

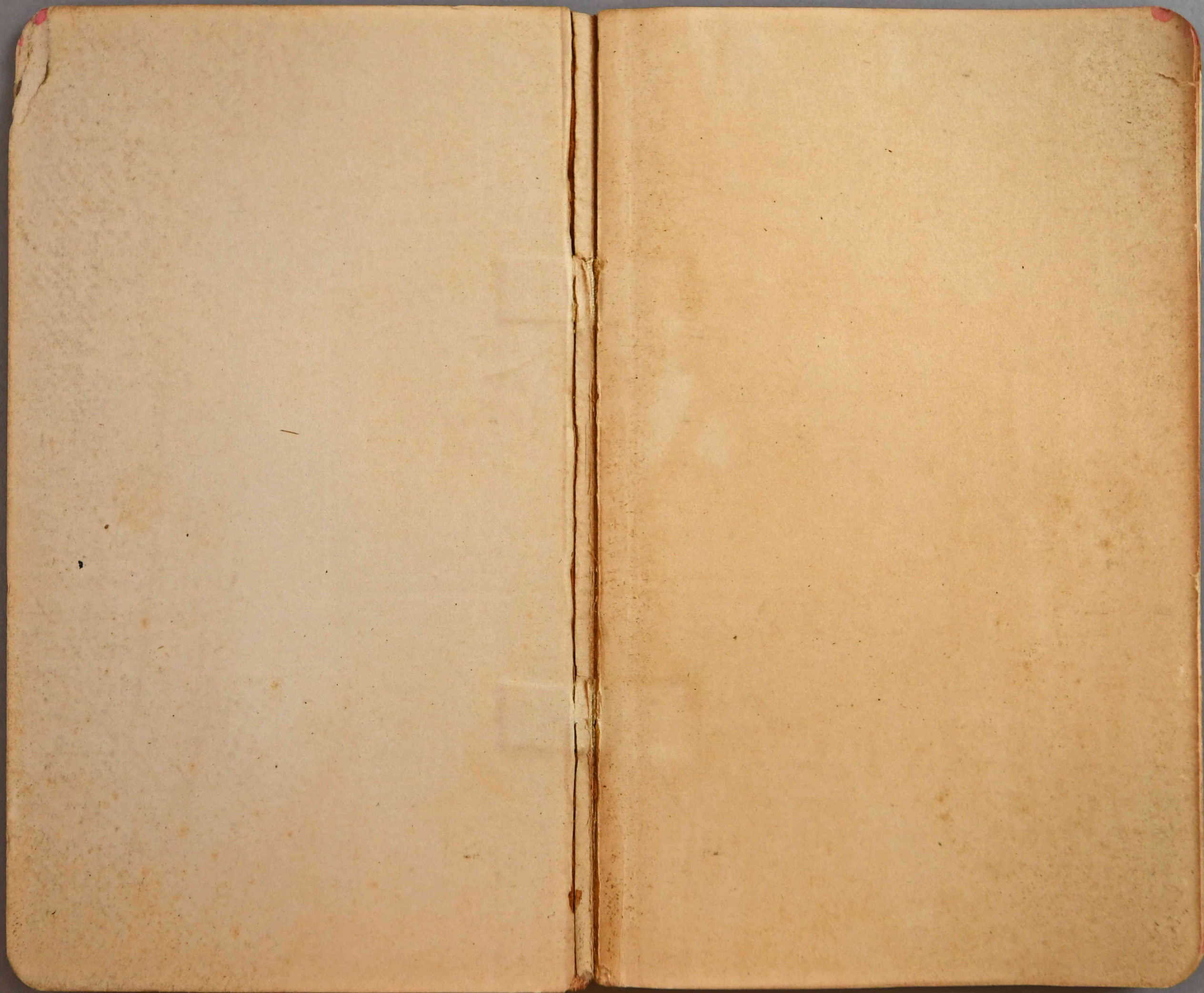
1911

Wood Pigeon

Band.

Experiments.







Saturday June 24 1911

No 277. Gasoline Launch "Isabel"  
for Gen L. C. Ledyard.

30' o.a. 7' 4 beam. with 52 HP Buffalo  
motor. was tried a number of  
times between Jun 24 - 29 and the  
motor was so noisy in unbalanced.  
decided to change it for another.

Settled on a "Sterling" 6 cyl. 5:1  
having a break test of 59 HP at 6000 rev and  
85 at 9000 rev. weighing lbs.

Ordered Jun 29 and received July 3.

With Buffalo engine boat made  $11\frac{1}{2}$   
miles per h. at about 5650 rev per m.

Boat launched evening of July 7 with  
Sterling motor installed. and tried  
that evening. making about 17 miles p.h.



Friday July 7, 1911

No. 278. Westward

Galoline launch for  
A. J. Cochran, owner of Westward, 204  
35' o.a. 7'4" beam on same  
moulds as #277 - but 5' longer  
and lighter built. Is fitted  
with a 4 cyl "Ideal" motor of  
18-25 H.P.

And in harbor's course made 10.5 miles  
per hour. with about 665 rev of  
a 20 1/2 x 23" propeller. Went to  
Newport in pm of July 7.

Trial of No. 277 "Isabel"

Monday July 10, 1911

Sterling Engine Model B, 6 cyl, 5 1/2 x 6", 4 cycle.

	time for 1/2 mile	revs.
North	1-51 3/5	1250
S	1-57 1/5	1251
N	1-55 3/5	1248
S	1-55	1251
Sum	7-39.4	4990
av. per mile	3-34.7	2495

Slow speed going north

time for 1/2 mi.	rev.
4-26 1/5	1073

(Propeller 36" pitch)  
dia 24" 3 blades

$$\text{Speed at full power} = \frac{1}{\frac{214.7}{60 \times 60}} \times 16.75 \text{ mi. per hr.}$$

$$\text{Slip at full power} = \frac{3 \times 2495 - 5280}{3 \times 2495} = \frac{7485 - 5280}{7485} = \frac{2205}{7485} = 29.5\%$$

$$\text{Speed at lowest power} = \frac{1}{\frac{2 \times 266.2}{60 \times 60}} = 6.75 \text{ mi. per hr.}$$

$$\text{Slip at lowest power} = \frac{3 \times 2146 - 5280}{3 \times 2146} = \frac{6438 - 5280}{6438} = \frac{1158}{6438} = 18\%$$

Over.



On Sept 16 1911 the actual pitch of the first propeller for #281, which was from the same pattern as the "Isabels", was found to be 32.3" instead of 36"

This would change the slip as follows.

$$\text{Full speed; } 1 - \frac{5280}{\frac{32.3}{12} \times 2495} = 1 - .788 = 21.2\%$$

$$\text{Low speed; } 1 - \frac{5280}{\frac{32.3}{12} \times 2146} = 1 - .915 = 8.5\%$$

Wednesday Aug 30. 1911

Trial of "Sterling" #281  
40' ca., 7'-4" beam, 45-65 HP, 6 cyl Sterling engine  
propeller 3 blades 24" dia x 32.3" pitch

	time (1 mile)	RPM
S	3-5	
N	3-12	740
S	3-5	448
N	3-12	746
average	3-9 = 3.15 min.	745

$$\text{Speed} = \frac{1}{\frac{3.15}{60}} = 19.06 \text{ mi per hr.}$$

$$\text{Slip} = 1 - \frac{\frac{5280}{\text{ft. per min.}}}{\text{RPM} \times \text{pitch}} = 1 - \frac{88 \times 19.06}{745 \times \frac{32.3}{12}} = 1 - \frac{.837}{.697} = 16.2\%$$

Trial of "Sterling" Sept 16, 1911  
propeller 3 blades 22' dia x ~~31.5~~<sup>32.0</sup>"

	time ( $\frac{1}{2}$ mile)	rev. ( $\frac{1}{2}$ mile)
N	1-35	1194
S	1-34	1194
av.	1-34.5 = 1.575 min.	1194

$$\text{Speed} = \frac{\frac{1}{2}}{\frac{1.575}{60}} = 19.05 \text{ mi per hr.}$$

$$\text{Slip} = 1 - \frac{5280 \div 2}{32.0 \times \frac{31.5}{12} \times 1194} = 1 - \frac{.829}{.843} = 17.1\% \text{ ?}$$

Over.



	time $\frac{1}{2}$ mi.	revs. $\frac{1}{2}$ mi.
N	1-36	1232
S	1-37	1244
average	1-36.5 = 1.609 min.	1238

$$\text{Speed } \frac{\frac{1}{2}}{\frac{1.609}{60}} = 18.7 \text{ mi. per hr.}$$

$$\text{Slip } 1 - \frac{\frac{1}{2} \times 5280}{\frac{31.5}{12} \times 1238} = 1 - \frac{.69}{.800} = \frac{20.0}{18.6} \%$$

Tuesday Oct 2 1911

#282, Gasoline launch for J.P. Morgan 35' o.a. 7'4 beam with 45-65HP, 6 cyl Sterling engine. Propeller 3 blades 22" dia x 32" pitch; the boat was hauled out in the afternoon and the blades were found to be bent back about  $2\frac{1}{2}$ " due to the reaction on the water, this may have changed the pitch.

Weight without fuel and equipment  
5000 lbs.

	Time $\frac{1}{2}$ mile	R.P.M.
N	1-33	
S	1-33	727
N	1-34	742
S	1-32	734
av.	1-33	

Speed 19.34 mi. per hr.



# Ferry Boat "Inca"

# 280

Nov. 11, 1911.

designed pitch of propeller 44 ins.

over Sandy point course 3 naut. miles.

	total rev.	time	Pressures.			
			boiler	HP	LP	V
down	6447	18-5	200	130	17	23 in.
up	7879	22-10	"	"	"	21½ in.

	speed.	slip.
down	9.55 knots	22.7%
up	8.12	36.8%

Wind WSW about 2.5 mi. per hr.  
Tide strong ebb.

# Official Trial of "Inca"

Nov. 15, 1911

The wharf was left at about 12-10 P.M. The two hour run was started immediately (12-16); during this time the total revolutions were counted, the initial reading of the counter was 6033 and the final reading, <sup>at 2-16 PM U.S.</sup> 2195, giving a total of 43838 as the counter repeated 4 times.

Average R.P.M. for 2 hrs., 366

One boiler was used. It steamed very easily.

At first some runs were made over the mile course in the harbor, then she went down the bay to the government nautical mile course and made one set of runs. Here about 10 pounds more steam pressure was carried on account of the rough water.

Runs in Bristol Harbor. stat. mi. per hr.					
	time	revolutions	r.p.m.	speed	slip.
N	5-55.2	1173 ( <sup>½</sup> mi.)	396	10.13	38.5%
S	6-04.8	2174	358	9.87	33.5
N	5-46.2	2055	356	10.40	29.8
S	5-49.4	2134	366	10.28	32.5
N	5-53.0	2120	360	10.18	<del>33.0</del>
S	5-50.6	2134	366	10.27	32.5
Sum		2202	61.13	198.8	
Average		367	10.19	33.13%	



Runs over Government course

	time	revolutions	k.p.m.	Speed knots	slip.
S	6-41.0	2528	378	8.97	34.4%
N	6-20.6	2356	371	9.45	29.5%
	average		374.5	9.21	31.95%

The wind was blowing about 30 mi. per hr. W. N. W. In the harbor there was very little tide; down the bay it was slight flood.

After the two hour run she went into the Training Station and took on board 500 men; this increased the draft 1'-1 $\frac{3}{4}$ " forward and 0'-3 $\frac{1}{2}$ " aft.

While at the Training Station the other boiler was fired up, and a test of the fire pump was made using both boilers. With a 1 $\frac{3}{4}$ " nozzle the water pump made a little under 300 k.p.m.

With a 2 $\frac{1}{2}$ " nozzle the pump made about 320 k.p.m. and the water pressure was about 90 lbs.

unch for Steam

12 sec  
 15 calm  
 3.5 Speed 18.6 mi per hr.  
 11 Wind SW  
 about 12 mi per hr.  
 18  
 4.5 Speed 18.5 mi per hr.

calm

3.9 mi per hr.



time	B	E	R	V	R amp
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12-25	185	135	19	20	
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12-28	180	135	19	22	
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12-32	185	135	19	22	79
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12-35	190	140	20	22	
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12-45	185	138	20	22	76
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12-50	185	136	19	22	
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12-53	185	138	20	22	
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1-0	185	137	20	22	78
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1-15	190	140	21	21	
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1-25	185	138	20	20½	78
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1-42	195	140	21	20½	80
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1-50	188	140	21	20½	
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1-56	195	152	24	20¾	
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2-0	200	152	23	20¼	
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2-6	195	150	23	20	
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2-14	200	155	24½	20	80
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Steam Pressure during  
 2 hour official trial of Ferry Boat Inca<sup>a</sup>  
 #280 Nov. 15, 1911

B = boiler  
 E = high pressure  
 R = low pressure  
 V = vacuum ins.



