

NAVIGATIONAL TIMEPIECE RATE BOOK

VOL. _____



NAVSHIPS 4270

(1-52)

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NAVSHIPS 4270 (1-52)

NAVIGATIONAL TIMEPIECE RATE BOOK

The primary responsibility for the care of chronometers and chronometer watches aboard ship is set forth in U. S. Navy Regulations, under that section which deals with the specific duties of the navigator.

Detailed instructions concerning the over-all procedure for handling chronometers and chronometer watches are contained in Chapter 24 of the Bureau of Ships Manual. This section of the Manual covers maintenance of the instruments aboard ship, lists the pools authorized to issue them, and provides general information regarding allowances and issues.

General instructions for the use of this rate book are contained in the first pages of the book headed "INSTRUCTIONS." These instructions supersede all previous Bureau of Ships directives covering the rating of navigational timepieces aboard ship.

16-06572-1



NAVSHIPS 4270 (1-52)

NAVIGATIONAL TIMEPIECE RATE BOOK

VOL. *I*

OF THE

U. S. *N. S. GEN. JOHN POPE TAP110*

Dated *15 NOV 1965* To

U. S. GOVERNMENT PRINTING OFFICE 16-06572-1

INSTRUCTIONS

1. PURPOSE.—This **NAVIGATIONAL TIMEPIECE RATE BOOK** is furnished as a convenience to the navigator and is arranged to provide space for recording the daily errors of ship chronometers and/or chronometer watches. The record so obtained enables the navigator to predict the performance of these timepieces and thus to determine correct time. The pages of the rate book which are used for daily entries have been designed to accommodate the records for a maximum of three (3) timepieces which, for convenience, will be identified in the rate book as A, B, and C. After the rate book is filled it may be destroyed at the discretion of the vessel's commanding officer. This book is not to be turned in to the chronometer pool or returned to the Bureau unless it is specifically recalled by the Bureau prior to its destruction.

2. STANDARD ABBREVIATIONS.—The standard abbreviations used in this rate book are:
SC—Ship Chronometer
GCW—Gimbal Chronometer Watch
G. C. T.—Greenwich Civil Time
Mc—Megacycles

3. ADDITIONAL RATE BOOKS.—When needed, additional copies of this rate book may be requisitioned by name and number from one of the following District Publications and Printing Offices:

For the East Coast: DP&PO, 5th ND, Norfolk, Va.
For the West Coast: DP&PO, 12th ND, San Francisco, Calif.

4. KEEPING THE DAILY RECORD.—After its daily winding, each SC or GCW aboard should be compared with one of the approved time signals discussed in paragraph 7 below. The error of each timepiece relative to G. C. T. (the dial error of the instrument) should be determined at approximately the same time each day and recorded in this book on the line which corresponds to the proper date. Use of this book is demonstrated below. Sample data is furnished for a typical Hamilton SC, and the proper method for recording this data is shown in the accompanying illustration from a page of the rate book:

If the timepiece is 1 minute, 12½ seconds ahead of correct time, the error should be recorded as shown on the line for the proper day of the month. (For convenience, the days appearing in the sample record are the 1st and 2nd days of the month.)

Similarly, if this timepiece twenty-four hours later is 1 minute and 11 seconds ahead of correct time, this should be recorded on the line for the next day of the month.

By comparing the errors which have been recorded as a result of the above two observations, the successive daily rate is then obtained by subtraction and entered in the appropriate column and line, as shown. The process is then repeated each successive day.

Because of the methods normally used aboard ship to check timepieces, no attempt should be made to determine the error to nearer than one-half (0.5) second, and therefore all entries in the "Seconds" columns after the decimal points should be either 0 or 5.

16-66572-1

DATE		A				
YEAR	19__	MAKE HAMILTON				
		TYPE SC				
MONTH	19__	ERROR RELATIVE TO G.C.T. +=FAST -=SLOW			SUCCESSIVE DAILY RATES	
		DAY	±	MIN.	SECONDS	± SECONDS
		1	+	1	12.5	
		2	+	1	11.0	— 1.5

5. AVERAGE DAILY RATE.—If desired, the average daily rate may be computed for each page of the rate book by the following formula:

Average Daily Rate= (error on last day observed) - (error on first day observed) / (day of month of last observation) - (day of month of first observation)

The above equation is illustrated below for a 31-day month. In the sample month the errors were observed on both the 1st and 31st. If the error on the 1st day of the month was +9 min. 3.0 sec. and on the 31st day is +9 min. 53.5 sec., the average daily rate will be determined as follows:

Average Daily Rate= (+9 min. 53.5 sec.) - (+9 min. 3.0 sec.) / (31) - (1) = +50.5 sec. / 30 days = +1.68 sec./day

If there are no abnormal conditions which cause a change of rate to occur, the average daily rate so computed will be a more accurate index of the performance of the timepiece than the successive daily rates discussed in paragraph 4 above and shown on the sample record, since any daily observational errors will have been averaged out. If desired, this computed average daily rate for each timepiece may be recorded at the bottom of each page in the space provided.

6. ERRATIC PERFORMANCE.—It is no longer considered necessary to perform intercomparison computations between timepieces. Inspection of the "Successive Daily Rates" column will reveal abnormal or erratic performance of any SC or GCW aboard. Those timepieces which become unreliable for any reason should be replaced as soon as practicable from one of the authorized chronometer pools listed in Chapter 24 of the Bureau of Ships Manual.

7. APPROVED TIME SIGNALS.—Time signals broadcast by the National Bureau of Standards or the Navy are available for use in rating chronometers or chronometer watches. The time service most commonly used and most readily available is that broadcast from stations WWV and WWVH of the National Bureau of Standards. These signals are broadcast on 5Mc, 10Mc, 15Mc, and on other frequencies, and unlike the Navy time signals, are generally transmitted continuously. A complete schedule entitled "Standard Frequencies and Time Signals" is available upon request from the National Bureau of Standards, Central Radio Propagation Laboratory, Washington 25, D. C. In addition to the above, Navy time signals are broadcast at various hours from stations NSS, NPG, NPM, and NBA. Information concerning frequencies and times of these transmissions are found in the U. S. Naval Observatory circular entitled "The Naval Observatory Time Service." This circular may be obtained upon request from the U. S. Naval Observatory, Washington 25, D. C.

16-66572-1

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1965	HAMILTON	505				HAMILTON		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1															
2															
3															
4															
RESET 5	-	0.12	+ 0.44	-	0.09	+ .61									
6		0 0.58	+ 0.46		+ 0 1.12	+ 1.03									
7		0 0.04	+ 0.46		+ 0 2.15	+ 1.03									
8		+ 0 1.50	+ 0.46		+ 0 3.18	+ 1.03									
9															
10															
11															
12															
13		+ 0 5.00	+ 0.61		+ 0 5.50	+ .67									
14															
15															
16		+ 0 7.00			+ 0 9.50										
17		+ 0 7.50	+ 0.615		+ 0 10.50	+ .86									
18															
19															
20															
21															
22															
23															
24		+ 0 12.50	+ 0.715		+ 0 12.0	+ 0.24									
25															
26		+ 0 14.00	0.67		+ 0 19.00	+ .90									
27															
28															
29		+ 0 16.50	+ 0.718		+ 0 22.50	+ 0.919									
30															
DEC 31		+ 0 18.00			+ 0 24.00										
		+ .720 SEC		AVERAGE DAILY RATE - .0400		AVERAGE DAILY RATE		AVERAGE DAILY RATE		AVERAGE DAILY RATE					

