THE BAHAMAS MARITIME AUTHORITY

"ICEVINHA"

IMO Number 6909507
Official Number 709287

Report of the investigation into
the Collision between "ICEVINHA"and a towed barge
on
on 22 August 1995

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1. SUMMARY

1.1. During the first fifteen minutes of the morning of 22 August 1995, while the Motor tanker "ICEVINHA" was underway, making a final, slow approach to the anchorage of the Louisiana Offshore Oil Port (LOOP), USA, a tug towing a barge crossed close, from port to starboard, across her bow. The tugmaster, allegedly realising his predicament, stopped his vessel thus allowing the tow wire to sink.

1.2. The barge continued, on its own momentum and struck the ship on the port bow tearing a large hole into No. 1 port wing ballast tank.

1.3. The collision occurred in position 28°48'N, 089°58'W.

1.4. There were no records of any personal injuries or pollution.

1.5. The vessel later proceeded, under tow, to Mobile, Alabama where the cargo was removed and then to the Benders Shiprepair yard where repairs were effected under the supervision of the ship's Classification Society.

2. PARTICULARS OF VESSEL

2.1. "ICEVINHA" was a tanker provisionally registered at Nassau, Bahamas, of welded steel construction having a raised forecastle and poop. The accommodation and machinery spaces were situated aft. She had the following principal particulars:

- Length overall - 188.68 metres
- Length BP - 179.625 metres
- Breadth - 22.004 metres
- Depth - 14.60 metres
- Gross Tonnage - 17,122 tons
- Deadweight - 25,795 tonnes
- Call Sign - C6MY9

2.2. She was powered by a Gotaverken seven cylinder main engine, type 630/1400VGS7U, that was rated, when new, to develop 6,804 kW (9,250 bhp) and which drove a single Kamewa controllable pitch propeller. The engine was noted, in a contemporaneous printed ship description, to have an output of 5,075 kW (6,900 bhp). Electrical power was provided by four generators that developed a total of 2,240 kW. The vessel was fitted with a Kamewa bow thrust unit that was not operational.

2.3. The Vessel was built in 1969 at La Seyne, France and was previously named "Seavinha", "Purha" and "Winha". At the time of the incident she was Owned by Hercules Navigation Inc., Bridgetown, Barbados, W.I. and managed by Starship Management, Miami.

2.4. Cargo was carried in four centre tanks having a total capacity of 28,313 m^3.

2.5. The Vessel was provisionally entered into the Bahamas Registry in 1996 and was Classed with Lloyd's Register. At the time of the incident she complied with all international statutory requirements and certification.

2.6. After the collision the vessel was laid up for a period of about one year, primarily waiting for replacement parts. During this time the vessel was sold and the name changed, although she remained on the Bahamas Register until June 1998 under a different name and owner.

2.7. When the vessel returned to trade a Provisional Interim Certificate of Class was issued on 31 August 1996 including the following Conditions of Class which, we understand, were carried over from the time of the incident:

- The Bow Thruster to be isolated and unavailable for use.
- The Inert Gas notation was suspended.

2.8. At the time of the collision a considerable amount of the bridge equipment was stated by the Master and his deck officers not to have been in working condition. In some cases there was a dispute between the evidence given by the officers. We summarise that evidence below, indicating which officer positively identified a piece of equipment to be in working order or "broken":

Equipment	*Working*	*Not working or broken*
Doppler log	-	Master, 2nd Mate
Course recorder	-	Master, 2nd Mate, 3rd Mate
Engine gauges	Some (2nd Mate)	-
VHF	Master, Mate, 2nd Mate, 3rd Mate	-
GPS SatNav	Master, 3rd Mate,	-
Transit SatNav	3rd Mate	Master
ARPA Alarm	Mate, 2nd Mate	Switched off (Master)
Echo Sounder	Master	2nd Mate
Wheelhouse clock	-	Master, 2nd Mate, 3rd Mate
Chartroom clock	Master, 3rd Mate	-

3. NARRATIVE OF EVENTS

3.1. "ICEVINHA" was on a voyage from Houston, Texas, USA to the LOOP (Louisiana Offshore Oil Port) located South of the entrance to the Mississippi River. She was laden with a cargo of No. 2 and No. 6 Fuel Oils.