Runs over Government course

	time	revolutions	k.p.m.	Speed knots	slip.
S	6-41.0	2528	378	8.97	34.4%
N	6-20.6	2356	371	9.45	29.5%
	average		374.5	9.21	31.95%

The wind was blowing about 30 mi. per hr. W.N.W. In the harbor there was very little tide; down the bay it was slight flood.

After the two hour run she went into the Training Station and took on board 500 men; this increased the draft 1'-1 $\frac{3}{4}$ " forward and 0'-3 $\frac{1}{2}$ " aft.

While at the Training Station the other boiler was fired up, and a test of the fire pump was made using both boilers. With a 1 $\frac{3}{4}$ " nozzle the water pump made a little under 300 k.p.m.

With a 2 $\frac{1}{2}$ " nozzle the pump made about 320 k.p.m. and the water pressure was about 90 lbs.

Trial of #283 (Launch for Steam yacht "Aloha")

April 12, 1912

North one mile	3 min 12 sec	calm
South " "	3 - 15	
Average	3 - 13.5	Speed 18.6 mi per hr.
N " "	3 - 11	wind SW about 12 mi per hr.
S " "	3 - 18	
Average	3 - 14.5	Speed 18.5 mi per hr.

April 13, 1912

N,	3 - 16	calm
S,	3 - 5	
Average	3 - 10.5	Speed 18.9 mi per hr.



#284 - 25'-11" X 6'-0" speed launch

Hudson 25 HP motor

May 8, 1912

wind N.E. 10 mi/hr.

screw 3 blades 18" pitch

Run	time	rev.	f.p.m.	speed	mean speed	mean f.p.m.	slip
4-N	8-46	4770	550	6.92	7.29	552	27%
4-S	7-49	4350	555	7.66			
1-N	5-46½	5600	972	10.38	10.55	933	33½
1-S	5-35	4990	894	10.72			
2-N	3-50	4780	1245	15.65	15.91	1232	24
2-S	3-42½	4525	1220	16.18			
3-N	3-33	4620	1300	16.85	17.22	1302	23½
3-S	3-24½	4450	1305	17.60			
5-N	3-29½	4560	1308	17.62	17.46	1306	21½
5-S	3-21½	4350	1302	17.80			

Weight of launch without equipment

ford. 930

aft. 990

1920 lbs.

Nat and Tommie Brightman were onboard during the trial.

#287 - 23'-0" X 6'-3" launch

10-15 HP Kennath motor

May 25, 1912

wind N.E. about 20 mi/hr.

½ mile course

Run	time	rev.	f.p.m.	speed	slip %	mean f.p.m.	mean speed	mean slip.
N	5-6.4	2345	459	5.87	24.9	463	6.27	21.0
S	4-30	2095	466	6.66	17.0			
N	4-32	2415	533	6.62	27.1	609	7.31	29.6
S	3-56	2406	612	7.63	26.8			
N	4-17.5	2605	606	6.99	32.4	689	7.93	32.5
S	3-37.2	2520	696	8.28	30.1			
N	3-58	2700	681	7.57	34.8	781	8.35	37.2
S	3-29	2850	818	8.61	38.2			
N	3-42.8	2760	743	8.08	36.2	874	9.68	35.0
S	3-4.2	2665	869	9.78	33.9			
N	3-8	2755	879	9.58	36.1			

Weight of launch without equipment

ford. 920

aft. 1075

1995 lbs

during the trials A.S. de W.H. was forward, and W.L. Jr. was amid ships.



#286 27'-0" x 7'-3", Power dingey  
 with Hewitt 4 cyl. 4 cycle 4" x 6" engine  
 screw 3 blade 20 1/2" x 26" pitch  
 Weight, without equipment ~~2970 lbs.~~ 2970 lbs.

Run	Time	Rev.	f.p.m.	Speed mi per hr.	Slip %	Mean f.p.m.	Mean speed	Mean slip.
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May 25, 1912; trial by A.S. de W.H. and N.G.H. Jr.  
 over 1/2 mi course  
 wind E by N about 10 mi per hr.

N	4-29.2	1590	354	6.69	23.4	355	6.93	20.7
S	4-11	1485	355	7.17	18.1			

N	3-50.4	1		7.78		7.96		
S	3-41.6	1668	452	8.13	27.0			

N	3-25	1859	544	8.79	34.5	544	8.79	33.0
S	3-16	1773	543	9.18	31.4			

N	3-11.5	1961	596	9.41	36.0	595	9.64	34.3
S	3-2.6	1805	593	9.86	32.6			

N	2-55	1930	664	10.31	36.9	659	10.56	34.9
S	2-46	1811	653	10.80	32.8			

N	2-43.5	1875	688	11.01	35.1	688	11.25	33.8
S	2-36.8	1799	688	11.48	32.4			

May 26, 1912; trial by A.S. de W.H., 1/2 mi course, calm.

N	4-14	<sup>1511</sup> <del>1511</del>	357	7.09	19.4	359	7.12	19.6
S	4-12	1520	361	7.14	19.7			

N	3-36	1721	478	8.33	29.2	479	8.37	29.0
S	3-34	1711	479	8.41	28.8			

N	3-19	1801	543	9.04	32.3	545	9.09	32.2
S	3-17	1794	546	9.14	32.1			

N	2-55	1825	626	9.73	33.2	626	9.73	33.2
S	2-55	1822	625	9.73	33.1			

N	2-32	1790	706	11.84	31.9	701	11.77	31.9
S	2-34	1786	696	11.69	31.8			

July 3, 1912

"Liana's" launch with new Premier  
 motor and 3 bladed propeller 20 1/2" x 26" pitch  
 length o.a. 35'-0", beam 6'-4", building No. 271  
 built Aug. 1909

Run	Time 1/2 mile	Rev. 1/2 mile	f.p.m.	Speed mi per hr.	Slip %	Mean f.p.m.	Mean speed	Mean slip %
N	3-35.0	1438	402	8.37	15.3	402	8.37	15.2
S	3-35.0	1436	401	8.37	15.1			
N	2-24.5	1604	666	12.44	24.1	666	12.45	24.0
S	2-24.2	1600	665	12.46	23.8			
N	2-1.0	1546	769	14.90	21.2	765	14.90	21.8
S	2-1.0	1568	779	14.90	22.3			
N	1-42.5	1492	874	17.56	18.3	869	17.48	18.2
S	1-43.5	1488	863	17.39	18.1			
N	1-35.8	1474	924	18.79	17.3	922	18.70	17.5
S	1-36.7	1482	920	18.61	17.7			
N	1-34.8	1472	932	18.98	17.1	932	19.00	17.1
S	1-34.6	1468	932	19.02	17.0			



July 17. 1912.

"Helianthus" was first tried on  $\frac{1}{2}$  mile course June 20<sup>th</sup> in a light condition. - much of the furnishing and equipment not being aboard.

She then made a mean of 12 statute miles

She was tried today, under unfavorable conditions. as it was low tide and a fresh SSW wind. She now has full equipment - about 340 gal gasoline. and  $1\frac{1}{2}$  tin lead ballast.

4 runs were made over the lower  $\frac{1}{2}$  mile with following result

Run	Time	Rev-engine	R.P.M.	R.P.M. screw	Speed mi/hr	Slip %	Speed Knots
N	2-51	1778	632	257	10.50	10.33	24 $\frac{1}{2}$
S	2-58	1865	630	260	10.15		
N	2-40 $\frac{1}{2}$	1788	664	275	11.22	10.72	24
S	2-55	1834	630	260	10.32		

A pair of runs were made with full throttle, but although many more revolutions were made, but little more speed was realized due to shoal water.

Helianthus is fitted with a Sterling 6 B motor with cyls  $5\frac{1}{2} \times 6$ . geared to propeller shaft in ratio of  $\frac{38}{92}$ . The propeller is  $38" \times 56"$  - 3 blades. She is sitting a light of the designed wt.

July 25 1912

"Bubble" #285

25'-11x6'-0" speed launch

Henschoff Motor 4"x5", 4 cyl., 4 cycle

Wind NW about 10 mi/hr.

screw - 3 blades 18" dia

Run	Time $\frac{1}{2}$ mile	Rev $\frac{1}{2}$ mile	R.P.M.	Speed mi/hr	Slip %	mean R.P.M.	mean speed	mean slip %
N	4-59	2180	438	6.02	19.3	6.34		
S	4-30	1962?		6.66				
N	2-57	2590?		10.18		10.42		
S	2-49	2330	837	10.66	24.5			
N	2-12	2310	1050	13.64	23.8	1051	13.92	22.4
S	2-7	2222	1051	14.19	20.9			
S	1-49	2148	1182	16.50	18.1	1340	18.35	19.8
N	1-40	2210	1326	18.00	20.4			
S	1-36.2	2172	1354	18.70	19.1	1386	18.77	20.6
N	1-37.5	2245	1383	18.48	21.6			
S	1-34.5	2182	1388	19.05	19.5	1362	18.71	20.8
N	1-36.5	2214	1375	18.65	21.1			
S	1-36	2155	1348	18.76	18.4			



August 3<sup>rd</sup> 1912

"Melianthus" (#288)

Trial on course from Bristol Ferry Lt. to Mount Hope buoy. & return. 1 7/10 sea miles. Wind W. 18. Tide flood. Mached fully equipped and tanks nearly full. (about 550 gal)

Up. time 10-49. Rev. p.m. of engine 658.  
Down " 11-34 " " " 661.

Speed up 9.45  
down 8.86 } mean 9.15

Slip for 56" pitch @ 9.15 K with  $659.5 \times \frac{39}{92}$   
272 rpm of drum.  $\frac{56}{12} \times 272 = 1265$ .  
 $1015 \times 9.15 = 928$ .  $\frac{1265}{928} = 1.36$  or 26 1/2% slip.

#291

Admirals' Twin Screw Motor Barge

length 50 ft, beam 10 ft, weight at time of launching 13870 lbs. Engines two-45-65 H, Model B Sterling

Speed trial on Potasquash course Sept 6, 1912.  
Propellers { starboard, dia. 28 in., pitch 34.8 in. } 3 blades  
                  { port " 28 " " 37 in. }

Run.	Time 1/2 mi.	Rev. 1/2 mile	r.p.m.	Speed mi per hr.	Slip %	Mean r.p.m.	Mean speed	Mean slip. %
N	2-23	S 1275 P 974	534 408	12.58	28.6 12.0	S 534 P 433	12.9	S 26 P 20
S	2-15.5	S 1203 P 1032	533 457	13.30	24.3 26.9	S 533 P 457		
N	2-4.5	S 1165 P 1003	562 484	14.48	14.6 14.6	S 562 P 562	14.5	S P 21
S	2-3.5	S — P 1191	539	14.59	28.2	S — P 562		
N	1-55	S 1335 P 1100	696 574	15.54	31.7? 22.1	S 643 P 575	15.8	S 25? P 21
S	1-52.5	S 1105 P 1080	589 576	16.00	17.6 20.7	S 589 P 576		
N	1-43	S 1100 P 1171	641 683	17.48	17.2 26.8	S 638 P 654	17.6	S 16 P 23
S	1-42	S 1080 P 1060	635 624	17.64	15.6 19.2	S 635 P 624		
N	1-41	S 1085 P 1072	644 636	17.80	16.1 21.1	S 645 P 639	18.0	S 16 P 20
S	1-39.2	S 1070 P 1060	646 641	18.14	15.0 19.2	S 646 P 641		
N	1-39	S 1180 P 1065	715 645	18.19	22.8 19.6	S 716 P 646	18.3	S 23 P 19
S	1-38	S 1170 P 1057	716 647	18.36	22.2 19.0	S 716 P 647		

Wind N.W. about 6 mi. per hr.  
tide flood



Trial of #291

Sept. 7, 1912

on Popasquash course, wind very light S.W., tide flood.

Same propellers as day before (see page before) but with diameters cut down to 24 ins.

