0	Start-of-bat initialization.	
022D	85	04			STA	BALL	No balls,	
022F	85	05			STA	STRIKE	no strikes,	
0231	A5	1A			LDA	RUNNRS		
0233	09	08			ORA	#8	man at home plate.	
0235	85	1A			STA	RUNNRS		
0237	A9	00		BATCON	LDA	#0	Continuation-of-bat (next pitch) initialization.	
0239	85	12			STA	Q	Clear quotient of hit-timing division.	
023B	85	13			STA	WUP	Start windup.	
023D	A9	05			LDA	#5		
023F	85	0B			STA	PHPTR	Start pitch at right-hand side of display.	
0241	20	D3	03		JSR	FIELD	Show current status.	35
0244	A5	2C			LDA	PITCHR	Is KIM pitching?	
0246	F0	24			BEQ	KIMP	Yes.	
0248	A5	2C		NOKMP	LDA	PITCHR	Using keyboard for pitching?	
024A	10	10			BPL	KBP	Yes.	
024C	20	C4	17		JSR	INPTBP	Get pitch from remote switches.	40
024F	4A				LSR		Pitched yet?	
0250	90	12			RCC	NOPCH	Not yet.	
0252	29	1F			AND	#\$1F	Yea, set bit 6 = 0 to insure selection of a pitch.	
0254	A2	00			LDX	#0		
0256	4A			CKREMP	LSR		When bit n=0, X-reg will equal n.	45
0257	90	32			RCC	PTCHED	Can do pitch processing with pitch in X-reg.	

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
0259	E8				INX			1
025A	10	FA			BPL	CKREMP	Continue to check remote pitch. [Uncond branch]	
025C	20	2F	01	KBP	JSR	KBG	Get pitch from keyboard,	
025F	C9	06			CMP	#6	limit to 0-5,	5
0261	AA				TAX		place in X-reg. Valid pitch?	
0262	90	27			BCC	PTCHED	Yes, go implement pitch.	
0264	20	D3	00	NOPCH	JSR	WINDUP	No pitch yet. Continue windup,	
0267	20	91	17		JSR	CHEKB	check for other keyboard commands,	
026A	B0	DC			BCS	NOKMP	and keep waiting for pitch.	
026C	20	AD	17	KIMP	JSR	RAND	KIM pitching. Set	
026F	29	7F			AND	#\$7F	maximum and	10
0271	09	20			ORA	#\$20	minimum	
0273	85	08			STA	DELAY	windup time.	
0275	20	D3	00	KPWIND	JSR	WINDUP	KIM's windup	
0278	20	91	17		JSR	CHEKB	Keyboard check,	15
027B	C6	08			DEC	DELAY	and	
027D	D0	F6			BNE	KPWIND	windup time.	
027F	20	AD	17		JSR	RAND	KIM's pitch,	
0282	29	07			AND	#7	initially limited to 0-7.	
0284	C9	06			CMP	#6	If 0-5, pitch	20
0286	90	02			BCC	KPTCH	is OK.	
0288	E9	06			SBC	#6	IF 6 > 7, change to 0 or 1.	
028A	AH			KPTCH	TAX			
028B	20	AD	17	PTCHED	JSR	RAND	Pitch (in X-reg) has been selected,	
028E	29	07			AND	#7	of every eight pitches,	25
0290	C9	03			CMP	#3	at least five will be strikes.	
0292	B0	0D			BCS	SHOPCH	Go pitch these five,	
0294	A8				TAY		of the other three, if the	
0295	8A				TXA		pitch isn't a slowball, it's a bad pitch,	
0296	D0	03			BNE	BADPCH	so take care of it.	30
0298	98				TYA		While 3/8 of most pitches are balls, only	
0299	D0	06			BNE	SHOPCH	1/8 of slowballs are balls.	
029B	E8	E8		BADPCH	INX	INX	How to turn a pitch into a ball:	
029D	E8	E8			INX	INX	add 1e to it to reference	
029F	E8	E8			INX	INX	the "bad pitch" table,	35
02A1	20	3B	01	SHOPCH	JSR	SHOWPA	Call Pitch/Hit setup routine with PHPTR=5.	
02A4	A9	FF			LDA	#\$FF	Indicate	
02A6	85	03			STA	BTSWNG	no swing yet.	
02A8	A9	30			LDA	#\$30	Put unswing bat	40
02AA	85	0A			STA	BATPOS	in bat display.	