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1965	HAMILTON	505				HAMILTON		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1		+ 0 18.0			+ 0 24.0										
2		+ 0 19.0	+ 1.0		+ 0 25.0	+ 1.0									
3		+ 0 20.0	+ 1.0		+ 0 25.5	+ 0.5									
4		+ 0 21.0	+ 1.0		+ 0 26.0	+ 0.5									
5		+ 0 21.5	+ 0.5		+ 0 26.5	+ 0.5									
6		+ 0 22.0	+ 0.5		+ 0 28.0	+ 1.5									
7		-180 th													
8		+ 0 23.0	+ 1.0		+ 0 29.5	+ 1.5									
9		+ 0 23.0	0.0		+ 0 29.5	- 1.0									
10		+ 0 24.0	+ 1.0		+ 0 29.0	+ 0.5									
11		+ 0 25.0	+ 1.0		+ 0 30.0	+ 1.0									
12		+ 0 26.0	+ 1.0		+ 0 31.0	+ 1.0									
13		+ 0 27.5	+ 1.5		31.5	+ 0.5									
14															
15															
16		+ 0 29.5			+ 0 32.0										
17		+ 0 30.5	+ 1.0		+ 0 33.0	1.0									
18		+ 0 31.5	+ 1.0		+ 0 33.5	0.5									
19		+ 0 32.5	+ 1.0		+ 0 34.5	+ 1.0									
20															
21															
22		+ 0 34.5	+ 1.0		+ 0 36.0	+ 0.5									
23															
24		+ 0 38.0	+ 1.5		+ 0 39.0	+ 1.5									
25		+ 0 38.5	+ 0.5		+ 0 39.5	+ 0.5									
26		+ 0 40.0	+ 0.5		+ 0 40.5	+ 1.0									
27		+ 0 39.5	- 0.5		+ 0 40.5										
28		+ 0 40.5	+ 1.0		+ 0 41.0	+ 0.5									
29															
30															
31															
		+ .767 SEC		AVERAGE DAILY RATE + .607 SEC		AVERAGE DAILY RATE		AVERAGE DAILY RATE		AVERAGE DAILY RATE					

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A					B					C				
YEAR		MAKE <u>Hamilton</u>					MAKE <u>Hamilton</u>					MAKE _____				
19 <u>66</u>		TYPE _____					TYPE _____					TYPE _____				
		SERIAL NO. <u>505</u>					SERIAL NO. <u>11919</u>					SERIAL NO. _____				
MONTH	JAN.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES					
		$\pm$	MIN.	SECONDS	$\pm$	SECONDS		$\pm$	SECONDS		$\pm$	SECONDS				
DAY		$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1		+	0	43.0	+	0.5	+	0	43.0	+	0.5					
2		+	0	45.0			+	0	47.0							
3		+	0	46.00	+	1.0	+	0	47.5	+	0.5					
4		+	0	47.00	+	1.0	+	0	48.0	+	0.5					
5		+	0	48.00	+	1.0	+	0	49.0	+	1.0					
6		+	0	49.00	+	1.0	+	0	50.5	+	1.5					
7		+	0	51.5	+	1.0	+	0	53.0	+	1.0					
8		+	0	52.5	+	1.0	+	0	54.0	+	1.0					
9		+	0	53.5	+	1.0	+	0	55.0	+	1.0					
10		+	0	54.5	+	1.0	+	0	56.5	+	1.5					
11																
12																
13																
14		SAN FRANCISCO														
15																
16																
17																
18		+	1	02.0	+	7.5	+	0	01.0	+	4.5					
19		+	1	03.0	+	1.0	+	1	01.0	+	0.0					
20		+	1	04.0	+	1.0	+	1	02.0	+	1.0					
21		+	1	05.0	+	1.0	+	1	03.0	+	1.0					
22		+	1	06.0	+	1.0	+	1	05.0	+	2.0					
23																
24		+	1	08.0	+	2.0	+	1	07.0	+	2.0					
25		+	1	09.0	+	1.0	+	1	08.5	+	1.5					
26		SKIPPED														
27		+	1	10.0	+	1.0	+	1	09.5	+	1.0					
28		+	1	11.0	+	1.0	+	1	10.5	+	1.0					
29		+	1	12.0	+	1.0	+	1	11.0	+	0.5					
30		+	1	13.0	+	1.0	+	1	11.5	+	0.5					
31		+	1	14.0	+	1.0	+	1	12.0	+	0.5					

+ .95 SEC. AVERAGE DAILY RATE + .81 SEC. AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

OBSERVATION		DATE		A						B						C						OBSERVATION	
LOCAL TIME TO NEAREST MINUTE		YEAR	MAKE	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW						SUCCESSIVE DAILY RATES						LOCAL TIME TO NEAREST MINUTE							
		19-66	HAMILTON																				
		MONTH	TYPE																				
		SERIAL NO.																					
		19-66	505																				
		19-66	11919																				
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+ 1.02 SEC. AVERAGE DAILY RATE + 1.19 SEC. AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR		MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>					
19 <u>66</u>		TYPE <u>505</u>				TYPE <u>11919</u>				TYPE <u>505</u>					
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				LOCAL TIME TO NEAREST MINUTE	
DAY		$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	TIME	INITIALS
1		+	1	44.0	+	1	15							1740	RMC
2		+	1	45.0	+	1	15								
3		+	1	45.0	+	1	15							1800	RMC
4		+	1	46.0	+	1	15							1710	RMC
5		+	1	46.5	+	0	5							1740	RMC
6		+	1	48.0	+	1	5							1500	RMC
7		+	1	48.5	+	0	5							1715	RMC
8															
9		+	1	53.0	+	1	5							0400	RMC
10															
11		+	1	52.5	+	2	5							0525	RMC
12		+	1	53.0	+	0	5							0400	RMC
13															
14															
15															
16		+	1	58.0	+	5	0							1830	RMC
17															
18		+	1	59.5	+	1	5							0540	RMC
19		+	2	00.5	+	1	0							0500	AA
20															
21															
22															
23															
24															
25															
26															
27		+	2	06.5	+	6	0							0820	RMC
28															
29															
30															
31															

+ .87 SEC. AVERAGE DAILY RATE $\pm$ 1.02 SEC. AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR		MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>					
19 <u>66</u>		TYPE <u>505</u>				TYPE <u>11919</u>				TYPE <u>505</u>					
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW				LOCAL TIME TO NEAREST MINUTE	
DAY		$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	TIME	INITIALS
1															
2															
3															
4															
5															
6															
7															
8															
9															
10		+	2	19.5	+	13	0								
11															
12		+	2	21.0	+	1	5								
13		+	2	22.6	+	1									
14		+	2	23.5	+	1	5								
15		+													
16		+													
17		+	2	26.0	+	2	5								
18		+	2	27.0	+	1	0								
19		+	2	28.0	+	1	0								
20		+	2	29.0	+	1	0								
21		+	2	30.0	+	1	0								
22		+	2	31.0	+	1	0								
23		+	2	32.0	+	1	0								
24		+	2	33.5	+	1	5								
25		+	2	34.5	+	1	0								
26		+	2	35.5	+	0	5								
27		+	2	37.0	+	1	0								
28		+	2	37.5	+	0	5								
29		+	2	38.0	+	0	5								
30		+	2	38.5	+	0	5								
31															