Run	Time 1/2 mile	Revs. 1/2 mile	r.p.m.	Speed m.p.h.	Slip %	Mean r.p.m.	Mean speed	Mean slip %
N	2-24.8	S 1400 P 1016	581 421	12.43	S 35.0 P 15.6	S 582	12.55	S 23.4 P 20
S	2-21.6	S 1375 P 1128	583 478	12.71	S 33.7 P 24.1	P 450		
N	2-1	S — P 1282	— 636	14.88	S — P 33.3	S <del>652</del> P 612	14.8	S — P 31
S	2-2	S — P 1191	— 587	14.77	S — P 28.2			
N	1-51.2	S 1235 P 1198	666 645	16.18	S 26.3 P 28.5	S 672	16.3	S 26 P 26
S	1-50	S 1240 P 1128	677 615	16.36	S 26.6 P 24.4	P 630		
N	1-37.6	S 1200 P 1155	745 717	18.62	S 24.1 P 25.8	S 736	18.4	S 24 P 26
S	1-39	S 1200 P 1165	727 706	18.18	S 24.1 P 26.6	P 712		
N	1-33.2	S 1170 P 1152	714 742	19.30	S 22.2 P 25.6	S 761	19.25	S 25 P —
S	1-33.8	S 1265 P —	808 —	19.18	S 28.1 P —	P —		

Official Trial of #291

Sept. 11, 1912

50'x10" Twin screw admirals' Motor barge.

A one hour run at full speed was begun at 10-46 am. There were nine persons on board and about 70 gal. of gasoline in the tank.

Two sets of runs were made on the Ferry-Sandy Point course, <sup>of 3 naut. miles</sup> with the following results

	Run	time	speed knots	average speed knots
1.	{ down	10-18	17.50	15.84
	{ up	12-42	14.18	
2.	{ down	10-22	17.38	15.85
	{ up	12-35	14.32	

Wind S.W. 10-18 miles h.

Tide three-fourths ebb.



Feb 14 1913

Test of General Electric  
1 KW gasoline generating set

Motor; 2 cycle, 1-cylinder, 3"X3"

Volts	amps.	r.p.m.	time for 2 pints gasoline	pts. per hr.	HP output electrical	pts. per hr. per HP
65	15		32	3.75	1.301	2.88
65	7.5	1230	32	3.75	6.53	5.75
65	3.75	1205	39	3.08	.326	11.5

Feb 24 1913

Test of 2 HP, 2-cyc, 1-cylinder "Caille" gasoline motor

R.P.M.	break load arms = 23" initial load to be subtracted = 4.25 lbs.		Pints per hr of gasoline	HP	pts. per hr per HP
	reading	actual			
690	10.9	6.65	2.08	<del>1.678</del> <del>838</del>	<del>1.24</del> <del>2.48</del>
754	9.75	5.50	1.715	<del>1.513</del> <del>757</del>	<del>1.14</del> <del>2.27</del>
700	8.75	4.50	1.83	<del>1.150</del> <del>575</del>	<del>1.39</del> <del>3.18</del>
750	8.00	3.75	2.29	<del>1.235</del> <del>573</del>	<del>2.24</del> <del>4.47</del>
565	10.50	6.25	1.689	<del>1.482</del> <del>742</del>	<del>1.14</del> <del>2.28</del>
729	9.5	5.25	1.77	<del>1.378</del> <del>649</del>	<del>1.23</del> <del>2.53</del>

← ran smoothest at this speed

Feb 28, 1913

Test of General Electric 5 KW  
gasoline generating set

Motor; 4 cylinders, 4 cyc 3"X6"

Volts	amps.	r.p.m.	time for 1 pint	pts per hr	electrical HP	pts. per hr per HP
120	0	785	10-0	6.00	0	∞
"	5	780	7-30	8.00	0.804	10.06
"	10.5	780	8-53	7.43	1.689	4.40
"	15.3	770	7-20	8.20	2.462	3.33
"	20.0	775	6-50	8.78	3.22	2.73
"	25.0	760	6-10	9.73	4.03	2.41
"	30.0	767	5-25	11.08	4.83	2.295
"	35.4	760	4-40	12.88	5.69	2.265
"	40.0	755	4-35	13.09	6.43	2.035
"	45.0	750	4-25	13.59	7.24	1.878
"	48.0	750	4-20	13.87	7.72	1.798
"	49.5	741	4-40	12.88	7.95	1.62
"	40.0		6-15	9.60	6.43	1.492

← better mixture



May 21, 1913

13 foot tender for #716  
2HP Browne motor, 2 cycle, 2 cylinders

Propeller, 3 blades, 13" diam, 8" pitch

Standing hull; 100 lb. at 680 r.p.m.

On  $\frac{1}{2}$  mile course

time	speed	r.p.m.	slip.
N 5-0	6.0 mi. per hr.	868 taken after words	9.0%
S 4-33	6.62	868	-1.0%
average	6.31		4.0%

#7003

June 12, 1913

Tender for Schooner Yacht "Vagrant" (#719)  
19'-5" x 5'-3"; weight 1221 lbs. Model of  
#294 reduced to  $\frac{3}{4}$  length, and  $\frac{3}{8}$  height and width.  
Motor "Sterling Kid"; 4 cyl, 4 cyc. bore  $2\frac{3}{4}$ ", stroke  $4\frac{1}{2}$ "  
Propeller 3 blades 14" diam x 16" pitch.

$\frac{1}{2}$  mile course Popponquash. Wind WSS light.

One on board

Run	Time	Rev. $\frac{1}{2}$ mile	r.p.m.	Speed mi. per hr.	Slip %	Mean r.p.m.	Mean Speed	Mean Slip.
N	5-22	2290	427	5.60	12.0	435 <del>2260</del>	5.78	11.6
S	5-02	2230	443	5.96	11.2			
N	4-03	2780	686	7.41	28.8	677	7.63	23.8
S	3-50	2560	668	7.84	22.6			
N	3-05	2640	856	9.73	25.0	850	9.81	23.8
S	3-02	2560	844	9.89	22.6			
N	2-30	2470	1011	12.00	19.8	1007	12.22	18.8
S	2-27	2410	1002	12.41	17.8			
N	2-39	2390	1110	11.81	17.2	1104	11.62	16.2
S	2-32	2330	1098	11.92	15.1			



#292 "FAD" June 12, 1913

40'-0" x 6'-10" x 2'-3" Pleasure speed launch for Mr. Dunn; weight 4927 lbs.

Motor, 150 HP Sterling racing engine 8 cyl., 4 cyc., 5 1/2" x 6 3/4"

Propeller, 3 blades, 25" diam x 34" pitch 1/2 mile Popponquash course, wind S.W. about 15 mi. per hr.

two on board.

Run	Time 1/2 mile	Rev. 1/2 mile	r.p.m.	Speed mi. per hr.	Slip %	Mean r.p.m.	Mean speed	Mean slip.
S	2-32	1053	416	11.86	11.6	437	11.65	16.7
N	2-36	1190	458	11.53	21.8			
S	1-43	1067	680	17.48	20.1	681	17.64	20.0
N	1-41	1148	681	17.80	19.8			
S	1-20	1124	843	22.50	17.1	845	22.65	16.9
N	1-19	1115	847	22.80	16.6			
S	1-15	1113	891	24.00	16.4	879	23.85	15.6
N	1-16	1098	866	23.7	15.2			

Sept. 28, 1913

#293

18'-1 1/2" x 5'-3" Yacht tender (Model #284 reduced)

Weight of boat without fuel and equipment 1040 lbs.

Motor; 4 cyl. 4 cyc. Scripps "Midget"

Propeller; 3 blades, 12" dia x 15" pitch.

On north 1/2 mile of Popponquash course.

Wind about 5 mi. per hr. N.N.E, tide ebb, One on board.

Run.	Time 1/2 mile	Rev. 1/2 mile	r.p.m.	Speed mi. per hr.	Slip. %	Mean r.p.m.	Mean Speed	Mean slip.
N	4-37	3240	703	6.51	34.8	703	6.65	33.5
S	4-26	3110	702	6.78	32.1			
N	4-24	3380	769	6.82	37.6	770	6.98	36.2
S	4-12	3240	771	7.14	34.8			
N	3-51	3538	919	7.80	40.2	921	7.94	37.3
S	3-43	3423	922	8.08	38.4			
N	3-30	3582	1024	8.58	41.1	1021	8.67	40.4
S	3-26	3491	1018	8.75	39.6			
N	3-9	3521	1118	9.53	40.1	1122	9.69	38.2
S	3-3	3428	1125	9.84	38.4			
N	2-45	3398	1236	10.91	37.8	1231	10.95	37.4
S	2-44	3350	1225	10.98	37.0			

May 22, 1914

New propeller pattern #10300, 3 blades, 14" dia x 14" pitch.

Run	Time 1/2 mi	Rev. 1/2 mi.	r.p.m.	speed	slip %	mean r.p.m.	mean speed	mean slip.
N	2-44	3525	1290	10.99	35.7	1320	10.95	36.9
S	2-45	3710	1350	10.91	39.0			



#294

Feb. 6, 1915

30'-0" x 7'-4" Steam launch  
for Vincent Astor. 3 1/2" x 5" x 8" x 4 1/2"  
triple exp. engine, with kerosine burner  
under boiler.

She was put overboard at about 9 a.m.  
Steam up about 10 a.m. after a little  
trouble with leaky valves, and stiff pumps.  
Made several runs over the Popasquash  
Course with four on board including  
Mr. McAuslin (Chief Engineer of "Noma") and a  
man from James Lemoin and Crane.

Could make the safety valve blow  
with throttle wide open giving a speed  
of about 11.7 mi. per hr. It was necessary  
to use the jet when running above about  
10 mi. per hr. in order to prevent smoking.

5 gallons of kerosine ran her just about  
1 hour without the jet and running  
between 9 and 10 miles per hour.

She was hoaled out again at about 2 P.M.  
Steam can be raised in about 10 min.  
from time of lighting match.

Jan. 11, 1915

30'-0" x 7'-2" Crew's Launch for S. Y.  
"Wayfarer". Weight 3605 lbs.

Propeller 3 bl. 20 1/2" x 26"

Motor, Sterling 20-35 HP Model B-3 (4 3/4" x 5 1/2")  
4 cylinders.

Trial on lower 1/2 mile of Popasquash course

N	time	r.p.m.	revs per 1/2 mile	speed	slip.	Calm 2-onboard.
\$ N	2-20	705	1640	12.85	26%	
S	2-20	705	"	"	"	

Jan. 16, 1915.

32'-0" x 7'-2" Turner's Launch for S. Y.  
"Wayfarer". Weight 4275 lbs.

Propeller 3 bl. 20 1/2" x 26"

Motor, Premier 4 1/2" x 5 1/2" 6 cyl.

Trial on upper 1/2 of Popasquash course.  
calm.

N	time	revs per 1/2 mi.	r.p.m.	speed	slip.	mean speed	mean slip.
N	2-9	1664	785	13.96	27%	14.48	25%
S	2-0	1564	785	15.00	22%		
N	2-4			14.50			
N	2-0			15.00			
S	1-52			15.21		15.1	

There were 3 on board the first 3 runs  
and 2 the last 2 runs.



# Trial of "Katomra"

Under power, May 2 1915:

Main: 4 cylinders, 4 cyl.  $5\frac{1}{2} \times 6\frac{3}{4}$ . Gear ratio 25 to 8. Propeller 36" x 3ft<sup>2</sup> pitch, folding -

A course of 892 yards (nearly) = .439 sea miles along the East Channel into Bristol Harb. from a line of McKees Shore Lane, Southbury, was run.

The tide at the time was running about  $\frac{1}{3}$  k Southbury, and the wind N.W. about 7 k. - possibly 9 k on 1<sup>st</sup> run and 6 k on 3<sup>rd</sup> run.

1<sup>st</sup> run, 7<sup>m</sup> 35<sup>s</sup> = 3.47 k (corrected for tide 3.80 k)  
 2<sup>nd</sup> " 4 - 37 = 5.63 " " " 5.30.  
 3<sup>rd</sup> " 6 - 34 = 4.02 " " " 4.35.

Mean of 2<sup>nd</sup> & 3<sup>rd</sup> runs = 4.82 k.

In first run throttle was not wide open first part, but was wide open in 2<sup>nd</sup> and 3<sup>rd</sup> runs, and the engine making very nearly 1060 rpm - the screw 340 r.p.m.