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
							; Display the Pitch and watch for the swing of the bat.	1
02AC	20	63	01	PCHDIS	JSR	WINCLR	Set up display window, put SPD in Y for timing loop.	
02AF	20	17	01	LITEST	JSR	LIGHT	Light the display.	
02B2	A6	03			LDX	BTSWNG	Has batter swung previously?	5
02B4	10	18			BPL	LTLPCN	Yes, show "swung" bat and continue displaying.	
02B6	C9	11			CMP	#\$11	Did he just swing? ("B" - key)	
02B8	F0	09			BEQ	ASWNG	Yes.	
02BA	A5	23			LDA	BATTER	No, not with keyboard - using remote bat?	
02BC	10	10			BPL	LTLPCN	No, not using remote bat switch. Continue displaying.	
02BE	20	C4	17		JSR	INPTBP	Input from remote bat. Did he swing?	10
02C1	10	0B			BPL	LTLPCN	No. Continue displaying.	
02C3	A9	06		ASWNG	LDA	#6	A swing of the bat!	
02C5	85	0A			STA	BATPOS	Show new bat position.	
02C7	A5	1F			LDA	WINDO		
02C9	0A				ASL		Is ball in strike zone?	15
02CA	30	41			BMI	HITDIS	Yes, go display hit results.	
02CC	85	03			STA	BTSWNG	No. Indicate a swing and continue displaying.	
02CE	A5	1F		LTLPCN	LDA	WINDO	Place	
02D0	29	49			AND	#\$49	bat in	20
02D2	05	0A			ORA	BATPOS	display	
02D4	85	1F			STA	WINDO	window.	
02D6	88				DEY		Finished showing this pitch-segment?	
02D7	DO	D6			BNE	LITEST	No. Continue	
02D9	A5	03			LDA	BTSWNG	Yes. Has there been a swing with no hit?	25
02DB	10	2D			BPL	STKLNK	Yes, go process the strike.	
02DD	C6	0B			DEC	PHPTR	Finished showing the entire pitch?	
02DF	10	CB			BPL	PCHDIS	No, go show next segment.	
02E1	A5	EF			LDA	PT6	Pitch completed. There was no	
02E3	C9	02			CMP	#2	swing. Was it a strike?	
02E5	F0	23			BEQ	STKLNK	Yes.	30
02E7	E6	04			INC	BALL	No, increment	
02E9	A6	04			LDX	BALL	and	
02EB	BD	E7	1F		LDA	NUM,X	show	
02EE	85	80			STA	BALL MS+5	"BALL"	35
02FO	A0	7B			LDY	#BALLMS	number.	
02F2	20	00	01		JSR	MSG		
02F5	A5	04			LDA	BALL	Was this	
02F7	C9	04			CMP	#4	a walk?	
02F9	DO	6E			BNC	BCLINK	No, go to next pitch.	40
02FB	A0	00			LDY	#0	Yes, process as a single-base hit.	
02FD	20	78	01	BAS	JSR	BASES	Advance baserunners.	
0300	A5	1E			LDA	EOG	Game over? (Did "B" go ahead in bottom of 9th?)	
0302	F0	03			BEQ	BSLINK	No, next batter up.	
0304	1C	9C	03		JMP	LNDHFI	Yes, go to end-game processing.	
0307	1C	2B	02	BSLINK	JMP	BATST	Start new batter.	
0301	1C	6C	03	STKLNK	JMP	STK	Process strike.	45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
							; Processing for a swing at a good pitch.	1
030D	20	C4	01	HITDIS	JSR	HITDIV	Y-reg contains swing-time counter, S/R returns	
0310	85	06			STA	HIT	hit-value in A-reg. Save the Hit.	
0312	18				CLC		Set the X-reg to	5
0313	69	0F			ADC	#\$0F	point to the display	
0315	AA	F8			TAX	SED	tables for Hits.	
0317	A9	01			LDA	#1	Start hit display in 2nd from left character.	
0319	20	39	01		JSR	SHOWPH	Setting hit display.	
031C	20	63	01	HWC	JSR	WINCLR	Display the Hit graphically; Clear window,	10
031F	A9	06			LDA	#6	show "swung"	
0321	85	1F			STA	WINDO	bat,	
0323	20	17	01	HLITST	JSR	LIGHT	light display.	
0326	88				DEY			
0327	D0	FA			BNE	HLITST	do this for a while in each character,	15
0329	EG	0B			INC	PHPTR	then move to next character,	
032B	A5	0B			LDA	PHPTR	until	
032D	C9	06			CMP	#6	have shown	
032F	D0	EB			BNE	HWC	all characters.	