+ .91 SEC. AVERAGE DAILY RATE $\pm$ 1.09 SEC. AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.	
1966	HAMILTON	S.C.		505		1966	HAMILTON	S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS
1	+ 2 39.5	+ 1.0		1	+ 2 52.0	+ 1.0											
2	+ 2 40.0	+ 0.5		2	+ 2 53.0	+ 1.0											
3				3													
4				4													
5	SAN FRANCISCO, CALIF.			5	SAN FRANCISCO, CALIF.												
6				6													
7				7													
8				8													
9	+ 2 48.0	+ 1.14		9	+ 3 04.0	+ 1.57											
10				10													
11	SAN FRANCISCO, CALIF.			11													
12				12													
13	+ 2 52.0	+ 1.0		13	+ 3 10.0	+ 1.5											
14				14													
15				15													
16				16													
17				17													
18	SAN FRANCISCO, CALIFORNIA.			18													
19				19													
20				20													
21				21													
22				22													
23	+ 3 01.0	+ 0.9		23	+ 3 25.0	+ 1.5											
24				24													
25				25													
26				26													
27	SAN FRANCISCO, CALIFORNIA.			27													
28				28													
29				29													
30				30													
31	+ 3 09.0	+ 1.0		31	+ 3 36.0	+ 1.4											

0.95^s AVERAGE DAILY RATE 1.42^s AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.	
1966	HAMILTON	S.C.		505		1966	HAMILTON	S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ SECONDS	DAY	$\pm$ MIN. SECONDS
1	+ 3 10.0	+ 1.0		1	+ 3 37.5	+ 1.5											
2	+ 3 10.5	+ 0.5		2	+ 3 39.0	+ 1.5											
3				3													
4	SAN FRANCISCO CALIFORNIA			4	SAN FRANCISCO CALIFORNIA												
5				5													
6	+ 3 13.0	+ 0.8		6													
7	+ 3 15.0	+ 1.5		7	+ 3 45.0	+ 1.2											
8	+ 3 15.0			8	+ 3 47.0	+ 2.0											
9	+ 3 16.0	+ 1.0		9	+ 3 47.5	+ 0.5											
10	+ 3 17.0	+ 1.0		10	+ 3 49.0	+ 1.5											
11	+ 3 18.0	+ 1.0		11	+ 3 50.0	+ 1.0											
12	+ 3 18.5	+ 0.5		12	+ 3 51.0	+ 1.0											
13	+ 3 19.5	+ 1.0		13	+ 3 52.0	+ 1.0											
14	CROSSED INT. D.L.			14	OMITTED 14TH.												
15	+ 3 21.0	+ 1.5		15	+ 3 53.5	+ 1.5											
16	+ 3 21.0	- - -		16	+ 3 55.0	+ 1.5											
17	+ 3 22.5	+ 1.5		17	+ 3 56.5	+ 1.5											
18	+ 3 23.5	+ 1.0		18	+ 3 57.5	+ 1.0											
19	+ 3 25.0	+ 1.5		19	+ 3 59.0	+ 1.5											
20	+ 3 25.5	+ 0.5		20	+ 4 00.0	+ 1.0											
21	+ 3 26.0	+ 0.5		21	+ 4 00.5	+ 0.5											
22	+ 3 27.0	+ 1.0		22	+ 4 01.0	+ 0.5											
23	+ 3 28.0	+ 1.0		23	+ 4 02.0	+ 1.0											
24	+ 3 29.0	+ 1.0		24	+ 4 03.0	+ 1.0											
25	+ 3 30.0	+ 1.0		25	+ 4 04.0	+ 1.0											
26	+ 3 31.0	+ 1.0		26	+ 4 05.0	+ 1.0											
27	+ 3 32.0	+ 1.0		27	+ 4 06.0	+ 1.0											
28	+ 3 32.5	+ 0.5		28	+ 4 07.0	+ 1.0											
29	+ 3 34.5	+ 1.5		29	+ 4 09.0	+ 2.0											
30	+ 3 34.5	0.0		30	+ 4 09.0	0.0											
31				31													

+0.816^s AVERAGE DAILY RATE +0.050 AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				
YEAR	MAKE	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		
19	TYPE	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS
66	HAMILTON													
	S.C.													
	SERIAL NO. 505													
MONTH														
JULY														
DAY														
1		+	3	35.5	+	1.0								
2		+	3	36.5	+	1.0								
3		+	3	37.5	+	1.0								
4		+	3	38.0	+	0.5								
5		+	3	39.0	+	1.0								
6		+	3	40.0	+	1.0								
7		+	3	41.0	+	1.0								
8		+	3	42.5	+	1.5								
9		+	3	42.5	0.0									
10		+	3	43.0	+	0.5								
11		+	3	44.5	+	1.5								
12		+	3	45.0	+	1.0								
13		+	3	45.5	+	0.5								
14		+	3	45.5	0.0									
15		+	3	46.5	+	1.0								
16														
17														
18														
19		+	3	51.5	+	1.0								
20		+	3	51.5	0.0									
21		+	3	52.0	+	0.5								
22														
23														
24		+	3	54.0	+	1.0								
25		+	3	55.0	+	1.0								
26		+	3	56.0	+	1.0								
27		+	3	56.0	0.0									
28		+	3	56.5	+	0.5								
29		+	3	57.0	+	0.5								
30		+	3	57.5	+	0.5								
31		+	3	58.0	+	0.5								

t. 725 AVERAGE DAILY RATE +1.097 AVERAGE DAILY RATE AVERAGE DAILY RATE
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

OBSERVATION	
LOCAL TIME TO NEAREST MINUTE	INITIALS
0430	RJ
0440	RJ
0425	RJ
0430	RJ
0445	RJ
0430	RJ
0420	RJ
0425	RJ
0420	RJ
0435	RJ
0420	RJ
0500	RJ
0430	RJ
0425	RJ
0430	RJ
0500	RJ
0435	RJ
1030	RJ
0430	RJ
0445	RJ
0430	RJ
0425	RJ
0500	RJ
0425	RJ
0430	RJ
0400	RJ
0400	RJ
0400	RJ

DATE		A				B				C				OBSERVATION		
YEAR	MAKE	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	INITIALS	
19	TYPE	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
	HAMILTON															
	S.C.															
	SERIAL NO. 505															
MONTH																
JULY																
DAY																
1		+	3	58.0	+	0.5				+	4	44.0	+	1.0		0400
2		+	3	59.0	+	1.0				+	4	45.0	+	1.0		0400
3		+	4	00.0	+	1.0				+	4	46.5	+	1.5		045
4																
5		+	4	01.5	+	0.7				+	4	48.0	+	1.2		0430
6		+	4	02.0	+	0.5				+	4	50.0	+	1.0		0420
7		+	4	03.0	+	1.0				+	4	51.0	+	1.0		0430
8		+	4	04.0	+	1.0				+	4	52.5	+	1.5		0400
9		+	4	05.0	+	1.0				+	4	54.0	+	1.5		0400
10																
11																
12		+	4	07.0	+	0.6				+	4	57.0	+	1.0		0430
13																
14		+	4	10.0	+	1.5				+	4	59.5	+	2.3		
15																
16		+	4	11.0	+	0.5				+	5	01.0	+	1.5		0430
17		+	4	12.0	+	1.0				+	5	02.5	+	1.5		0430
18		+	4	12.0	+	0.0				+	5	02.5	+	0.0		0430
19		+	4	13.0	+	1.0				+	5	04.0	+	1.5		0430
20		+	4	14.0	+	1.0				+	5	05.0	+	1.0		0400
21		+	4	15.5	+	0.5				+	5	05.5	+	0.5		0405
22		+	4	15.5	+	1.0				+	5	07.5	+	2.0		0440
23		+	4	15.0	-	0.5				+	5	05.5	-	2.5		0358
24		+	4	16.0	+	1.0				+	5	08.5	+	3.0		0400
25		+	4	16.5	+	0.5				+	5	10.5	+	2.0		0420
26		+	4	17.0	+	0.5				+	5	11.5	+	1.0		0425
27		+	4	17.5	+	0.5				+	5	12.5	+	1.0		0440
28		+	4	18.0	+	0.5				+	5	14.0	+	1.5		0555
29		+	4	18.5	+	0.5				+	5	15.0	+	1.0		
30																
31																