If screw is 3 ft pitch,  $\text{slip} = 1 - \frac{482 \times 6080}{60 \times 340 \times 3} = 52\%$

Time of hoisting main sail using aft dabs stands about 5 min.

Time of hoisting fore sail 2<sup>m</sup> 26<sup>s</sup>.

A.G.H.

April 25 1915

## Katomra Starboard Launch

Trial with open exhaust, and pitch of propeller about 21"?

Engine with new valve gear.

Run	Time $\frac{1}{2}$ mile	Rev. $\frac{1}{2}$ mile	r.p.m.	Speed m.p.h.	Slip. %	mean r.p.m.	mean speed	mean slip.
N	1-31	2133	1487	19.8	29.3	19.6	19.6	
S	1-34	2457	1568	19.4	38.5			
N	1-29	2242	1515	20.2	32.7	19.8	19.8	
S	1-34	2282	1458	19.4	34.0			
N	1-30	2217	1477	20.0	32.0	19.7	19.7	
S	1-34	2303	1470	19.4	34.6			
					?			

(Wgt of "Y/25" under for Katomra)

Complete - 1827.3

Engine - 778.8

Diff for hull & installation 1048.5



June 18<sup>th</sup> 1915

Test of "Vagrant" under power.

Vagrant was here for new sails and a trial on Harbor Course was made. Mr. Vanderbilt in charge and N.G.W. & G.S.W.W. assisting.

Run over south half tide nearly low very slight air s.w. and hardly any current.

Vagrant has been fitted with a new motor with chain drive to propeller shaft. Motor 6 cyl. 5 1/2 x 6 Sterling of last year pattern. Ratio of chain wheels ?

Propeller. suspending. 36" dia. Pitch.

Machinery running very well with no vibration worth mentioning. Engine room rather noisy. Rev. on test of motor 700. rpm.

	Time	Rate	
S-	3 <sup>m</sup> 57'	7.60	} 7.76 = 6.25 K
N-	3 47	7.92	
S.	3 54	7.70	} Mem: 680 K.
N-	3 46	7.96	

July 3 1915

Helianthus with new Dan Block. 6 cyl. 5 1/2 x 6 motor connected to same reducing gear and propeller as original.

First run from dock - over lower half mile in harbor. Wind very light N.

Down - 2<sup>m</sup> 35' }  
Up 2<sup>m</sup> 37' } = 11.53 miles in 10.05 length

Everything starting off very well and engine developing much more power than the Sterling of same size.



June 2 1916,

Trial of "Shadow" #300. per Dr. Ayre  
48' cruising launch, 12 1/2' beam - having  
4 cyl. 5 1/2 x 6 Van Blerck motor geared 40 to 91  
to propeller 32" dia x 48 p. (actual p 47")

Runs made over upper 1/2 mile course in harbor  
nearly calm, nearly low tide, which  
probably affected higher speeds. Boat  
nearly equipped. Water tanks more than  
1/2 full, and only small amount of  
gasoline. Revolutions taken by tachometer

which we have not calibrated.

N.	Rpm	Time	Mem screw	Mem engine	Rel mi	Rel K.	Slip
N.	370	2-55 1/2	372	847	10.8	9.38	
S	375	2-57 1/2					
N	332	3-5 1/2	331	754	9.75	8.45	
S	330	3-3					
N	312	3-9	314	715	9.6	8.33	
S	315	3-5 1/2					
N	280	3-25	277	630	8.77	7.62	
S	275	3-26					
N	(375)	(2-53)					
S	450	2-36 1/2	450	1023	11.5	10.0	

(Tachometer not reliable)

June 18 1916

Schooner "Marianne" #772 - <sup>94. Brown</sup> <sub>Boston</sub>

80' w.l. fitted with 8 cyl 5 1/2 x 6 Van Blerck  
geared 51 to 90 to propeller x two  
folding blades, with locking gear for backing.  
Trial made over lower 1/2 mile course  
in Bristol Har. Calm & nearly high water.

Course	Time	mi. p.h.	Knots	Engine	Throttle
S	3-44	9.28	806	855 rpm.	Throttle not wide open
N	3-15 1/2	9.21	800		
S	3-07	9.62	836		
N	3-06 1/2	9.65	838	930	Throttle open
S	3-3	9.84	854	903	
Mean of last two		9.74	846	916	

Everything working very well.

June 15<sup>th</sup>?

Test of pulling on steelyard with wire  
over pulley block - with throttle nearly  
open. Engine 735 r.p.m. = screw 416 rpm.  
Pull was 2725 lbs.



June 21 1916.

"Katusca" With Winton

6 cyl x motor installed last fall. gear 54 to 87 to 38" x 36" 2 bladed propeller feathering propeller with backing lock.

Trial made over same course of 892 yards along Ferry Hill as used in trial May 2 1915.

Wind light as noted. Tides N in all runs.

S	5 <sup>m</sup> -36 <sup>s</sup>	SW 5	320 rpm of 10 rev.	4.71 K	Throttle open
N	5-13	"	"	5.04	
S	5-16 <sup>(?)</sup>	" 6	382	5.10 <sup>(?)</sup>	Throttle open
N	4-36	"	"	5.72	
S	4-50	S 7	-	5.45	
N	4-37	SW "	-	5.72	

Mean of 1<sup>st</sup> 2 runs. 4.87

" last " 5.58

Machinery running very well and quietly. No vibration.

June 29 1916.

"Magistrate" (#301) Jun.

Harold Vanderbilt. Tender to Bagrant. Is 63' long - 15 1/2' wide. rather heavily built fitted with 6 cyl. x Speedway Motor. direct connected to 4 bl. 38 x 28 propeller. (~~Winton~~ Winton pattern)

Trial made over lower 1/2 course in Bristol Har. at low tide. light NW wind. vessel light. and nearly finished.

N	2 <sup>m</sup> -31 1/2	Throttle open
S	2-27 1/2	Mean for mile 4 <sup>m</sup> 59 <sup>s</sup> = 12.05 m = 10.23 K
N	2-31 1/2	

Throttle nearly closed

S	2-39	Mean for mile = 5 <sup>m</sup> 21 <sup>s</sup> = 11.40 m = 9.72 K
N	2-43	

Engine ran very quietly and boat with only very slight vibration.

Aug 19.

Test of pulling at dock, - with throttle open usual amount when running. 2250 lbs with throttle open. 2450 lbs.



August 19<sup>th</sup> 1916

Katoua. with Winlin engine  
geared  $\frac{54}{87}$  to 38" x 36" screw  
as in trial of June 21<sup>st</sup> and  
over course of 892 yards = .44  
sea mile.

Down. - calm current slight SE  $4^m 25^s = 5.98$  Km

Up. " " " "  $4 - 35 = 5.76$

Mean 5.82.

R.p.m. of motor was 585 uniformly = 363 fms  
screw. = 46% slip.

(Motor makes very nearly 100 r.p.m. f-  
each Km.)

Sept. 22, 1916

#304, Katoua's new starboard  
launch with (75 HP Sturtevant  
Motor 4 cyl.  $4\frac{1}{2} \times 6$ ")

Length 26'-0", beam 6'-0"

Keel and bottom perfectly straight.  
Weight without equipment. 2380 lbs.

Trial with one onboard; wind, light  
E.S.E.; lower  $\frac{1}{2}$  mile at Popasquash.

Propeller, 3 bl. 17" x 22"

Run	time $\frac{1}{2}$ mi.	Rev. $\frac{1}{2}$ mi.	r.p.m.	Speed miles/hr.	Slip %	mean r.p.m.	mean speed	mean slip.
N	1-11	<del>1850</del>	1542	25.35	21.2			
S	1-11	1852	1561	25.35	22.2	1551	25.35	21.7
N	1-11	1850	1560	25.35	22.1			
S	1-11	1842	1555	25.35	21.8	1558	25.35	22.0
N	1-29	1766	1490	20.20	18.5			
S	1-31	1736	1462	19.80	16.8	1473	20.00	17.6



March 25 1917.

# Lady Gay. # 305.

58' oa - 55' 9" wl. 11' 3" ex beam - 9' 6" inc.

4 cyl. 5 1/2 x 6 Van Buren - direct connected to 28" x 30" - 3 bl. propeller.

2<sup>nd</sup> run out - nearly complete.

Best run between 1/2 m harbor course.

Calm. 7 m board. calm. high water.

With throttle well open.

N	2 - 26 1/2	} about 660 rpm.	} Mean speed 12.16 miles = 10.56 k.
S	2 - 28		
N	2 - 28 1/2		
S	2 - 28 1/2		

Slip = 35%

With throttle partly closed.

N	2 - 47	} about 570 rpm	} Mean speed = 10.72 miles = 9.3 k.
S	2 - 48		

Slip = ~~33%~~ 31%

At 11. Screw was found to be bent due to soft metal about 2" was cut off end of blades. Leaving dia about 2 1/4".

On a trial over 1/2 course at low tide. Speed was 12 mi. with 625 rpm. Slip = 32 1/2%

April 18<sup>th</sup> 1917

# Navette - No 303

114' oa. 108' wl. 14 beam - 12 broad way.

Built for J. P. Morgan.

Trial for acceptance made today with J. Beann-Webb. Have on board about 15 persons. 5 tons coal and tanks fully 1/2 filled. and practically all equipment.

Vessel is fitted with <sup>antenna</sup> coal burning boiler having about 40 sq ft grate and about 1000 sq ft heating surface and superheater of 4 runs. 2 - 6 1/4 - 10 - 16 x 9 cm engines. Blake featherweight air pump. & Blake vertical feed pump. Inside condenser & blower. Propellers. 36" dia 57" pitch.

Trial made in Bay over course from range of Framing Place Pt. and Pine Hill to north range of Navy Trial course (7 sea miles) and over Navy Trial Course (1 sea mile) and return - making turn South of Rose Is. It was intended to make two trials of 2 h each. making 8 runs over course + turns. but Mr. Webb was satisfied with one hour of runs. Wind SSW 15 miles, overcast. 47°. Tide about low water slack.

Down	7 m.	20 <sup>m</sup> 20 <sup>s</sup>	Rate 20.65	} Mean
"	1.	2-56	" 20.48	
Up	1.	2-55	" 20.57	} 20.53
"	7.	20-24	" 20.58	
		<u>16</u>	<u>46-35</u>	20.61 nearly (over)



Sept. 30, 1917

Trial of # 309. 80' Patrol boat  
for Aldrich & Gould. with Sidneys  
new oil burning boiler and 1- 7"-11 1/4" x 12 x 10  
engine. Propeller 36 x 51" designed pitch.

Made preliminary run having 1 1/2 mm.  
lip on burner. on course Sandy Pt  
to Half way Rocks. 2.83 K. Calm

Down with tide 11<sup>m</sup> 20<sup>s</sup> - Up 13<sup>m</sup> 48<sup>s</sup> =

mean speed of 13.62 K. Everything working  
very well and boat quite free from vibrations  
Pressure noted by Sidney. Boiler 210, ST chest 195

I. 53, L 9, V 25, Ceil & burner 160.

Engine 505 r.p.m. Fan 650 r.p.m.

If actual pitch is 50°. Slip =  $1 - \frac{2100}{1380} = .34$  ?

Oct 17. Out for trial but boat just arrived at about 11

Was running well, B 225, H 210, I 60, L 12, V 25 1/2, Rev 540

Oct 19 on course, Sandy Pt to Halfway R & return, SSE mod.  
tide fl. 2 1/2 mm lip on burner.

Down. 11-34. B 255, H 228, I 68, L 14, V 25 1/2, Rev 546  
air 5°. Dynam engine (Pump) - 1325

Up. 10-26 B 270, H 242, I 74, L 15 1/2, V 25 1/2, Rev 556

Mean Speed 15.47 K = 17.8 miles. Slip - 30%

Oct 10<sup>th</sup> 1917.

# 306.

Out to test vibrations after putting  
on heavier counterbalances on engines.

Run on 3 Km. course. Tide nearly  
high water slack. Wind N.N.E. - strong (30 m)

Down - Ferry Pt. 2<sup>m</sup> 44<sup>s</sup> - High Pt. 6<sup>m</sup> 48<sup>s</sup> Sandy Pt.  
Up. 6 50

Rate. 18.85 19.00

Star St-245, H 210, I 68, L 12, V 24, Rev 505  
Port " 230 215 68 15 24 485  
Blower. rev 925 air press. 4"



Dec. 3, 1917

Trial of #312 80' Patrol boat  
for Mr. Russel; boat and machinery  
exactly like #309, except that the oil  
pump is a plunger pump driven from the  
end of the crank shaft of the air & feed pumps,  
instead of a duplex steam pump, and  
the strainers and heaters are of our own  
make instead of Schutte & Koerting, which  
makes a saving of about 500 lbs in weight.