3.2. The main engine was stopped when the vessel was off Galvaston, soon after the commencement of the voyage, for repairs which are not relevant to this investigation. Towards the end of the voyage, at 2000 hours 21 August 1995, a crack in the rudder stock was discovered. The vessel thereafter proceeded with some caution, at a speed of 9 knots, making constant checks in case there was any deterioration in its condition. There was no evidence to suggest that the rudder stock damage was contributory to the circumstances that led to the collision with the towed barge.

3.3. The following times, events and observations that followed the above discovery, and which preceded the collision, were extracted from the vessel's records of 21 and 22 August 1995:

- 2220 Notice of one hour to arrival at LOOP, speed 9 knots.
- 2320 First observation of tug and tow - bearing 3 points (about 34°) on the port bow, range 5 nautical miles. Standby to engineers.
- 2325 Change speed to "slow ahead."
- 2355 Tug and tow still bearing 3 points on the port bow at a range of 2.5 nautical miles.
- 0000 Speed 5.5 knots.
- 0006 Dead slow ahead.
- 0007 Stop engines (not recorded in log book) - uncertainty about tug's intentions.
- 0012 Full astern. Speed = 1.8 knots. Tug crossing ahead at a range of 0.3 nautical miles.
- 0014 Collision with the towed barge. Ship's speed 0.80 knots. Position 28°48'N, 089°58'W
- 0016 "ICEVINHA" anchored at the LOOP anchorage.

3.4. The approach course to LOOP was 330°.

3.5. Throughout the material times leading to the collision the Bridge of the vessel was manned by the Master, the Third Mate - relieved by the Second Mate at or about 0005 hours - and a helmsman. The Chief Mate was on the forecastle in charge of the anchoring party from about 2330 hours onwards.

3.6. Ships navigation lights and the forecastle working lights were all on and working properly.

3.7. The tug was exhibiting three white masthead lights - indicative of a tug towing where the length of the tow from the stern of the towing vessel was in excess of 200 metres - and a green sidelight.

3.8. The barge being towed was seen to be exhibiting a green sidelight by the Master and the Second Mate from the bridge but not the Third Mate who had handed over to the Second Mate by 0005 hours.

3.9. Neither the Master of "ICEVINHA" nor the tug utilised any sound or light signals during the latter stages leading up to the collision until the tug was seen by one person to have made a searchlight signal at or very close to the time of the collision. There was also no VHF radio communication between either vessel.

3.10. The Master of "ICEVINHA" estimated that the tug was steering a course of about 060° while the Second Mate, also on the bridge during the final nine minutes before the collision, estimated that the course was between about 080° and 090°.

3.11. It was reported that the tug, having passed close ahead of "ICEVINHA" stopped her engines and may have manoeuvred slightly astern.

3.12. The effect of that would have been to slacken the tow wire which would then have sunk to the seabed. We interpret that to be a realisation by the Tug Master that the tanker "ICEVINHA" was about to collide with the tow wire and create a sudden, dangerously large increase in the tension on the tow wire.

3.13. The collision between the towed barge and the tanker caused a large hole to be torn into the shell plating of No. 1 port side ballast tank of the vessel. This hole was measured to be about 15 metres long by 3 metres high but was however about one metre above sea level. As the tank was an empty ballast tank there was no ensuing list to the vessel or loss of cargo or fuel.

3.14. Checks around the vessel were made by the ship's crew. Later a United States helicopter overflew at 0915 hours 22 August. Representatives of the United States Coastguard boarded the vessel later that day.

3.15. On 23 August the vessel was towed firstly to the outer anchorage, Mobile, Alabama and later to the Alabama State Docks Grain Elevator berth where lightering was commenced.

3.16. The cargo was lightered from the vessel which was then moved to a repair berth where the collision damage, the rudder stock and other outstanding repairs were eventually completed.

4. ANALYSIS

4.1. Courses and Speeds of the Two Vessels

4.1.1. The Master gave very precise details of the vessel's speed (1.8 and 0.8 knots) and yet both he and the Second Mate stated in evidence that the Doppler log was broken. The Chief Mate however estimated that at the time of collision that the vessel was stopped in the water and the fact that the anchor was let go only two minutes after the collision implies that the Masters statement of the speed of "ICEVINHA" was for all intents and purposes fairly accurate.