t. 683 AVERAGE DAILY RATE +1.333 AVERAGE DAILY RATE AVERAGE DAILY RATE
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION														
YEAR	MAKE	TYPE	SERIAL NO.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES	MAKE	TYPE	SERIAL NO.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES	MAKE	TYPE	SERIAL NO.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES	MAKE	TYPE	SERIAL NO.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES	MAKE	TYPE	SERIAL NO.	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES	LOCAL TIME TO NEAREST MINUTE		
MONTH	DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1966	1																											
	2	+	4	21.0	+	0.8	+	5	20.0	+	1.3																	
	3																											
	4	+	4	22.5	+	1.5	+	5	22.0	+	2.0																	
	5																											
	6																											
	7																											
	8																											
	9	+	4	26.0	+	0.7	+	5	29.0	+	1.4																	
	10	+	4	26.0	+	0.0	+	5	30.0	+	1.0																	
	11	+	4	26.0	+	0.0	+	5	30.5	+	0.5																	
	12	+	4	26.5	+	0.5	+	5	32.0	+	1.5																	
	13	+	4	27.5	+	1.0	+	5	33.0	+	1.0																	
	14	+	4	28.0	+	0.5	+	5	34.0	+	1.0																	
	15	+	4	29.0	+	0.0	+	5	35.0	+	1.0																	
	16	+	4	29.5	+	0.5	+	5	37.0	+	2.0																	
	17	+	4	29.5	+	0.5	+	5	37.0	+	2.0																	
	18	+	4	29.5	+	0.0	+	5	38.5	+	1.5																	
	19	+	4	30.0	+	0.5	+	5	39.5	+	1.0																	
	20	+	4	31.0	+	1.0	+	5	41.0	+	1.5																	
	21	+	4	31.5	+	0.5	+	5	42.0	+	1.0																	
	22	+	4	32.0	+	0.5	+	5	43.5	+	1.5																	
	23	+	4	33.0	+	1.0	+	5	44.5	+	1.0																	
	24	+	4	33.5	+	0.5	+	5	46.0	+	1.5																	
	25	+	4	35.0	+	1.5	+	5	4																			

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.	
1946	HAMILTON	S.C.		505			HAMILTON	S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23	+	4	55.5		0.6	+	7										
24	+	4	55.5		C.C.	+	7										
25	+	4	55.5		C.C.	+	7	05.0									
26	+	4	55.5		C.C.	+	7	05.6									
27	+	4	58.5		0.0	+	7	07.0	+	2.0							
28	+	4	58.0	+	0.5	+	7	07.5	+	0.5							
29	+	4	58.0		0.0	+	7	09.0	+	1.5							
30	+	4	57.0	+	1.0												
31																	

* 0.571 SEC AVERAGE DAILY RATE + 1.242 SEC AVERAGE DAILY RATE AVERAGE DAILY RATE
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.		YEAR	MAKE	TYPE		SERIAL NO.	
1946	HAMILTON	S.C.		505			HAMILTON	S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1	+	4	55.5	-	0.5	+	7	10.5	+	1.5							0700 Q.B.
2	+	4	56.0	+	0.5	+	7	11.5	+	1.0							0645 Q.B.
3	+	4	57.0	+	1.0	+	7	14.0	+	2.5							0615 Q.B.
4	+	4	57.0		0.0	+	7	15.0	+	1.0							0625 Q.B.
5	+	4	56.5	-	0.5	+	7	16.0	+	1.0							0645 Q.B.
6	+	4	56.5		0.0	+	7	17.0	+	1.0							0645 Q.B.
7	+	4	57.0	+	0.5	+	7	20.0	+	3.0							0815 Q.B.
8	+	4	57.0	+	0.0												0800 Q.B.
9	+	4	57.0	+	0.0	+	7	21.5	+	0.75							0630 Q.B.
10	+	4	57.5	+	0.5	+	7	23.0	+	1.5							0715 Q.B.
11	+	4	57.5	+	0.0	+	7	24.0	+	1.0							
12	+	4	58.0	+	0.5	+	7	25.5	+	1.5							
13	+	4	58.0	+	0.0	+	7	27.0	+	1.5							
14	+	4	58.5	+	0.5	+	7	28.0	+	1.0							
15	+	4	59.0	+	0.5	+	7	29.5	+	1.5							
16	+	4	59.0	+	0.25	+	7	30.5	+	0.8							1000 Q.B.
17	+	4	59.5	+	0.5	+	7	31.5	+	1.0							
18	+	5	00.0	+	0.5	+	7	33.5	+	2.0							
19	+	5	00.0	+	0.0	+	7	35.0	+	1.5							0705 M.B.
20	+	5	00.0	+	1.0	+	7	37.0	+	2.0							1945 Q.B.
21	+	5	01.0	+	0.0	+	7	38.0	+	1.0							2030 M.B.
22	+	5	01.5	+	0.5	+	7	38.5	+	0.5							0420 M.B.
23	+	5	02.0	+	0.5	+	7	39.0	+	0.5							0800 Q.B.
24																	
25	+	5	02.5	+	0.25	+	7	42.5	+	1.75							0900 Q.B.
26	+	5	02.5	+	0.0	+	7	43.5	+	1.00							1000 Q.B.
27	+	5	03.5	+	0.75	+	7	46.5	+	3.00							0800 Q.B.
28																	
29																	
30	+	5	03.5		00.0	+	7	48.5									0800 Q.B.
31																	

+ 0.266 SEC AVERAGE DAILY RATE + 1.266 SEC AVERAGE DAILY RATE AVERAGE DAILY RATE
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1967	HAMILTON	S.C.		505		S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10	+ 5 04.5	+ 0.1	+ 8 04.0	+ 1.4									1235	jc	
11	+ 5 04.5	-	+ 8 05.0	+ 1.0									0735	jc	
12	+ 5 04.5	-	+ 8 06.0	+ 1.0									0600	jc	
13	+ 5 04.5	-	+ 8 07.0	+ 1.0									0727	jc	
14	+ 5 05.0	+ 0.5	+ 8 09.0	+ 2.0									1725	jc	
15	+ 5 05.0	-	+ 8 10.5	+ 1.5									1730	jc	
16	+ 5 05.0	-	+ 8 12.0	+ 1.5									1625	jc	
17	CROSS 180 th MERIDIAN - NO 17 th														
18	+ 5 05.5	+ 0.5	+ 8 13.0	+ 1.0									1710	jc	
19	+ 5 05.5	-	+ 8 14.0	+ 1.0									1705	jc	
20	+ 5 05.5	-	+ 8 15.5	+ 1.5									1735	jc	
21	+ 5 06.0	+ 0.5	+ 8 17.0	+ 1.5									1930	jc	
22	+ 5 06.0	-	+ 8 18.0	+ 1.0									1725	jc	
23	+ 5 06.0	-	+ 8 19.0	+ 1.0									0700	jc	
24	+ 5 06.0	-	+ 8 20.5	+ 1.5									0600	jc	
25	+ 5 05.5	- 0.5	+ 8 21.5	+ 1.0									1725	jc	
26	+ 5 05.5	-	+ 8 22.5	+ 1.0									0510	jc	
27	+ 5 05.5	-	+ 8 24.0	+ 1.5											
28	+ 5 05.5	-	+ 8 25.0	+ 1.0											
29	+ 5 06.0	+ 0.5	+ 8 26.0	+ 1.0											
30	+ 5 06.0	-	+ 8 27.0	+ 1.0											
31	+ 5 06.0	-	+ 8 28.0	+ 1.0									0700	jc	

