

TORPEDO FIRING PRACTICE  
ADVANCE

James R. Merrill (1625)

START

2

Depth;Speed FIRE # Torpedo DISTANCE NEW SHIP

TORPEDO FIRING PRACTICE - A new game for your HP67/97 calculator. Guaranteed to improve your skills as captain of the USS HardPressed.

- 1) Load Program Card - both sides (1 & 2)
- 2) To initially start, enter a seed greater than zero and press "f e"; zero appears.
- 3) To check the distance to the enemy ship whose vital statistics are known to the 67/97 (in yards) press "D" and a distance will be shown, and repeated pressing of "D" will show either a smaller or larger distance since the enemy ship could be zigzagging.

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- 4) To advance your submarine towards the enemy ship, press "f a" which will result in a new distance readout. To fire torpedoes at a range of more than 20,000 yards is not wise, since your older Mk.24 torpedoes might not make the entire distance and you have only 15 to sink ships with. Press "F a" as desired.

- 5) Once you feel you are in a position to hit the ship, you must set the depth setting and the speed setting on your torpedoes. Again, your aging Mk.24 torpedoes are incapable of any speed above 35 knots, but, generally, a faster torpedo speed setting will mean a greater likelihood of reaching the target. Whether it hits once it gets there is another story.  
a) Enter depth setting in feet - press "A"  
b) Speed setting in knots - press "A"

- 6) Fire your torpedo - press "B"  
a) Display 4 decimals which has the number of the torpedo to the left of the decimal point.  
b) If too deep, see a "22" and revise the depth setting per step 5 above.  
c) If the torpedo misses or falls short, see a "55".  
d) If the torpedo is a dud, see a "44".  
e) Lastly, if the torpedo hit, see a "88" and return to steps 5 or 6 to refire. (If you don't wish to modify settings, return to step 6 to fire another torpedo.)

- 7) If you sink the ship (Congratulations, here is your Presidential Citation), see a llllllllll., followed by the tonnage of the ship just sunk, and the number of ships sunk so far on this patrol.

- 8) Press "E" to setup for a new ship and return to step 3 above for firing.

- 9) If you expend all your torpedoes (15), the total tonnage of all the ships you have sunk on the patrol is displayed.

- 10) To play another game, merely press R/S.

TORPEDO FIRING PRACTICE - Register Contents and relevant equations.

RNG#1:  $\text{Frac}(\text{Seed} \times 9821 + .211327)$

RNG#2:  $\text{Int}(\text{RNG}\#1 \times 1023 + 1)$

Dud Torpedo: RNG#1 must be less than .9

Initial distance:  $\text{RNG}\#2 \times 50$

Initial tonnage:  $\text{RNG}\#2 \times 23$

Initial Draft:  $(3 + (\text{Sqrt}(\text{Initial tonnage}/99))$  and the integer part of this is used.

Initial number of torpedoes: Fifteen (15)

Register Contents:

00: # torpedoes A: Depth setting  
1: Tonnage B: Speed Setting  
2: 9821 C: Used  
3: Draft I: #  
4: Used  
5: .211327  
6: Distance  
7: Seed  
8: used  
9: SUM(tonnage)  
S4: used  
S5: used  
S9: #Ships

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TORPEDO FIRING PRACTICE - A Realistic New Game for aspiring submarine captains - MP-67/97.  
(Record in Fix 0, Flags off, any Trig mode.)

001	322515	*LBL e	071	312512	*LBL B	141	3281	xGT y
	3143	CL RG		01	1		2201	GTO 1
	3142	P x S		05	5		04	4
	3143	CL RG		3400	RCL 0		04	4
	3154	Sq.rt		51	-		2208	GTO 8
	3283	FRAC		01	1		312501	*LBL 1
	3309	STO 9		61	+		3406	RCL 6
	09	9		2304	DSP 4		09	9
010	08	8		3572	PAUSE		09	9
	02	2	080	2300	DSP 0	150	81	/
	01	1		3405	RCL 5		3183	INT
	3302	STO 2		3411	RCL A		3306	STO 6
	83	.		3271	XlTeY		01	1
	02	2		2201	GTO 1		3271	xLTeY
	01	1		02	2		2201	GTO 1
	01	1		02	2		83	.
	03	3		312508	*LBL 8		09	9
	02	2		41	ENTER		3562	1/x
	07	7		41	ENTER		43	EEX
020	3307	STO 7	090	00	0	160	09	9
	01	1		3533	STO I		71	X
	05	5		3233	DSZ 1		3572	PAUSE
	3300	STO 0		2208	GTO 8		00	0
	312515	*LBL E		2209	GTO 9		3401	RCL 1
	322212	GSB b		312508	*LBL 8		3572	PAUSE
	05	5		3553	Roll#		21	2+
	00	0		3553	Roll#		3572	PAUSE
	71	X		3522	RTN		2208	GTO 8
	3308	STO 8		312501	*LBL 1		312501	*LBL 1
030	322212	GSB b	100	03	3	170	08	8
	02	2		05	5		08	8
	03	3		3412	RCL B		2208	GTO 8
	71	X		3281	xGT y		312513	*LBL C
	3306	STO 6		3552	x X y		3400	RCL 0
	3301	STO 1		3312	STO B		3522	RTN
	09	9		06	6		322511	*LBL a
	09	9		81	/		322212	GSB b
	81	/		3142	P x S		01	1
	3154	Sq.Rt		3300	STO 0	180	01	1
040	03	3	110	312502	*LBL 2		71	X
	61	+		3142	P x S		335108	STO-8
	3183	INT		322212	GSB b		2214	GTO D
	3305	STO 5		3412	RCL B		322512	*LBL b
	44	CLx		01	1		322213	GSB c
	3522	RTN		83	.		01	1
	312514	*LBL D		08	8		00	0
	322213	GSB c		81	/		02	2
	83	.		71	X		03	3
050	03	3	120	3183	INT	190	71	X
	07	7		335108	STO-8		01	1
	3281	xGTy		3408	RCL 8		61	+
	355102	SF2		3171	xLT 0		3183	INT
	2300	DSP 0		2201	GTO 1		3522	RTN
	322212	GSB b		3142	P x S		322513	*LBL c
	04	4		3233	DSZ 1		3409	RCL 9
	71	X		2202	GTO 2		3402	RCL 2
	357102	F?2		3242	P x S		71	X
	42	CHS		05	5		3407	RCL 7
	335108	STO-8		05	5		61	+
060	3408	RCL 8	130	2208	GTO 8	200	3283	FRAC
	3171	xLT 0		312501	*LBL 1		3309	STO 9
	322212	GSB b		3142	P x S		3522	RTN
	3313	STO C		3400	RCL 0		312509	*LBL 9
	3522	RTN		3142	P x S		3553	Roll#
	312511	*LBL A		338106	STO+6		3572	PAUSE
	3311	STO A		3413	RCL C		3142	P x S
	3522	RTN		3308	STO 8		3404	RCL 4
	312511	*LBL A		322213	GSB c		3142	P x S
	3312	STO B		83	.		3522	RTN
070	3522	RTN	140	09	9	210	223115	GTOfe

[R/S]

module is removed from one of the ports its contents are lost within seconds, and, if the .END. is "in" the module removed, all of memory is lost. A problem arises. Can full memory capacity and the printer or card reader be utilized together?

A partial solution to the problem is a modification to the memory module that will permit its removal for a few hours so the card reader may be plugged in and data recorded onto magnetic cards. The "removed" module may then be placed back in the system.