4.1.2. We estimate, based upon the speeds and engine movements given in evidence, that the distance travelled by "ICEVINHA" between 2320 hours and the collision at 0014 hours was about 5.8 miles which places the vessel, when on a course of 330° to have been just outside the northbound safety fairway which leads to the LOOP at 2320 hours.

4.1.3. Given the course of "ICEVINHA" was 330° and the tug's green sidelight was visible the tug's course must have been 038° or greater.

4.1.4. When the corresponding ranges and bearings of the tug and tow of 3 points on the port bow at 5 miles (2320 hours) and of 3 points on the port bow at 2.5 miles (2355 hours) are examined and plotted the following three scenarios are apparent:

i) If both ranges and bearings are assumed to be correct the tug and tow was steering **about North by 3.3 knots** up to about 2355 hours and **about East by 5.3 knots** thereafter.

ii) If it is assumed that the Master and Second Mate made an error in the range of the tug and tow at 2355 hours, (being 1.25 miles instead of 2.5 miles) the course and speed of the tug and tow would have been **about 035° by 3.3 knots**.

iii) If however the 2320 hours range had been incorrect (being 10 miles instead of 5 miles) the course and speed of the tug and tow would have been **about 090° by 5.3 knots**.

4.1.5. We have no firm evidence to assist in deciding which version of the above was closer to the truth except the following arguments:

- The Tug's green sidelight would not have been visible in the first part of i) above but the single stern light and orange towing light should have been sighted instead of the three masthead lights; so scenario i) appears unlikely.
- The Master's and Second Mate's estimate of the tug's course and speed tends to eliminate scenario ii).
- In scenario ii) the sidelight and the three masthead lights would have been at the edge of their visible arc and would have, in practice, occasionally been screened off.
- The Master's estimate of a course of about 060° suits none of the three.

4.1.6. We therefore conclude that the most likely course and speed of the tug and tow was **about East by 5 knots**.

4.2. **Actions of the Two Vessels**

4.2.1. Neither vessel was apparently exhibiting the signal of two red lights in a vertical line, prescribed in Rule 27 of the Collision Regulations, indicating a vessel not under command or restricted in its ability to manoeuvre.

4.2.2. The tug and tow was therefore required, by Rule 15 of the Collision Regulations, to "*keep out of the way*" of "ICEVINHA."