+ 0.053 AVERAGE DAILY RATE +1.566 AVERAGE DAILY RATE AVERAGE DAILY RATE
NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1967	HAMILTON	S.C.		505		S.C.		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
DAY	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1	+ 5 06.5	+ 0.5	+ 8 29.5	+ 1.5									0515	jc	
2	+ 5 08.0	+ 1.5	+ 8 31.0	+ 1.5									0530	jc	
3	+ 5 08.0		+ 8 32.0	+ 1.0											
4	+ 5 08.0		+ 8 33.5	+ 1.5											
5	+ 5 08.5	+ 0.5	+ 8 35.0	+ 1.5											
6	+ 5 08.5		+ 8 36.0	+ 1.0											
7	+ 5 08.5		+ 8 37.5	+ 1.5											
8	+ 5 08.5		+ 8 38.5	+ 1.0											
9	+ 5 09.0	+ 0.5	+ 8 39.0	+ 0.5											
10	+ 5 09.0		+ 8 40.0	+ 1.0									1105	jc	
11															
12															
13															
14	+ 5 09.5	+ 0.5	+ 8 44.0	+ 1.0									1630	jc	
15															
16															
17															
18	+ 5 08.5	- 1.0	+ 8 48.0	+ 1.0									0755	jc	
19															
20	+ 5 08.0	0.5	+ 8 50.5	+ 2.5									0755	jc	
21															
22															
23															
24															
25															
26	5 09.5	+ 1.5	8 57.5										0755	jc	
27	5 09.5	-	8 59.5	+ 2.0									0655	jc	
28	5 10.0	+ 0.5	9 01.0	+ 1.5									1855	jc	
29															
30															
31															

+ 0.125 AVERAGE DAILY RATE +1.125 AVERAGE DAILY RATE AVERAGE DAILY RATE
NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR		MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>				MAKE					
1967		TYPE <u>SC</u>				TYPE <u>SC</u>				TYPE					
		SERIAL NO. <u>505</u>				SERIAL NO. <u>11919</u>				SERIAL NO.					
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				LOCAL TIME TO NEAREST MINUTE	
MAR.		SUCCESSIVE DAILY RATES				SUCCESSIVE DAILY RATES				SUCCESSIVE DAILY RATES					
DAY		$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	TIME	INITIALS
1		+	5	10.0	-			+	9	02.5	+	1.5		0645	jc
2		+	5	10.0	-			+	9	03.5	+	1.0		0655	jc
3		+	5	10.0	-			+	9	04.5	+	1.0		0655	jc
4		+	5	10.0	-			+	9	05.0	+	1.0		0650	jc
5		+	5	10.0				+	9	06.5	+	0.8		0655	jc
6		+	5	10.0				+	9	07.5	+	1.0		0650	jc
7		+	5	10.0				+	9	08.5	+	1.0		0730	jc
8		+	5	10.5	+	5		+	9	10.0	+	1.5		0645	jc
9		+	5	10.5				+	9	11.5	+	1.5		0655	jc
10		+	5	11.0	+	0.5		+	9	12.5	+	1.0		0719	jc
11		+	5	11.5	+	0.5		+	9	14.0	+	1.5		0640	jc
12		+	5	12.0	+	0.5		+	9	15.5	+	1.5		0747	jc
13		+	5	12.0	-			+	9	16.5	+	1.0		0655	jc
14		+	5	12.5	+	0.5		+	9	18.0	+	1.5		0670	jc
15		+	5	13.5	+	1.0		+	9	19.5	+	1.5		0655	jc
16								+	9	21.5	+	2.0		0625	jc
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31		+	5	15.0				+	9	43.5					

AVERAGE DAILY RATE

AVERAGE DAILY RATE

AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

10-00072-1

DATE		A				B				C				OBSERVATION	
YEAR		MAKE <u>HAMILTON</u>				MAKE <u>HAMILTON</u>				MAKE					
1967		TYPE <u>SC</u>				TYPE <u>SC</u>				TYPE					
		SERIAL NO. <u>505</u>				SERIAL NO. <u>11919</u>				SERIAL NO.					
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				LOCAL TIME TO NEAREST MINUTE	
APRIL		SUCCESSIVE DAILY RATES				SUCCESSIVE DAILY RATES				SUCCESSIVE DAILY RATES					
DAY		$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	MIN.	SECONDS	TIME	INITIALS
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11		+	5	15.5				+	9	58.5					
12		+	5	16.0	+	0.5		+	10	00.0	+	1.5		1825	jc
13		+	5	16.0	+	-		+	10	01.5	+	1.5		1815	jc
14		+	5	16.0	-			+	10	03.0	+	1.5		1830	jc
15		+	5	16.0	-			+	10	04.5	+	1.5		1825	jc
16		+	5	16.0	-			+	10	06.0	+	1.5		1830	jc
17		+	5	16.0	-			+	10	07.0	+	1.0		0745	jc
18															
19		+	5	16.5	+	0.5		+	10	08.5	+	1.5		1820	jc
20		+	5	16.5	-			+	10	09.5	+	1.0		1800	jc
21		+	5	17.0	+	0.5		+	10	11.0	+	1.5		1810	jc
22		+	5	17.5	+	0.5		+	10	12.5	+	1.5		1800	jc
23		+	5	18.0	+	0.5		+	10	14.0	+	1.5		0630	jc
24															
25															
26															
27															
28		+	5	17.0				+	10	19.5				1620	jc
29															
30															
31															

AVERAGE DAILY RATE

AVERAGE DAILY RATE

AVERAGE DAILY RATE

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

10-00072-1

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.					
1967	HAMILTON	SC		505		SC		11919									
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1																	
2																	
3																	
4	+	5	18.0			+	10	27.0								0530	je
5	+	5	18.0			+	10	28.0	+	1.0						0530	je
6	+	5	18.0			+	10	29.0	+	1.0						0515	je
7	+	5	18.5	+	0.5	+	10	31.0	+	2.0						1915	je
8	+	5	19.0	+	0.5	+	10	32.5	+	1.5						1620	je
9	+	5	20.0			+	10	34.0	+	1.5						1000	W.B.
10	+	5	20.0			+	10	35.0	+	1.0						1100	W.B.
11	+	5	20.0			+	10	36.0	+	1.0						0700	je
12	+	5	20.0			+	10	37.0	+	1.0						0615	je
13	+	5	20.5	+	0.5	+	10	38.5	+	1.5						0640	je
14	+	5	20.5	+		+	10	40.0	+	1.5						0650	je
15	+	5	20.5	+		+	10	41.0	+	1.0						0555	je
16	+	5	21.0	+	0.5	+	10	42.5	+	1.5						0600	je
17	+	5	21.0			+	10	44.0	+	1.5						0605	je
18						+	10	45.0	+	1.0						0655	je
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.					
1967	HAMILTON	SC		505		SC		119190									
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23	+	5	30			+	11	32.5									
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR	1967	MAKE _____ TYPE _____ SERIAL NO. _____				MAKE _____ TYPE _____ SERIAL NO. _____				MAKE _____ TYPE _____ SERIAL NO. _____					
MONTH	10/14	ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				LOCAL TIME TO NEAREST MINUTE	
DAY		$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	TIME	INITIALS
1															
2															
3															
4															
5		+	5	54.5		+									
6		+	5	35.0	+ 0.5	+	11	59						0600	JH
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															