Trial in A.M. course in Harbor,  
high tide, wind light N.W.

2 1/2" mm. burner tip with 4 pitch spiral.

down	14.51 mi/hr. hr.	} mean 14.51 mi/hr. hr. mean r.p.m. of engine 473 } 480 486 }
up	14.50 " " "	
down	14.50 " " "	
up	14.51 " " "	

Slip. 37.3%

Trial in P.M. course in Harbor.  
low tide, wind nearly calm.

2 1/2" mm. burner tip with 3 pitch spiral.

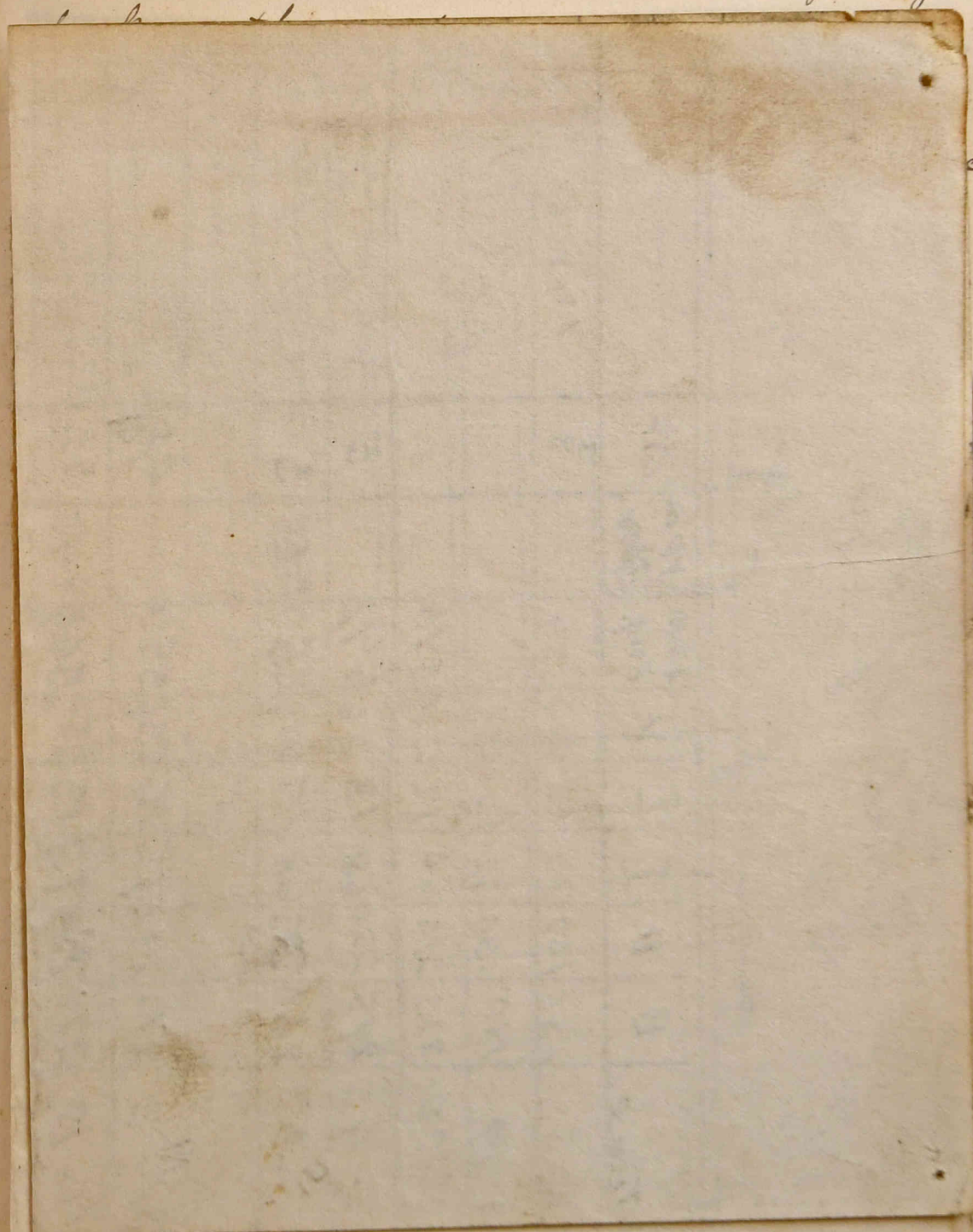
up	15.22 mi/hr. hr.	} mean 15.0 mi/hr. hr. mean r.p.m. of engine = 539 } 540 540 }
down	14.95 " " "	
up	14.88 " " "	
down	14.95 " " "	

Slip 42.4%

Note the water was too shallow and the boat made  
a very large wave.

Dec. 4, 1917

#312 made a run down the  
Bay and back with Mr. Russel's  
representative on board. It was getting





# Trials of #309.

dyn eng.

Time	B	H	I	L	V	r.p.m. Eng.	r.p.m. Blower	air	
3-5	155	130	32	72	26½	354		7/8	1 mm tip. Oct 17.
3-19	150	130	32	73	26½				
3-25	225	210	60	12	25½	540			
3-45	245	220	68	13	26	542		5	before we got on the course.
3-52	260	<del>235</del> 235	68	15	25½	550	1325	5	Oct 18
4-5	270	242	75	16	25½	550		5¼	
4-10	270	<del>245</del> 245	73	15	25½	563	940	5¼	



Trial of # 312

Dec. 3, 1917

Time	B	H	I	L	V	rpm. Eng.	rpm air & feed.	dropt.	oil burner	Air temp.
9:20 AM	125	110	22	-4	25 $\frac{1}{2}$	375		1.10	160	
	140	180	50	10	24 $\frac{1}{2}$	473	100	2.7	160	88
	200	185	52	10	24 $\frac{1}{2}$	486		"	"	"
3-0	245	225	67	15	23 $\frac{1}{2}$	530		3.7	160	
3-9	260	250	76	15	24	539	1.84	3.7		88 from 58
3-17	270	255	78	17	23 $\frac{1}{2}$	540		3.7		

2 1/2 mm thick with 4 wire mesh

2 1/2 mm burner with 4 wire mesh

The oil heater heated the oil from 58° to 88° using exhaust steam from the air & feed pump engine. It has about 1 sq ft heating surface.

Moheller 36" x 51"



Dec. 3, 1917

Trial of #312 80' Patrol boat for Mr. Russel; boat and machinery exactly like #309, except that the oil pump is a plunger pump driven from the end of the crank shaft of the air & feed pump, instead of a duplex steam pump, and the strainers and heaters are of our own make instead of Schutte & Koerting, which makes a saving of about 500 lbs in weight.

Trial in A.M. course in Harbor, high tide, wind light N.W.

2 1/2" mm. burner tip with 4 pitch spiral.

down	14.51 mi/hr. hr.	} mean 14.51 mi/hr. hr.
up	14.50 " " "	
down	14.50 " " "	} mean r.p.m. of engine
up.	14.51 " " "	
		473 } 480
		486 }

Slip. 37.3%

Trial in P.M. course in Harbor.

low tide, wind nearly calm.

2 1/2" mm. burner tip with 3 pitch spiral.

up	15.22 mi/hr. hr.	} mean 15.0 mi/hr. hr.
down	14.95 " " "	
up.	14.88 " " "	} mean r.p.m. of engine =
down	14.95 " " "	
		539 } = 540
		540 }

Slip 42.4%

Note the water was too shallow and the boat made a very large wave.

Dec. 4, 1917

#312 made a run down the Bay and back with Mr. Russel's representative on board. It was getting dark so the range could not be seen.

Time from Sandy Point to position near north range, 23 min 15 sec, distance estimated from chart, 6 1/8 naut. miles.

Speed 15.8 knots or 18.2 mi/hr.

Time from Bishop's bell buoy to Sandy Point 26 min 5 sec, distance 5 7/16 K.

Speed 12.5 knots or 14.4 mi/hr.

One of the safety valves leaked badly and blew to low, so they didn't keep the steam pressure up.

The revolutions were not taken but they were probably about 560 going down and 540 coming up, which would give slips of 32.6% and 34.7%

The wind was light NW and the tide the latter part of ebb.



Dec. 6, 1917

Trial of #306 with new propellers (44" dia x 75" pitch, 3 blade) and with superheaters removed Rose Island course, 1 nautical mile, calm, tide latter part of ebb.

	time	r.p.m.		average r.p.m.	Speed knots	slip %	mean speed	mean slip.
		S.	P.					
S	2-59				20.08		20.94	
N	2-54	460	458	459	21.80	25.5		
S	2-42				22.20		21.10	
N	3-0				20.00			
S	2-40	466	450 <sup>turning</sup>	458	22.50	20.4	21.29	23.3
N	2-59	464	453	457	20.08	26.1		
							3)63.33	
							21.11	

The vibration of the engines was almost entirely eliminated, chiefly due to the reduction of the revolutions from about 560 to 460, but also due to the fitting of intercostal plates between the engine bearings and the shell plating.

The increase in propeller efficiency more than made up for the removal of the superheaters; it was necessary to open the bypasses to the I.P. steam chests in order to keep the safety valves from blowing.

Dec

453	450	458	408	P	1917
	24	24	12	S	
	25	25	15	P	

and guide rod.



Dec 21, 1917  
 First Trial of #308.

Pressures.										f.p.m.		Air ins. of water	blower h.p.m.
Starb.					Port					S	P		
B	H	I	L	V	B	H	I	L	V				
220	155	48	6	24	225	140	42	5	23 <sup>1</sup> / <sub>2</sub>	374	446		630
N	245	80	16	25	245	226	85	16	24				1000
S										450	457		
N	240	190	27	16	245	290	88	19	25	453	454		1026
S	250	228	85	19	24	245	248	88	20	25	455	424	
N										451	458		oil 220 h.p.m.



Trial of #306 Dec 6 1917

first trial with sat. steam and new  
mechanism.

	Boiler		H		I		V		REV.		L	
	Start	Port	S	P	S	P	S	P	S	P	S	P
	225	210	200	196	64	62	20	22	405	408	12	15
N	21								460	458		
S	245	255	228	225	120	120	19	21½			24	25
N	245	250	230	225	120	120	19½	21			24	25
S									566	450		
N									464	453		

Blower 980 r.p.m.



Dec. 6, 1917

Trial of #306 with new propellers (44" dia x 75" pitch, 3 blade) and with superheaters removed Rose Island course, 1 nautical mile, calm, tide latter part of ebb.

	time.	r.p.m.		average r.p.m.	Speed knots	slip %	mean speed	mean slip.
		S.	P.					
S	2-59				20.08		20.94	
N	2-54	460	458	459	21.80	25.5		
S	2-42				22.20		21.10	
N	3-0				20.00			
S	2-40	466	450 <sup>turning</sup>	458	22.50	20.4	21.29	23.3
N	2-59	464	453	457	20.08	26.1		
							3)63.33	
							21.11	

The vibration of the engines was almost entirely eliminated, chiefly due to the reduction of the revolutions from about 560 to 460, but also due to the fitting of intercostal plates between the engine bearers and the shell plating.

The increase in propeller efficiency more than made up for the removal of the superheaters; it was necessary to open the bypasses to the I.P. steam chests in order to keep the safety valves from blowing.

Dec. 21, 1917

Trial of #308  
(Sister ship to #306)

On Rose Island course, 1 nautical mile, light N. breeze,

	time.	r.p.m.		average r.p.m.	Speed knots	slip %	mean speed	mean slip.
		S.	P.					
S	3-56*	374	446		15.25			
N	3-11				18.81			
S	2-55	450	457	453½	20.58	26.3		
N	3-08	453	454	453½	19.16	31.5		
S	2-54	455	444	451½	20.07	23.0		
N	3-20†	451	458	454½	18.00			

\* Hot rod on star engine.

† Had to slow down on account of hot crosshead.

This was the first time the boat had been a way from the wharf and the starboard L.P. crosshead burned out probably due to an oil pipe being stopped up. The damage required a new crosshead and guide rod.



March 8 1918.

Trial of #322

80 ft Patrol Boat.