							; Show messages describing the Hit and the consequences.	20
								25
								30
								35
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
0331	AG	06			LDY	HIT		1
0333	B4	39		HITMLS	LDY	HITMSAD+3,X	Display the type of hit which was made.	
0335	20	00	01		JSR	MSG		
0338	A9	00			LDA	#0		
033A	75	09			STA	CAUGHT		5
033C	20	AD	17		JSR	RND	Give fielder a 50-50 chance	
033F	29	D4			AND	#\$04	of catching a foul or popup.	
0341	F0	02			BEQ	HITPRC	Missed.	
0343	EG	09			INC	CAUGHT	Caught.	
345	A4	06		HITPRC	LDY	HIT	Was hit good (single,...,hommer)?	10
0347	10	B4			BPL	BAS	Yes, go advance base runners.	
0349	C8				INY		Was hit a fly out?	
034A	DO	03			BNE	NOFLYO		
034C	4C	C2	37		JMP	DBPLAY	No. Yes. Go see if double play.	
034F	AG	09		NOFLYO	LDX	CHUGHT	Was hit caught?	
0351	DO	03			BNE	MCMESS	Yes, show CAUGHT, then show outs.	15
0353	C8				INY		Was hit a popup?	
0354	30	0D			BMI	FOULMS	No. Go process the foul ball.	
0356	B4	3D		MCMESS	LDY	MCMSSAD,X	Indicate CAUGHT (for FOUL or POPUP)	
0358	20	00	01		JSR	MSG	or MISSED (for POPUP only).	
035B	AG	09			LDX	CAUGHT	Alter HIT so that missed	20
035D	86	06			STX	HIT	popup will show as a single.	
035F	F0	D2			BEQ	HITMLS	Missed. Show single.	
0361	DO	22			BNE	OUTQ	Caught. Show out! [Uncond branch]	
							; Foul ball and strike processing	
0363	A5	05		FOULMS	LDA	STRIKE	Foul wasn't caught. Does batter	25
0365	C9	02			CMP	#2	already have two strikes?	
0367	DO	03			BNE	STK	No. This is a strike.	
0369	4C	37	02	BCLINK	JMP	BATCON	Yes. Just continue batting.	
036C	E6	05		STK	INC	STRIKE		30
036E	AG	05			LDX	STRIKE		
0370	CD	E7	1F		LDA	NUM,X	Get segment code for numerical.	
0373	85	76			STA	STRKMS+S		
0375	A0	81			LDY	#STRIKMS		
0377	20	00	01		JSR	MSG	Indicates "Str '#'"	35
037A	A5	05			LDA	STRIKE		
037C	C9	03			CMP	#3		
037E	DO	E9			BNE	BCLINK		
								40
								45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
							; At end of each half-inning, come here to see what happens next (e.g., game over).	1
							; Process outs.	
0380	A0	93		OUTP	LDY	# YOUTMS	Show	
0382	Z0	00	01		JSR	MSG	"yer out!"	5
0385	E6	02		OUTQ	INC	OUTS		
0387	AG	02			LDX	OUTS		
0389	BD	E7	1F		LDA	NUM,X		
038C	85	9A			STA	OUTMS+1		
038E	A0	99			LDY	# OUTSMS		
0390	Z0	00	01		JSR	MSG	Show how many outs.	10
0393	A5	02			LDA	OUTS		
0395	C9	03			CMP	#3	End of this half-inning?	
0397	F0	03			BEQ	ENDHFI	Yes.	
0399	4C	ZB	02		JMP	BATST	No, new batter up.	15
039C	Z0	A0	01	ENDHFI	JSR	SCUPD	End half-inning. Show score.	
039F	A5	1E			LDA	EOG	Is game already over? (EOG set in BASE 5.)	
03A1	DO	26			BNE	GCHK	Yes, just watch for GO button.	
03A3	A5	01			LDA	INNING		
03A5	C9	09			CMP	#9	Was this the 9th (or later) inning?	20
03A7	B0	07			BCS	GOVRYT	Yes. Go see if game is over yet.	
03A9	A5	ZC			LDA	PITCHR	No, end of an ordinary inning. Was KIM pitching?	
03AB	DO	13			BNE	INSLNK	No. Start new half-inning.	