DATE		A				B				C				OBSERVATION	
YEAR	1967	MAKE _____ TYPE _____ SERIAL NO. _____				MAKE _____ TYPE _____ SERIAL NO. _____				MAKE _____ TYPE _____ SERIAL NO. _____					
MONTH	Nov	ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				ERROR RELATIVE TO G.C.T. $\pm$ = FAST $\pm$ = SLOW				LOCAL TIME TO NEAREST MINUTE	
DAY		$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	$\pm$	MIN.	SECONDS	SUCCESSIVE DAILY RATES	TIME	INITIALS
1		+	6	06.0		+	1	41.0							
2		+	6	06.0		+	1	41.5	0.5					0455	mjb
3		+	6	06.0		+	1	42.0	0.5					0455	mjb
4		+	6	06.0		+	1	43.0	1.0					0455	mjb
5		+	6	06.0		+	1	44.0	1.0					0455	mjb
6		+	6	06.0		+	1	47.0	3.0					0455	mjb
7		+	6	06.0		+	1	47.0						0440	mjb
8		+	6	07.5	0.5	+	1	47.5	0.5					0500	mjb
9				150 th -12				151 th -12							
10		+	6	07.0		+	1	48.0	0.5					0455	mjb
11		+	6	07.0		+	1	50.0	1.3					0455	mjb
12		+	6	08.5	1.5	+	1	52.0	2.0					0455	mjb
13		+	6	08.0	-0.5	+	1	52.0						0500	mjb
14		+	6	08.0		+	1	53.0	1.0					0500	mjb
15		+	6	08.5	0.5	+	1	54.5	1.5					0500	mjb
16		+	6	09.0	0.5	+	1	55.0	0.5					0500	mjb
17		+	6	09.5	0.5	+	1	56.0	0.5					0500	mjb
18		+	6	10.0	0.5	+	1	58.0	0.5					0500	mjb
19		+	6	10.0	0.0	+	1	59.0	1.0					0500	mjb
20		+	6	10.0	0.0	+	2	00.0	0.0					0500	mjb
21		+	6	10.0	0.0	+	2	01.0	1.0					0600	mjb
22		+	6	11.0	1.0	+	2	02.0	1.0					0600	mjb
23		+	6	11.0	0.0	+	2	02.5	0.5					0500	mjb
24		+	6	11.5	0.5	+	2	03.0	0.5					0500	mjb
25		+	6	12.0	0.5	+	2	04.0	0.0					0500	mjb
26		+	6	12.5	0.5	+	2	05.0	1.0					0500	mjb
27															
28															
29		+	6	13.0	0.5	+	2	08.0	1.0					1340	mjb
30															
31															

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION			
YEAR 19 67		MAKE TYPE SERIAL NO.				MAKE TYPE SERIAL NO.				MAKE TYPE SERIAL NO.							
MONTH DEC	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1																	
2	+	6	15.5	+	0.5	+	2	12.0	+	1.0						0900	WP.
3	+	6	15.5	+	0.0	+	2	12.0		0.0						0900	
4	+	6	15.5	+	0.0	+	2	12.0		0.0						0900	
5	+	6	15.5		0.0	+	2	12.5	+	0.5						0900	
6	+	6	15.5		0.0	+	2	13.5	+	1.0						0900	
7	+	6	15.5		0.0	+	2	14.0	+	0.5						0900	
8	+	6	15.5		0.0	+	2	15.0	+	1.0						0900	
9	+	6	15.5		0.0	+	2	16.0	+	1.0						0900	
10	+	6	16.0	+	0.5	+	2	17.0	+	1.0						0900	
11	+	6	17.0	+	1.0	+	2	18.5	+	1.5						0900	
12	+	6	17.5	+	0.5	+	2	19.5	+	1.0						0900	
13	+	6	17.5	+	0.0	+	2	20.5	+	1.0						0900	
14	+	6	17.5		0.0	+	2	21.0	+	0.5						0900	
15	+	6	18.0	+	0.25	+	2	23.0	+	1.0							
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	

DATE		A				B				C				OBSERVATION			
YEAR 19 68		MAKE TYPE SERIAL NO.				MAKE TYPE SERIAL NO.				MAKE TYPE SERIAL NO.							
MONTH JAN	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16	+	5	47.5			+	2	53.0								1000	WP.
17	+	5	46.5		1.0	+	2	56.0		3.0						0930	WP.
18	+	5	45.5		1.0	+	2	57.0		1.0						0900	WP.
19	+	5	44.5		1.0	+	2	57.5		0.5						0830	WP.
20																	
21																	
22	+	5	43.0			+	2	57.5								0830	FD.
23	+	5	42.0		1.0	+	2	59.0		1.5						0925	AJM
24	+	5	41.0		1.0	+	3	00.5		1.5						0840	AJM
25	+	5	38.0		3.0	+	3	01.5		1.0						0830	WP.
26	+	5	40.0	+	2.0	+	3	01.5		0.						1320	FD.
27																	
28																	
29	+	5	33.0			+	3	05.5								0820	FD.
30	+	5	32.0		1.0	+	3	06.5	+	1.0						0830	FD.
31	+	5	31.5		0.5	+	3	08.0	+	1.5						0815	FD.

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.					
1968	HAMILTON	P.S.		505		P.S.		11919									
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1	+	05	30.5	-	1.0	+	03	09.5	+	1.5						0830	FD
2	+	05	29.5	-	1.0	+	03	10.5	+	1.0						0825	FD
3																	
4																	
5	+	05	26.5	-	1.0	+	03	13.5	+	1.0						0800	mjt
6	+	05	24.5	-	2.0	+	03	14.5	+	1.0						0810	FD
7	+	05	23.5	-	1.0	+	03	15.5	+	1.0						0840	mjt
8	+	05	21.5	-	2.0	+	03	16.5	+	1.0						0905	mjt
9	+	05	20.0	-	1.5	+	03	17.5	+	1.0						0830	mjt
10	+	05	16.0	-													
11																	
12																	
13	+	05	16.0	-	1.0	+	03	22.0	+	1.2						0915	mjt
14	+	05	14.5	-	1.5	+	03	23.0	+	1.0						0825	mjt
15	+	05	13.5	-	1.0	+	03	25.0	+	2.0						0835	mjt
16	+	05	12.5	-	1.0	+	03	26.0	+	1.0						0740	mjt
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27	+	05	01.0	-	1.0	+	03	42.0	+	1.5						0825	wp
28	+	04	58.5	-	0.5	+	03	43.5	+	1.5						0830	wp
29	+	04	59.0	-	0.5	+	03	44.0	+	0.5						0825	wp
30																	
31																	

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

16-66579-1

DATE		A				B				C				OBSERVATION			
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.					
1966	HAMILTON	P.S.		505		P.S.		11919									
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW			SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE	
DAY	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	TIME	INITIALS
1	+	04	56.5	-	0.5	+	02	46.0	+	06.0						0835	wp
2																	
3																	
4	+	04	56.5	-	0.5	+	03	49.5	+	04.0						0835	wp
5																	
6	+	04	50.0	-	3.2	+	03	52.0	+	01.2						0900	wp
7	+	04	49.0	-	1.0	+	03	53.0	+	1.0						0825	wp
8	+	04	47.5	-	1.5	+	03	54.5	+	1.5						0830	wp
9																	
10																	
11	+	04	42.5	-	1.5	+	03	56.5	+	1.5						0825	wp
12	+	04	41.0	-	1.5	+	04	00.0	+	2.0						1000	wp
13	+	04	41.0	-	0.0	+	04	01.0	+	1.0						0900	wp
14	+	04	39.5	-	1.5	+	04	02.0	+	1.0						0900	wp
15	+	04	37.0	-	2.5	+	04	04.0	+	2.0						0900	wp
16																	
17																	
18	-	01	32.0	-	1.5	+	04	07.0	+	1.0						0606	wp
19	+	04	30.5	-	1.5	+	04	06.0	+	1.0						0614	wp
20	+	04	26.5	-	2.0	+	04	09.0	+	1.0						0755	wp
21	+	04	27.5	-	1.0	+	04	04.0	+	1.0						1255	wp
22	+	04	26.5	-	1.0	+	04	12.0	+	3.0						0750	wp
23																	
24																	
25	+	04	25.0	-	0.4	+	04	13.0	+	0.5						0800	wp
26	+	04	24.5	-	1.0	+	04	13.5	+	0.5						0810	wp
27	+	04	24.5	-	0.0	+	04	14.0	+	0.5						0900	wp
28	+	04	24.5	-	0.0	+	04	14.0	+	0.0						0810	wp
29	+	04	24.0	-	0.5	+	04	14.0	+	0.0						0850	wp
30																	
31																	