Hull same as #309 & 312

but powered with 2-8 cyl. "Duesenberg"  
gasoline motors.  $6\frac{3}{4} \times 7\frac{3}{4}$

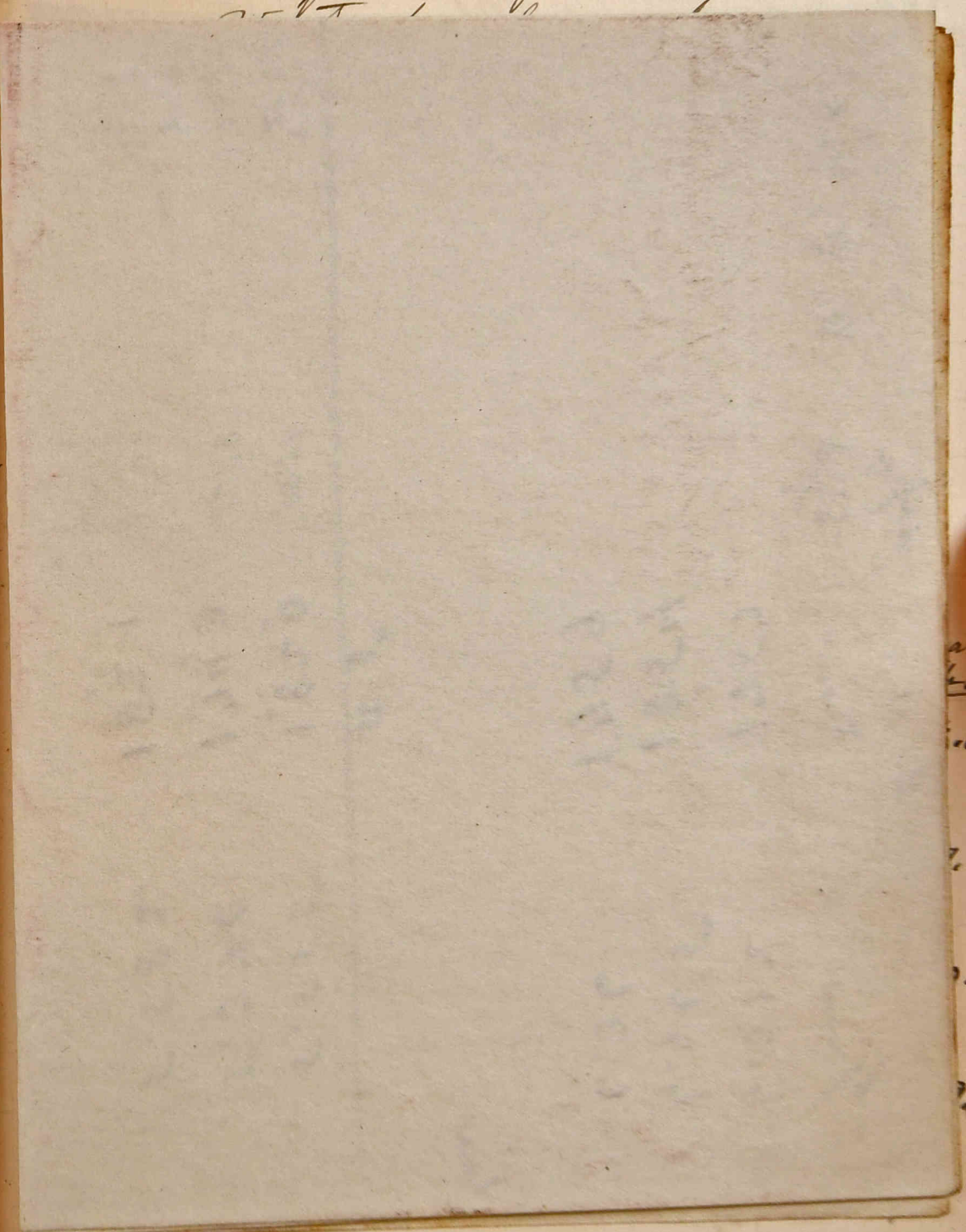
Propellers 28" x 28", 3 blade Columbian "Architect"

Lower  $\frac{1}{2}$  mile of harbor course, Wind SSW about 15 mph.

	Time	r.p.m.	Speed m.p.h.	Slip %	Mean Speed	Mean Slip.
S	1-16	Throttled 1120 r.p.m.	23.71	20.1	24.19	18.5
N	1-13		24.68	16.9		
S	1-15		24.00	19.2	24.34	18.1
N	1-13		24.68	16.9		
N	1-10	Wide Open. 1200 r.p.m.	25.75	19.1	25.73	18.6
S	1-9		26.10	18.0		

March 20, 1918

Trial of #330





Mount # 1

m/h  
Speed

Time

R.P.M.

slip Rev.

① 12.653	285	19.1%	1578 37 25	4.58
② 11.055	288	5.4%	1351 31 90	5.41
③ 13.154	283	19.7%	1590 37 55	4.52
				3)14.51 4.84
				4)19.92 4.98

3)44.2  
14.7

4)49.6  
12.4

# 2

Time

R.P.M.

Rev.

① 8.078		14.7%	1495 3 53 0	7.38
② 8.770		21.3%	1625 3 83 9	6.47
③ 8.112		15.3%	1508 3 56 0	7.33
				4)27.65 6.91
				4)72.6 18.15

Av.

# 3

7.808	1752
7.536	1627
7.795	1728

Av.



	# 4	rev.	Spd	R. P. M.
S	6.312	1757		
N	6.465	1854		
S	6.36	1759		

Av.

	# 5	rev.	Spd	Slip.
S	5.555	1820 4300	10.11	29.8%
N	5.370	1743 4120	10.58	26.7
S	5.582	1821 4300	10.03 $\frac{30.72}{10.24}$	29.8 $\frac{385.3}{28.4}$

Av 5.469      1782      10.95  
10.38      770

4130  
10.32

Factor for rev.

$$2 \frac{118}{100} = 2.36 \checkmark$$

$$\frac{2.97}{1.25} = 2.37 \checkmark$$



March 8 1918.

Trial of #322

80ft Patrol Boat.

Hull same as #309 & 312  
but powered with 2-8 cyl. "Duesenberg"  
gasoline motors.  $6\frac{3}{4} \times 7\frac{3}{4}$ "

Propellers 28" x 28", 3 blade Columbian "Architect"  
Lower  $\frac{1}{2}$  mile of harbor course, Wind SSW about 15 mph.

	Time	r.p.m.	Speed mi/hr.	Slip %	mean Speed	mean Slip.
S	1-16	throttled 1120 r.p.m.	23.71	20.1	24.19	18.5
N	1-13		24.68	16.9		
S	1-15		24.00	19.2		
N	1-13		24.68	16.9		
N	1-10	wide open 1200 r.p.m.	25.75	19.1	25.93	18.6
S	1-9		26.10	18.0		

March 20, 1918

Trial of #330

25ft open launch

(Sample for Destroyer Tender)

weight 2700<sup>#</sup>

4 cyl, 4 cyc. "Speedway" motor  
rated 15 P at 650 r.p.m.

19.4 " 800 "

21.4 " 900 "

Propeller 20" x 21", 4 blades.

Wind light S.W., One on board.

Upper  $\frac{1}{2}$  mile of Pappaquash course.

	time	rev. in $\frac{1}{2}$ mi.	Speed mi/hr.	r.p.m.	Slip %	mean Speed	mean slip.
N	4-47	1768	6.28	370	14.7	6.11	16.1
S	5-3	1828	5.94	362	17.6		
N	3-45	2017	8.00	538	27.1	7.68	27.5
S	4-5	2091	7.35	433	27.9		
N	3-28	2148	8.65	620	29.8	8.53	30.8
S	3-34	2206	8.41	619	31.8		
N	2-57	2102	10.17	714	28.4	10.15	29.2
S	2-58	2155	10.12	726	30.0		



May 24, 1918.

Official trial of # 323. - 112' steel, flush deck "Chaser". Same as # 306 and sits underwater, and as to power plant, but with different internal accommodations. Vessel was ordered by J.P. Morgan. Trial was made under direction of a Board from 2<sup>nd</sup> Naval District, and was run for two hours at full speed starting outside Newport Harbor, and going over Rose Is. Navy Mills, then to Sandy Pt. - making a ~~return~~ turn below Hog Is. and return, and repeating. Each full run was very nearly 6.9 sea miles.

The vessel was fully equipped with construction outfit. The oil tank was  $\frac{3}{4}$  full, having 9 tons but there were no stoves on board. There were about 15 persons, and there was a fresh S. breeze, and near the low water mark.

Up.	20	40 $\frac{1}{2}$	=	20.05 k	
Down	21	5	=	19.65	19.85
Up	20	16	=	20.42	} 19.92 k = 23.0 miles
Down	21	37	=	19.20	

Boiler pressure was very nearly 250 lbs.

The safety valves after blowing.

Blower - 1020 r.p.m. - Press. ?

Circulating eng. 820 "



Official trial of # 323 May 24, 1918

pressures

		HP	IP	LP	Vac.
N	S	235	85	21	24½
	P	235	85	20	24½
S	S	"	"	"	"
	P	"	"	"	"
N	S	220	100	19	25½
	P	235	85	20	25½
S	S	215	76	16	25
	P	235	85	20	25½

boiler 250 #

Rev. per min. starboard Eng. from 465 to 445  
 Port. " " 455 to 435

blower, 1020  
 circulating eng., 820

460 gal. of fuel oil was used.



May 24, 1918.

Official trial of # 323. - 112' steel, flush deck "Chaser". Same as # 306 and others under water, and as to power plant. Sub with different interior accommodations. Vessel was ordered by J.P. Morgan. Trial was made under direction of a Board from 2<sup>nd</sup> Naval District, and was run for two hours at full speed starting outside Newport Harbor, and going over Rose Is. Navy Mills, then to Sandy Pt. - making a ~~return~~ turn below Hog Is. and return, and repeating. Each full run was very nearly 6.9 sea miles.

The vessel was fully equipped with construction outfit. The oil tank was  $\frac{3}{4}$  full, having gas but there were no stoves on board. There were about 15 persons. and there was a fresh S. breeze, and near the low water slack.

Up. 20<sup>m</sup> 40<sup>h</sup> 2<sup>m</sup> = 20.05 k  
 Down 21 5 = 19.65 19.85  
 Up 20 16 = 20.42  
 Down 21 37 = 19.20 20.01

} 19.92 k = 23.0 miles

Boiler pressure was very nearly 250 lbs.

The safety valves after blowing.

Blower - 1020 r.p.m. - Press. ?

Circulating eng. 820 "

Continued

Engine pressures.

	HP.	IP	LP	vac
A	st. 235	85	21	24 $\frac{1}{2}$
	pt. 235	85	20	24 $\frac{1}{2}$
S	The same			
A	st. 220	100	19	25 $\frac{1}{2}$
	pt. 235	85	20	25 $\frac{1}{2}$
S	st. 215	76	16	25
	pt. 235	85	20	25 $\frac{1}{2}$

Revolutions { Starboard. 465 to 445  
 Port. 455 to 435

By stick measurement of tank about 460 gals. of fuel oil was used.



Sept- 20 1918

"Lanai" Houseboat

of Ben James. She has been all changed over internally, the Post Office 5' added to the stern and new Speedway motors put in of 50 HP each. (4 cyl.  $5\frac{3}{4} \times 7$ ) 2 - 26" dia x 20" pitch. Columbia 3 bl wheels.

In trial on Harbour Course today at low water and fresh S.W. wind.

N - (in 3 half) 2-42" = 11.1 miles  
 S (Full mile) 5-34" = 10.77 " } mean 10.9 miles  
 = 9.45 Km.

Rev were 770 & 760 = mean 765.

$$\frac{765 \times \frac{20}{12} = \frac{1277}{10.9 \times 88} = \frac{952}{1277} = 1 - \frac{952}{1277} = .255 \text{ - slip.}$$

The boat was very free from vibration and engines as quiet as any I have seen. Engines are tested to 85 HP @ 1000 rpm. and at speed of trial should have developed at least 65 HP.

Length over, 75' - but about 72' - breadth 17.4  
 draft about 2' 6"

June 17, 1919

Trial of #296, "The Polly"

32'-4" long x 6'-3" beam. Built on molds of "Bubble"

Propeller, 21 1/2" x 24", 4 Blades.