03AD	4C	1E	02	NILINK	JMP	NINNST	Yes. Start new inning.	25
03B0	A5	ZC		GOVRYT	LDA	PITCHR	9th (or later) inning. KIM pitching?	
03A2	F0	15			BEQ	GCHK	Yes. Go indicate end-game, watch for "GO" button.	
03A4	A5	00			LDA	ATBAT	No, a two-player game.	
03A6	C9	0B			CMP	#50B	Was player B1 hitting?	
03A8	F0	09			BEQ	EBONIN	Yes. This is end of bottom of ninth.	
03AA	A5	1B			LDA	SCOREA	No. End of top of ninth.	30
03AC	C5	1C			CMP	SCOREB	Is player B winning already?	
03AE	90	07			BCC	GCHK	Yes. Game over.	
03CO	4C	14	02	INSLNK	JMP	ININST	No. Start new half-inning.	
03C3	A5	1B		EBONIN	LDA	SCOREA	In score tied at end of	35
03C5	C5	1C			CMP	SCOREB	nine innings?	
03C7	F0	F7			BEQ	INSLNK	Yes. Start new half-inning.	
03C9	Z0	91	17	GCHK	JSR	CHEKB	Game's over. See if restart via "GO" button.	40
03CC	A7	CD			LDY	#ENDDIS	No, alternate score with	
03CE	Z0	00	01		JSR	MSG	the "six-balls" display.	
03D1	F0	C9			BEQ	ENDHFI	Go show score again. [Uncond branch]	45

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ADDR	B1	B2	B3	LABEL	OPCODE	OPERAND	COMMENT	LINE
03D3	A2	05		FIELD	LDX	#\$5	Six characters to set up.	1
03D5	B4	00		FFILL	LDY	ATBAT,X	PICK up number,	
03D7	B9	E7	1F		LDA	NUM,Y		5
03DA	95	0C			STA	FLDMMSG,X	get corresponding segment-code, and store in message area.	
03DC	CA				DEX			
03DD	10	F6			BPL	FFILL	Loop until all six are done.	
03DF	A5	01			LDA	INNING	If inning is	
03E1	C9	0A			CMP	#\$A	tenth (or more),	
03E3	90	04			BCC	INOK		10
03E5	A9	79			LDA	#\$79	change inning number to "E" (extra).	
03E7	85	0D			STA	FLDMMSG+1		
03E9	A5	1A		INOK	LDA	RUNNRS	Convert baserunner	
03EB	29	07			AND	#7	3-bit code	
03ED	AA				TAX		to	15
03EE	B5	41			LDA	RUNSEG,X	segment-code, and	
03FO	85	0F			STA	FLDMMSG	overwrite 4th character.	
03F2	A5	2C			LDA	PITCHR	Is this a one-player game?	
03F4	DO	04			BNE	ABOK	No.	
03F6	A9	00			LDA	#0	Yes, blank the	20
03F8	85	0C			STA	FLDMMSG	"batter" display.	
03FA	A0	0C		ABOK	LDA	#FLDMMSG	Show field status!	
03FC	4C	00	21		JMP	MSG	(S/R returns from MSG routine.)	
1780	48	4A		SCCON	PHA	LSR	Place upper four	25
1782	4A	4A			LSR	LSR	bits in	
1784	4A	AA			LSR	TAX	X-reg, and use to	
1786	BC	E7	1F		LDY	NUM,X	load Y-reg with corresp. segment-code.	
1789	68				PLA		Place lower four	
178A	29	0F			AND	#\$7F	bits in	
178C	AA				TAX		X-reg, and use to	30
178D	BD	E7	1F		LDA	NUM,X	load A-reg with corresponding segment-code.	
1790	60				RTS			
1791	20	17	01	CHEKB	JSR	LIGHT		35
1794	C9	20			CMP	#\$20	"PC" key depressed?	
1796	DO	03			BNE	CHPL		
1798	20	D3	03		JSR	FIELD	Yes, show field status.	
179B	C9	18		CHPL	CMP	#\$18	"+" key depressed?	
179D	DO	03			BNE	CHGO		40
179F	20	A0	01		JSR	SCUPD	Yes, show score.	
17A2	C9	19		CHGO	CMP	#\$19	"GO" key depressed?	
17A4	DO	05			BNE	XCHEK		
17A6	68	68			PLA	PLA	Yes, clear stack (since no RTS),	
17A8	4C	05	02		JMP	GAMEST	and restart game.	
17AB	38	60		XCHEK	SEC	RTS		45