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

16-66579-1

DATE		A				B				C				OBSERVATION		
YEAR	MAKE	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE		
MONTH	TYPE	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1968	HAMILTON															
APR	SC															
	SERIAL NO. 505															
DAY															TIME	INITIALS
1		+	04	23.5			+	04	17.0	+	1.0					
2		+	04	23.5		0.0	+	04	18.0	+	1.0					
3		+	04	24.5			+	04	18.							
4		+	04	24.5			+	04	19.0							
5		+	04	24.5			+	04	21.0							
6																
7																
8		+	04	25.0			+	04	21.5							
9		+	04	25.0		0.0	+	04	21.5		0.0					
10		+	04	25.0		0.0	+	04	21.5		0.0					
11		+	04	25.0		0.0	+	04	22.0		0.5					
12		+	04	25.0		0.0	+	04	23.0		0.0					
13																
14																
15		+	04	23.0		0.1	+	04	23.0		0.5					
16		+	04	22.0		1.0	+	04	24.0		1.0					
17																
18																
19		+	04	19.5		-0.8	+	4	27.0	+	1.0					
20																
21																
22		+	04	14.0		-1.8	+	4	30.0	+	1.0					
23																
24		+	04	14.0		0.0	+	4	32.5	+	2.5					
25		+	04	14.0		0.0	+	4	32.0		-0.5					
26		+	04	14.0		0.0	+	4	31.0		-1.0					
27																
28																
29		+	04	13.0		-0.3	+	4	31.5	+	0.2					
30		+	04	13.0		0.0	+	4	31.0		-0.5					
31																

-0.38 sec

AVERAGE DAILY RATE +0.48 sec

NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION		
YEAR	MAKE	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE		
MONTH	TYPE	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1968	HAMILTON															
APR	SC															
	SERIAL NO. 505															
DAY															TIME	INITIALS
1		+	04	13.0			+	4	31.0							
2																
3		+	04	10.0		-1.5	+	4	33.5	+	1.2					
4		+	04	09.0		-1.0	+	4	35.0	+	1.5					
5		+	04	05.0		-3.0	+	4	35.0		0.0					
6		+	04	04.0		-1.0	+	04	37.0	+	1.0					
7		+	04	03.0		-1.0	+	04	37.0	+	1.0					
8		+	04	01.0		-2.0	+	04	38.5	+	1.5					
9																
10		+	03	59.0		-2.0	+	04	40.5	+	2.0					
11		+	03	57.0		-2.0	+	04	42.0	+	1.5					
12		+	03	55.0		-2.0	+	04	43.0	+	1.0					
13		+	03	54.0		-1.0	+	04	44.0	+	1.0					
14		+	03	53.0		-1.0	+	04	45.0	+	1.0					
15		+	03	50.5		-2.5	+	04	46.0	+	1.0					
16		+	03	48.0		-2.5	+	04	47.5	+	1.5					
17																
18																
19		+	03	44.0		-1.3	+	04	50	+	0.8					
20																
21																
22																
23		+	03	37.0		-2.3	+	04	54.0	+	1.3					
24																
25		+	03	31.0		-1.5	+	04	57.0	+	1.5					
26		+	03	27.0		-1.0	+	04	58.5	+	1.5					
27		+	03	30.5		-2.5	+	04	59.0	+	0.5					
28		+	03	28.5		-2.0	+	04	59.5	+	0.5					
29																
30		+	03	26.0		-1.5	+	05	02.0	+	0.5					
31		+	03	24.5		-1.5	+	05	04.0	+	2.0					

AVERAGE DAILY RATE AVERAGE DAILY RATE AVERAGE DAILY RATE
NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1965	HAMILTON	SC		505		SC		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
JUNE	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1	+ 3	22.0	- 2.5	+ 5	5.0	+ 1.0									
2	+ 3	20.0	- 2.0	+ 5	6.0	+ 1.0									
3	+ 3	18.0	- 2.0	+ 5	7.5	+ 1.5									
4	+ 3	16.0	- 1.0	+ 5	11.0	+ 2.0									
5	+ 3	14.0	- 2.0	+ 5	13.0	+ 2.0									
6	+ 3	12.0	- 2.0	+ 5	14.0	+ 1.0									
7	+ 3	10.0	- 2.0	+ 5	14.5	+ 0.5									
8															
9															
10															
11															
12															
13															
14	+ 2	57.0	- 1.8	+ 5	24.0	+ 1.3									
15															
16															
17	+ 2	52.0	- 1.7	+ 5	28.0	+ 0.4									
18	+ 2	52.0	- 0.0	+ 5	26.0	+ 0.0									
19	+ 2	50.0	- 2.0	+ 5	25.0	+ 0.0									
20	+ 2	49.0	- 1.0	+ 5	28.0	+ 3.0									
21	+ 2	47.0	- 2.0	+ 5	28.5	+ 0.5									
22															
23															
24	+ 2	42.0	- 1.6	+ 5	31.0	+ 0.8									
25	+ 2	40.0	- 2.0	+ 5	33.0	+ 2.0									
26	+ 2	37.0	- 3.0	+ 5	33.0	0.0									
27															
28															
29															
30															
31															

DATE		A				B				C				OBSERVATION	
YEAR	MAKE	TYPE		SERIAL NO.		TYPE		SERIAL NO.		TYPE		SERIAL NO.			
1968	HAMILTON	SC		505		SC		11919							
MONTH	ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW	SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		ERROR RELATIVE TO G.C.T. $\pm$ FAST $\pm$ SLOW		SUCCESSIVE DAILY RATES		LOCAL TIME TO NEAREST MINUTE			
JUNE	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	$\pm$ MIN. SECONDS	$\pm$ SECONDS	TIME	INITIALS	
1	+ 2	30.0	- 1.3	+ 5	38.5	+ 1.2							0825	RJA	
2															
3	+ 2	25.0	- 2.5	+ 5	40.5	+ 1.0							0845	RJA	
4															
5															
6															
7															
8															
9	+ 2	09.5	- 2.6	+ 5	50.0	+ 1.6							1030	RJA	
10															
11	+ 2	04.5	- 2.5	+ 5	53.0	+ 1.5							0840	RJA	
12															
13															
14															
15	+ 1	54.0	- 2.6	+ 5	57.5	+ 1.1							0830	RJA	
16															
17	+ 1	50.0	- 2.0	+ 6	00.5	+ 1.5							0900	RJA	
18															
19	+ 1	45.0	- 2.5	+ 6	02.0	+ 0.75							0830	RJA	
20															
21															
22	+ 1	37.5	- 2.5	+ 6	06.0	+ 1.3							0915	RJA	
23															
24	+ 1	32.5	- 2.5	+ 6	10.0	+ 2.0							0900	RJA	
25															
26	+ 1	28.0	- 2.2	+ 6	13.0	+ 1.5							0820	RJA	
27															
28															
29															
30															
31															