Motor, 4 cyl Van Blerk 5 3/4" x 6"

Weather calm. The after compartment gradually filled with water through leak around rudder stock.

	time	revolutions	r.p.m.	speed mi per hr.	slip of 0	mean speed	mean slip.
S	1-44	1558	899	17.31	14.7	} 17.41	15.1
N	1-43	1560	909	17.50	15.5		
S	1-26	1504	1049	20.91	12.3	} 20.68	12.4
N	1-28	1507	1027	20.45	12.4		
S	1-14	1499	1215	24.30	11.9	} 23.94	12.0
N	1-17	1500	1169	23.38	12.0		
S	1-17	1499	1168	23.38	11.9	} 23.69	12.4
N	1-15	1512	1209	24.00	12.8		
S	3-13	<del>1420</del> 1675	521	9.34	21.3	} 9.26	21.8
N	3-16	1699	520	9.18	22.3		
S	2-30	2998	1199	24.00	11.8	} 23.89	12.2
N	2-32	3022	1194	23.77	12.6		

Over.







June 24 & 25, 1919

Trial of #377, "Gyrene" 65'-10" x 11-3"  
high speed cruiser; built on molds of #307

2-6 cyl., 5 3/4" x 7" Speedway motors.

Propellers, 26" x 26", 3 bl. Columbian "Rocket"

	Time	Speed	r.p.m.	Slip.
N	2-35	23.2	S 1140 P 1120	10.5 8.75
S	2-36	23.1	"	10.75 9.25
N	1-23	21.7		
S	1-19	22.8		

May 5, 1920

Trial of #372, "Vasanta"  
80' OA, 76' W.L., 12-6 beam, 4-0" draft.

2-6 cyl., 5 3/4" x 7" Speedway motors.

Propellers, 28" x 25" H.M.Co.

Whole of Popasquash course, Fresh N.E. wind

	Time	Speed	r.p.m.	Slip.
S	3-25	17.57		
N	3-33	16.89		
S	3-17	18.25		
N	3-15	18.44		
S	3-13	18.66	985 945	20.0% 16.6%
N	3-13	18.66	990 985	20.3% 20.0%

3.217

671



June 29, 1920

Trial of #373  
66'-0" x 64'-11" x 11'-2" x 3'-0", high speed  
express boat.

2- 8 cylinder Van Blerk motors  
Propellers 24" x 26" Columbian. 3-blade  
South half of Papasquash course.  
All tanks full

	Time	Speed	r.p.m.	slip.
N	1-15	24.0	S 1350 P 1366	22.0% 22.7%
S	1-14	24.32	S 1396 P 1382	23.4% 22.7%

The boat was first fitted with 22" x 24"  
3-blade "Columbian" wheels but they  
cavitated very badly above about 18 mph.

July 1, 1920

Trial of #375 "Petounia"  
58'-0 $\frac{3}{4}$ " x 55'-1 $\frac{1}{4}$ " x 12'-3" x 3'-6" Cruiser.  
6 cyl. 4 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " "Speedway" motor driving  
through reduction gear with ratio  $\frac{40}{91}$ .  
Propeller, 4-blade 32" x 48"  
South half of Papasquash course;  
Wind light N, tide flowing south.  
Boat fully loaded.

	time	speed	r.p.m. engine	r.p.m. propeller	slip %	mean speed	mean slip.
N	3-5	9.78	828	364	31.0		
S	2-39	11.32	818	360	20.6		
N	2-55	10.28	848	373	39.4	10.76	about 53 #
S	2-40	11.25	848	373	33.6		
N	2-55	10.28	842	370	32.7		
S	2-40	11.25	854	375	34.1		
N	3-45	9.23	730	327	36.7		
S	2-56	10.23	742	326	30.5		
N	2-56	10.23	923	406	51.2	10.74	
S	2-40	11.25	854	376	34.0		

Throttled

170 x  $\frac{228}{53} = 377$  Prop. ?

about 65 # at 10 K. (11.5 mi/hr)







Run	S	P	S	P	S	P	S	P	S	P	Draft <sup>1/15</sup> water.	Blower rpm.	Circ Eng. rpm	Hot Well temp.	Feed Pump rpm	Engine rev. over course.
Boiler	185	165	165	53	9	18	3.7	3.7	150	128	3290	3480	200			
HP	225	190	63	12	20	3.7	150	128	3290	3480	200					
IP	265	235	200	85	75	20	17	15	17	5.0	725	750	158	5020	5110	
LP	285	250	215	225	88	78	23	17	14	6.0	762	158	5020	5110		
V	265	215	130	150	32	35	2	3	20	23	2.8	565	138°	84	788	
Draft	225	195	135	135	36	40	3	5	20	22	2.4	543	409	81	75	
Blower rpm.																
Circ Eng. rpm																
Hot Well temp.																
Feed Pump rpm																
Engine rev. over course.																
Air																

Prophet 3 Stroke 56" x 78"



No 374.

Aug. 14<sup>th</sup> 1920.

"Alert" for Mr. Lake Stone.

140' x 17'. Steel Express Steamer. Twin screw

2 - Oil burning boilers - 2 condensers.

2 - ~~9" 14" x 22 1/2" x 12"~~ Engines, 3 bl. 56" x 78" ~~propellers~~  
10" x 16" x 25" x 13 1/2"

Preliminary trial Aug 14, vessel nearly completed, but furniture not on board. And only small amount of fuel & water in tanks.

Made ~~four~~ runs over Sandy Pt - Halfway Rk. <sup>miles</sup> (2.815) course beside same running with about 120 lbs and a few miles with 200+ in stock, all of which were very satisfactory - machinery all working very well and the boat handled exceptionally well. Runs in mod SSW breeze. (about 15 miles). 1<sup>st</sup> grade ebb.

1<sup>st</sup> S - Time 9<sup>h</sup> 36" = 17.6 K  
2<sup>nd</sup> N " 9.35" = 17.57 K  
3<sup>rd</sup> S " 8-25 = 20.50 K  
4<sup>th</sup> N " 9- = 18.75 K

	Starboard Pressures					Port Pressures				
	Boiler	HP	Int.	LP	vac	Boiler	HP	Int.	LP	vac
1 <sup>st</sup> S										
2 <sup>nd</sup> N	266	150	48	9	21"	290	155	48	1	?
3 <sup>rd</sup> S	246	175	56	12	19 1/2"	230	175	57	3	?
4 <sup>th</sup> N	236	175	56	12	20 1/2"	255	185	60	1	?

Aug-17<sup>th</sup> pm. Continued.

Condition of yacht practically as on 14<sup>th</sup>. Ran trial for acceptance, Capt. representing owner. Many workmen and a few guests on board. Wind light SW - tide 1/2 ebb. Ran over Sandy Pt - Halfway Rk course of 2.815 sea miles, minimum depth 72'. Average depth nearly 100'.

First run lost on acct. of fuel stoppage.  
2<sup>nd</sup> run N. Time 9<sup>h</sup> - 31<sup>m</sup> = 17.65 sea miles  
3<sup>rd</sup> S " 7 - 26 = 22.70 " " } 21.82 mean speed  
4<sup>th</sup> N " 8 - 4 = 20.95 " " }  
5<sup>th</sup> S " 9 - 21 = 18.05 " " } 17.85 " "  
6<sup>th</sup> N " 10 - 14 = 16.65 " " }

	Starboard Pressures					Port Pressures				
	Boiler	HP	Int.	LP	vac	Boiler	HP	Int.	LP	vac
1 <sup>st</sup> S	184	165	53	9	18					165
2 <sup>nd</sup> N	235	190	63	12	20					
3 <sup>rd</sup> S	265	235	85	20	15"	235	200	75	17	17"
4 <sup>th</sup> N	285	245	88	23	14	250	225	75	17	17"
5 <sup>th</sup> S	265	130	32	23	20	275	150	35	3	23
6 <sup>th</sup> N	225	135	36	3	20	195	135	40	5	22

	Starboard					Port				
	Boiler	HP	Int.	LP	vac	Boiler	HP	Int.	LP	vac
1 <sup>st</sup> S										
2 <sup>nd</sup> N	150	3480	37"			150	3480			
3 <sup>rd</sup> S		3226	50	725	750	128	2970			
4 <sup>th</sup> N		?	60	762		158	?			
5 <sup>th</sup> S	84	2898	28	565	130"		3010			
6 <sup>th</sup> N	81	?	24	543	409	75	3430			

Mean speed. 3<sup>rd</sup> & 4<sup>th</sup> 12.5% " 5<sup>th</sup> & 6<sup>th</sup> 16.2% "



May 21 1921

"Gally Ann" Power Launch  
Built by Mr. Thuncker Borden. An  
enlarged model from model of Alerius  
dinghy. 12 1/2' long, 4' 8" wide, with  
"Cady" 3 HP 2 cycle motor. 4 bl. propeller  
10" dia. bent to about 1 1/2" pitch.

Weight of boat complete. 400 lbs.

Trial on Cove course of 394.5 ft. A.S.  
Time 47 sec. and 580 r.p.m. 2 on board.

Rate 5.7 m.p.h. Advance per revolution 10 1/2"

With one on board on 1/2 mile course. - a  
little over 6 miles. and 600 r.p.m.

Standing pull. 57 lbs. at about 450 r.p.m.

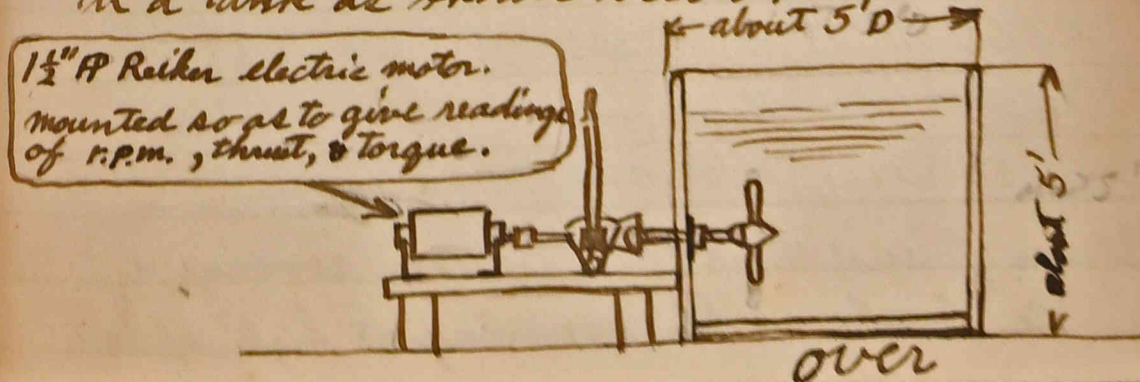
Dec 21, 1921

Test of 13", 3-blade Gordon Reversible  
Propeller.

The purpose of this test was to get data  
in connection with the use of reversible propellers  
on a proposed, twin screw, gasoline driven,  
fire boat for the City of Providence.

The boat to pump 4000 gal. of water at  
150 lbs per sq. in. Such a stream would give  
a reaction of about 1300 lbs. It is proposed  
to have two motors delivering 300 HP. each  
at 1200 r.p.m. connected at the forward  
ends to single stage centrifugal pumps.  
(connected in series for 150 lbs. pressure) and  
aft through friction clutches to reversible  
propellers, which can be used for  
manouvering and acting against the  
nozzle reaction when the engines are  
working full capacity.

We happened to have on hand a sample  
Gordon reversible propeller, 3 blade, 13" diam,  
3/4" shaft, blades about 4" wide. This was fitted  
in a tank as shown below.





continued from page before

PITCH at 11 1/4" diam	SPEED E.P.M.	THRUST lbs.	TORQUE lb. ft.	HP	V	A	Elect. HP	Eff. of motor
0.87"	378	0	1.80	.129	16	14	.30	.43
	465	0	2.36	.208	18	15	.362	.58
	634	0	3.48	.420	27	19	1.688	.61
	845	0	5.24	.844	40	25	1.34	.62
	1182	46.1?	8.36	1.88	58	37	2.88	.65
4.62"	318	29.1	1.48	.090	13	14	.24	.37
	506	37.6	2.86	.276	21	19	.535	.52
	616	43.7	3.86	.453	28	22	.825	.55
	653	43.7	4.74	.679	31	25	1.038	.65
	796	55.9	6.48	.983	39	32	1.672	.59
8.55"	999	87.4	9.24	1.76	54	42	3.04	.58
	225	31.6	1.50	.064	12	15	.24	.265
	338	46.1	2.64	.170	17	19	.433	.39
	420	53.4	3.98	.318	22	22	.746	.43
	450	58.2	4.86	.416	25	24	.806	.52
12.4"	548	75.2	6.86	.715	33	35	1.55	.46
	683	97.1	10.24	1.33	43	48	2.76	.48
	161	17.0	1.00	.037	10	14	.188	.20
	266	19.4	2.74	.139	16	20	.429	.32
	330	48.5	3.86	.243	20	23	.617	.39
	360	53.4	4.86	.343	22	26	.767	.45
	439	68.0	7.38	.616	28	36	1.35	.45
	536	97.1	11.12	1.136	39	52	2.72	.42

It was found that the propeller reversed quite freely while running at high speed

March 13 1922

Power Trial of #876

Auxiliary Cruiser for Mr. Geo. L. Baker.

Length OA 60-6 1/2" WL 45-1 1/2"

beam

draft.

Engine, J.V.B. 4 cyl., 4 cya, 4 3/4" x 6"

Propeller, 2 bl. 28" x 20", folding type.

Trial on upper half mile of Popasquash course, low tide, wind about 10 mi/hr SW.

	time.	revolution over course	r.p.m.	speed mi/hr	slip %	mean speed	mean slip.
N	3-15	2474	762	9.23	35.9	9.12	35.8
S	3-20	2465	741	9.00	35.7		
N	3-27	2325	653	8.70	31.9	8.37	33.6
S	3-44	2446	656	8.04	35.3		

First pair with full <sup>open</sup> throttle  
 second " " " 1/2 throttle.



July 28 1922

Trial of Helianthus. # 378

A watercooled ex. manifold has just been installed on the J.V.B. engine and the engine had the first overhauling after about 5500 miles running. Dis-carbon removed, valves ground, and one connecting rod big adjusted. also base cleaned. The yacht bottom is a little foul - being 7 weeks afloat, tanks are  $\frac{2}{3}$  full. Has 3 bl. 28" x 22" propeller designed for her.

Tests were made over Harbor Course at about  $\frac{1}{2}$  flood tide. There was 3340 wind, 12 to 14 miles and .1 kn or more tide in South half, which has been corrected for.

For the first time motor has run without knocking and could run with wide open Throttle.

#	Throttle	Time	Corrected	Rev.	Corrected	% slip	R.p.m.	Speed miles	Speed knots	Corrected for wind
1	N. "3"	6-31	6-34	3353	3380	.168	515	9.13	7.97	7.9
2	S "3"	7-11	7-8	3630	3605	.216	506	8.4	7.30	
3	N $3\frac{5}{8}$	6-15	6-18	3350	3376	.164	536	9.6	8.29	8.20
4	S $3\frac{5}{8}$	6-55	6-50	3635	3610	.22	526	8.67	7.65	
5	N $2\frac{1}{4}$	3-44	6-38	1622	3370	.163	502	9.26	7.86	7.75
6	S $2\frac{1}{4}$	3-44	7-18	1785	3480	.190	478	8.02	7.12	
7	N 5"	2-56	6-2	1654	3392	.168	563	9.95	8.65	8.57
8	S 5"	3-24	6-38	1853	3615	.219	545	9.05	8.16	

When throttle open (5") engine probably developed 27 HP

\* South  $\frac{1}{2}$  mile.

April 26, 1923

Trial of "Princess", Ex Virginia, Ex Irolita #  
With Welman Seaver Morgan motor,  
4 cyl., 4 cye.,  $4\frac{3}{4} \times 6$ "  
Folding propeller 30" x 17"  
Wind SW about 23 mi per hr.  
Lower half of Popasquash course.

	time	k.p.m.	Speed mi per hr.	slip.
N	3-25	727	8.80	24.8%
S	6-25	630	4.68	53.8%



June 7, 1923

Trial of #380; Alder designed  
power boat, length OA 62'-0", WL 61'-4",  
beam 13'-0", draft 3'-8"; 2-Sterling Model FM  
motors; Propellers, 3 blade Columbian Architect  
26"-20"

Upper half mile course; wind light SE

run	S rpm	time	P rpm	speed	S slip	P
N	693	2-30	680	12	8.6%	6.8%
S		2-30		12		
N	943	2-07		14.1	21%	

The depth of water was not right for the speed  
and she dragged a very large wave.

June 17 1923

Power Trial of Schooner Yacht "Wildfire"  
#891

length OA 62'-0"      one 6-cyl. Speedway  
"      LW 61'-4"      motor 5 $\frac{3}{4}$ " X 7"

beam 13'-0"

draft. 3'-8"

Propeller 2 bl. folding.  
33"-20"

Lower half mile course, wind very  
light northerly.

run	rpm	time	speed	slip
S	711	3-9	9.5	29.4%
N	697	3-32	8.5	35.6% (throttled a little)

835

748



June 30 1923

Helianthus. (# 378)

With new "Sea Gull" engine (6 cyl - 4 1/16" x 6")  
New propeller. 27" x 19 1/4" (as measured) 3 bl.  
Stern has been lengthened about 3' making  
l.w.l. at 3'9" draft. - 61' nearly.

Bottom clean and quite smooth, Over South  
half mile course in harbor. Wind N.W. 8 to 10 m.

Current southerly about 1/3 m. Ratio propeller to Cruise <sup>100</sup>/<sub>183</sub>

Run	Throttle	Time	Counter	Rev of propeller	Corrected Rev	Time	R.p.m.	Speed	Current	Knots	Slip
1-N	Open	2-39	1218	2232							
2-S	"	2-31	1163	2132	2135	2-31	848	11.90	3.33		
3-N	"	2-41	1250	2290	2882	2-40	856	11.25	3.32	10.05	2.55
4-S	"	2-31	1168	2142	2143	2-31	851	11.90	3.33		
5-N	"	2-41	1244	2260	2272	2-40	853	11.25	3.32	10.05	2.55
6-S	1/2 open	2-31	1170	2146	2148	2-31	852	11.90	3.35		
7-N	"	2-42	1254	2300	2285	2-40 1/2	853	11.20	3.35	10.03	2.57
8-S	3/4 open	2-35 1/2	1136	2082	2085	2-36	802	11.54	3.34		
9-N	"	2-47	1213	2225	2210	2-45 1/2	802	10.87	3.33	9.72	2.33
10-S	1/4 open	2-53	1086	1988	1992	2-53 1/2	688	10.37	3.35		
11-N	"	3-7	1178	2160	2145	3-5 1/2	693	9.67	3.35	8.70	2.05
12-S	Nearly closed	3-25 1/2	1029	1880	1885	3-26	548	8.73	3.50		
13-N	"	3-54	1165	2122	2108	3-52 1/2	546	7.73	3.50	7.14	1.75

Note. Speed and slip were affected by  
limited depth of water when running over 9 1/2  
miles. Probably over 10.7 k with under 245 slip  
would have been obtained in deep water. Contrasting depth  
in course was about 20'

May 21, 1924

Trial of "Barbara"

N.Y. Y.C. <sup>40</sup> footer with a 4-cylinder  
3 1/2" x 5" Scrips motor driving a 2-blade,  
folding, propeller 24" D x 14" P.

Upper half of Popasquash course.

Wind light N.E.

Towing light rowboat.

Run	rpm	time	speed	slip	average speed	average slip
throttled	N	4-13	7.11	34.4	7.39	33
	S	3-55	7.66	32.2		
wide open	N	3-58	7.56	33.3	7.91	31
	S	3-38	8.25	29.0		



May 28, 1924

Trial of "Au Revoir"

With the old Stilson motor driving one propeller through a reduction gear with  $1\frac{1}{2}$  to 1 reduction; 2 bl. propeller 24" x 24"

Upper  $\frac{1}{2}$  mi course; wind light N.W.

Run	r.p.m. engine	r.p.m. propeller	time $\frac{1}{2}$ mi	Speed	slip	Average speed.	
N			3-38	8.26		8.38	wide open
S	609	406	3-32	8.49	8.0		
N	539	353	3-51	7.80	2.8	7.95	slightly throttled
S	555	369	3-42	8.11	3.2		

The revolutions were taken from a friction driven air compressor which probably had some slip; this would account for the low propeller slip.

June 16, 1924

Trial of "Active" Ex "Isabell" #277

With a new 6 cyl.  $3\frac{3}{4}$ " x 5" Packard motor and 3-blade propeller 20" diam, x about  $15\frac{1}{2}$  pitch.

Upper  $\frac{1}{2}$  mi course; wind light S; tide turning flood.

Run	time	rev. in $\frac{1}{2}$ mi	f.p.m.	speed	slip %	Average speed	Average slip.
N	4-48	<del>2170</del> 1952	<del>452</del> 417	6.25	<del>6.0</del> 4.5?	5.99	9.8
S	5-15	<del>2366</del> 2150	<del>451</del> 406	5.72	<del>13.6</del> 4.1		
N	3-24	<del>2625</del> 2310	<del>773</del> 680	8.83	<del>22.2</del> 11.6	8.63	23.4 13.7
S	3-34	<del>2706</del> 2435	<del>758</del> 682	8.42	<del>24.6</del> 16.1		
N	3-2	<del>2761</del> 2482	<del>912</del> 820	9.90	<del>26.1</del> 17.8	9.77	27.2 19.1
S	3-7	<del>2845</del> 2561	<del>917</del> 823	9.64	<del>28.3</del> 20.3		
N	2-14	<del>2680</del> 2410	<del>1200</del> 1077	13.43	<del>23.8</del> 15.4	13.01	25.3 17.1
S	2-21	<del>2788</del> 2506	<del>1188</del> 1067	12.79	<del>26.8</del> 18.6		
N	2-9	<del>2680</del> 2412	<del>1248</del> 1121	13.96	<del>23.8</del> 15.4	13.46	25.0 16.8
S	2-19	<del>2769</del> 2498	<del>1152</del> 1077	12.96	<del>26.2</del> 18.2		
N							
S							



June 1925

Trial of "Harlequin" #934

Auxiliary schooner for Mr. Geo. Knoles.

Length O.A. 50'-0"; W.L. 39'-0"; Beam 13'-6"; draft 6'-8"

6 cyl. Hermath motor 4  $\frac{3}{8}$ " x 5  $\frac{1}{2}$ "

3-blade Hyde feathering propeller 24" x 20"

Upper  $\frac{1}{2}$  mi course

	Time $\frac{1}{2}$ mi	rev. $\frac{1}{2}$ mi.	mi per hr.	r.p.m.	% slip	Av. speed	Av. slip
S	5-07	1890	5.86	366	16	5.86	16
N	5-07	1875	5.86	363	15.5		
S	3-49	2050	7.85	537	22.7	8.02	21.6
N	3-49	1993	8.18	544	20.5		
S	3-22	2238	8.90	664	29.1	9.00	28.4
N	3-18	2195	9.10	665	27.8		

Aug. 3 1925

Trial of "Rofa" #933

Sister ship of "Harlequin", built for Mr. Henry & Tiffany.

Fitted with Herreshoff folding propeller

Upper  $\frac{1}{2}$  mi. course.

	Time $\frac{1}{2}$ mi.	Speed	rev. $\frac{1}{2}$ mi.	r.p.m.	Slip %	Av. speed	Av. slip
N	5-28	5.49	1958	358	19	5.55	17.6
S	5-20	5.62	1889	354	16.1		
N	3-38	8.26	2158	593	26.5	8.36	25.6
S	3-33	8.46	2100	592	24.6		
N	3-25	8.79	2330	682	31.8	8.87	31.0
S	3-21	8.95	2270	678	30.2		

620  
310



May 10, 1926

# Trial of "Mary Rose" #954

Aux Schooner for Mr. Harold Brooke.

6-cyl. Scripps Model F engine.  $3\frac{3}{4} \times 5$ "

Herreshoff folding propeller 24" x 14"

Upper  $\frac{1}{2}$  mile course; tide ebb; wind S, 4 mph

	Time $\frac{1}{2}$ mile	Rev. $\frac{1}{2}$ mile	M. per Hr	r.p.m.	% slip	Av. Speed	Av slip
N	4-40	3150	6.42	670	28.1	6.17	30.5
S	5-04	3370	5.91	665	32.8		
				910			
N	3-37	3290	8.30	910	31.2	8.12	31.1
S	3-47	3380	7.93	892	33.0		
N	3-12	3510	9.39	1098	35.5	9.25	36.2
S	3-18	3580	10.10	1086	36.8		