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

AVERAGE DAILY RATE -2.50 AVERAGE DAILY RATE $+1.45$ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION		
YEAR	19	MAKE	TYPE			MAKE	TYPE			MAKE	TYPE			LOCAL TIME TO NEAREST MINUTE		
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			TIME	INITIALS	
DAY		$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
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18																
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20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30																
31																

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

DATE		A				B				C				OBSERVATION		
YEAR	19	MAKE	TYPE			MAKE	TYPE			MAKE	TYPE			LOCAL TIME TO NEAREST MINUTE		
MONTH		ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			ERROR RELATIVE TO G.C.T. $\pm$ = FAST $-$ = SLOW	SUCCESSIVE DAILY RATES			TIME	INITIALS	
DAY		$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS	$\pm$	MIN.	SECONDS	$\pm$	SECONDS
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
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27																
28																
29																
30																
31																

AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____ AVERAGE DAILY RATE _____
 NOTE: FOR COMPUTATION OF AVERAGE DAILY RATE SEE PARAGRAPH 5 UNDER INSTRUCTIONS.

CONSEC. NO.

CH

TITLE:

FAS

YEAR	N. M. NO. M	PARA- GRAPH S
8/17	0	30.5
8/18	0	31.0
9/1	0	50.0
9/2	0	51.0
9/3	0	52.0
9/4	0	53.0
9/5	0	54.0
9/6	0	55.0
9/7	0	55.5
9/9	0	56.0
9/10	0	57.0
9/11	0	57.5
9/12	0	58.0

CHART/PUB CORRECTION RECORD N.

B Fast

YEAR	N. M. NO. M	PARA- GRAPH S
9/13	0	59.0
9/15	1	01.5
9/17	1	02.5
9/18	1	04.0
9/19	1	05.0
9/24	1	08.5
9/30	1	12.0
10/3	1	15.0
10/4	1	15.5
10/7	1	17.0
10/8	1	18.0
10/9	1	18.0
10/11	24	19.5
10/12	1	20.5
10/13	1	24.5
10/13	1	22.5

B

1967 EAST

N. M. NO.	PARA- GRAPH	CORR M
		DATE
10	04 ^m	21.5 ^s
11	04 ^m	22.0 ^s
12	04 ^m	23.0 ^s
15	04 ^m	24.0 ^s
16	04 ^m	25.0 ^s
19	04 ^m	27.0 ^s
22	04 ^m	30.0 ^s
24	04 ^m	32.5
25	04 ^m	32.0
26	04 ^m	31.0
29	04 ^m	31.5
30	04 ^m	31.0

ICE TO MARINERS COF

YEAR	N. M. NO.	PARA- GRAPH
MAY		FAST
1	^{min} 04	31.05 sec
4	04	35.0
5	04	35.0
6	04 M	37.0
7	04 M	37.0
8	04 M	38.5
10	04 M	40.5
11	04 M	42.0
12	04 M	43.0
13	04 M	44.0
14	04 M	45.0
15	04 M	46.0
16	04	47.5
19	04	50.0
21	04	54.0

B

1968

FAST

NOTICE TO MARINERS

YEAR MAY 1968	N. M. NO.	PARA- GRAPH
1	4	31.0
3	4 ^m	33.5 ^{sec}
4	4 ^m	35.0 ^s
25	04 ^m	57.0 ^s
26	04	58.0
27	04	59.0
28	04	59.5

NO.	CHART OR PI
-----	-------------

A:

1467 FAST

N. M. NO.	PARA- GRAPH	CORR M
		DATE
10	04 ^m	25 ⁵
11	04 ^m	25 ⁵
12	04 ^m	25 ³
15	04 ^m	23 ³
16	04 ^m	22 ³
19	04 ^m	19.5
22	04 ^m	14.0
24	04 ^m	14.0
25	04 ^m	14.0
26	04 ^m	14.0
29	04 ^m	13.0
30	04 ^m	13.0

CONSEC. NO.

A

CH

TITLE:

FAST

1967 YEAR	N. M. NO.	PARA- GRAPH
11/25	06	12.0
11/26	06	12.5
11/29	06	13.0
12/2	06	15.5
12/3	06	15.5
12/4	06	15.5
12/5	06	15.5
12/6	06	15.5
12/7	06	15.5
12/8	06	15.5
12/8	06	15.5
12/9	06	16.0
12/10	06	17.0

POSITION DATE

CORRECTED T

"B"

FAST

CORRECTIONS

CORRECTION FEBRUARY		YEAR
DATE	INITIALS	
DAY	LIN	JEC
1	03	09.5
2	03	10.5
5	03	13.5
6	03	14.5
7	03	15.5
8	03	16.5
9	03	17.5
13	03	22.5
14	03	23.0
15	03	25.0
16	03	26.0
27	03	42.0
28	03	PER 100 73.0

DIRECTIONS (CONT.)

[illegible]

Fast

NOTICE TO MARINERS

1967 YEAR	N. M. NO.	PARA- GRAPH
11/25	02	04.0
11/26	02	05.0
11/29	02	08.0
12/2	02	12.0
12/3	02	12.0
12/4	02	12.0
12/5	02	12.5
12/6	02	13.5
12/7	02	14.0
12/8	02	15.0
12/9	02	16.0
12/10	02	18.5
12/11	02	19.5

CONSEC. NO.

CH

FAST.

TITLE:

"A"

1968 YEAR	N. M. NO.	PARA- GRAPH
1/16	05	47.5
1/17	05	46.5
1/18	05	45.5
1/19	05	44.5
1/22	05	43.0
1/23	05	42.0
1/24	05	41.0
1/25	05	38.0
1/26	05	40.0
1/29	05	33.0
1/30	05	32.0
1/31	05	31.5

IT.) * A * Fast

YEAR	N. M. NO. M	PARA- GRAPH S
9/13	5	52.5
9/15	5	53.0
9/17	5	53.0
9/18	5	54.0
9/19	5	54.0
9/24	5	55.0
9/30	5	56.5
10/3	5	57.5
10/4	5	57.5
10/7	5	58.5
10/8	5	59.0
10/9	5	59.5
10/11	6	00.5
10/12	6	00.5
10/13	6	01.0
10/13	6	01.5

"A"

FAST

YEAR	N. M. NO. m	PARA- GRAPH S
8/17	5	46.5
8/18	5	46.5
8/1	5	50.0
9/2	5	50.0
9/3	5	50.0
9/4	5	50.0
9/5	5	51.0
9/6	5	51.0
9/7	5	51.0
9/9	5	51.0
9/10	5	51.5
9/11	5	51.5
9/12	5	52.0

IRU N. TO M. NO. OR EFFECTIVE

"A"

FAST

FEB. 1968

N. M. NO.	PARA- GRAPH	CORR M
		DATE
DAY	MIN	SEC
1	05	30.5
2	05	27.5
5	05	26.5
6	05	24.5
7	05	23.5
8	05	21.5
9	05	20.5
13	05	16.0
14	05	14.5
15	05	13.5
16	05	12.5
27	05	01.0
28	04	59.5

EDITION NO.

E

Fast

"B"

NOTICE TO MARINERS

1968 YEAR	N. M. NO.	PARA- GRAPH
1/16	02	53.0
1/17	02	56.0
1/18	02	57.0
1/19	02	57.5
1/22	02	57.5
1/23	02	59.0
1/24	03	00.5
1/25	03	01.5
1/26	03	01.5
1/29	03	05.5
1/30	03	06.5
1/31	03	08.0