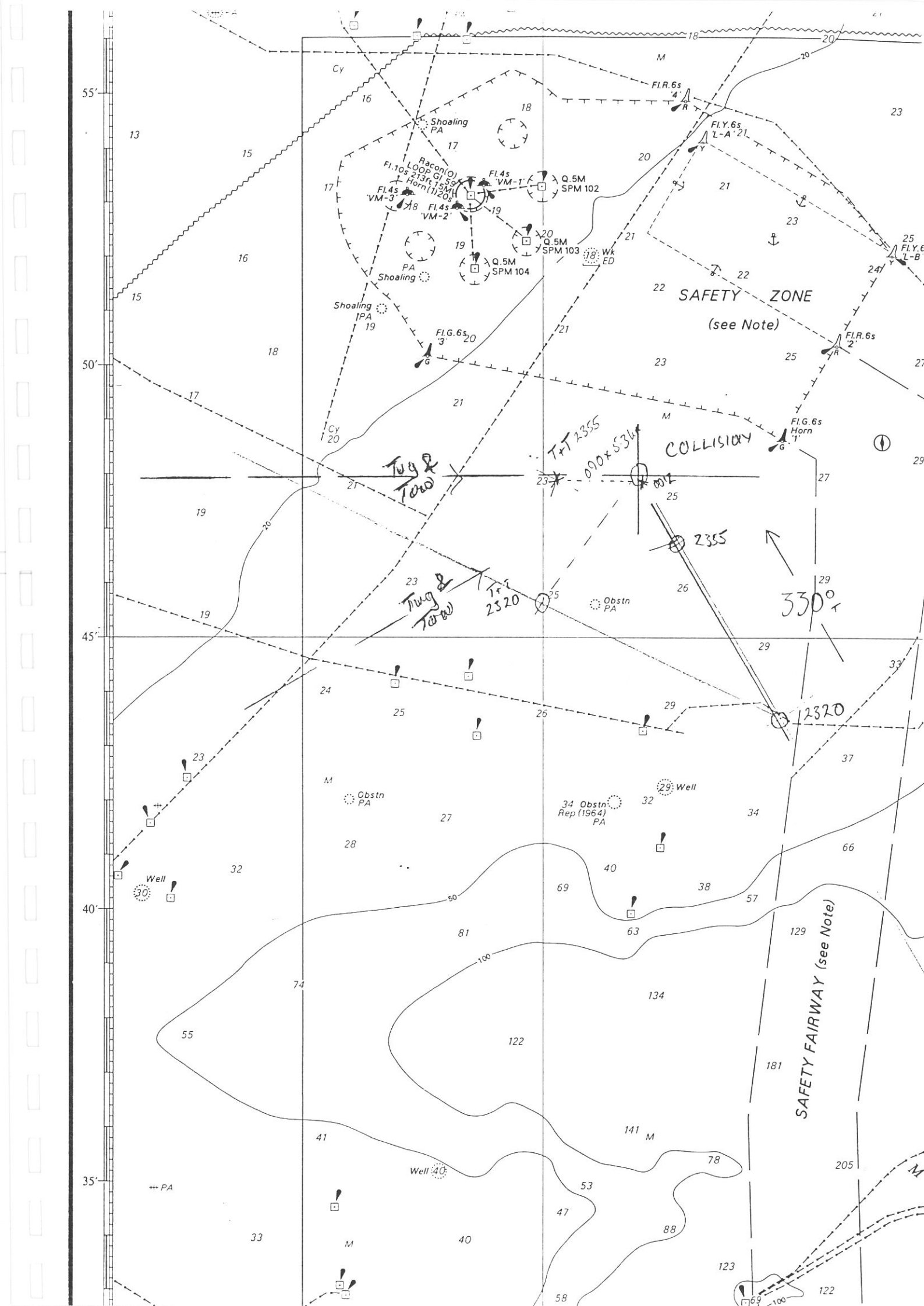
4.2.3. However, by Rule 17 of the Collision Regulations, "ICEVINHA" was required to "*keep her course and speed.*"

4.2.4. The evidence of the Master of "ICEVINHA" clearly states that, despite having knowledge of the presence of the tug and tow maintaining a reasonably constant bearing, he reduced the speed of his vessel from 2320 hours. He specifically stated that this was not to facilitate his approach to the LOOP anchorage but in an effort to avoid a close quarters situation with the tug and tow. It is however of note that we are not aware of what other traffic was in the vicinity and may have influenced the actions of both Masters. If "ICEVINHA" had been steaming at nine knots at the position of the collision she would have been about to enter the LOOP Safety Zone which may have been excessive.

4.2.5. The Master acknowledged in his deposition that the relative motion vector of the tug and tow changed from passing close astern to crossing ahead yet the relative position of them was constantly described as three points on the port bow. We therefore conclude that the point of closest approach was always close enough to create a close quarters situation.

4.2.6. It was also stated that, as the two vessels distance apart reduced, neither of them communicated with the other by light signal or VHF radio.

4.2.7. It was therefore incumbent upon the tug and tow to take action to avoid a close quarters situation. At the same time the Master of "ICEVENHA" was obliged to maintain course and speed.


55'
50'
45'
40'
35'
Cy
Shoaling PA
Racon(O) LOOP GI 59
Fl.10s 213ft 15M
Horn (1) 20s
Fl.4s VM-1
Fl.4s VM-3
Fl.4s VM-2
Q.5M SPM 102
Q.5M SPM 103
Q.5M SPM 104
Wk ED
Fl.R.6s 4
Fl.Y.6s L-A
Fl.Y.6s L-B
Fl.G.6s 3
Fl.R.6s 2
Fl.G.6s Horn 1
SAFETY ZONE
(see Note)
Tug & Tow
T+T 2355
090 x 5.3M
COLLISION
2355
2320
330°T
Obstn PA
Well
34 Obstn Rep (1964) PA
SAFETY FAIRWAY (see Note)

"ICEVINHA"

Speed of Vessel and Distance Steamed while Slowing Down

Time			Speed	Distance	
before collision	after engine order	Clock	each period	each period	to 0014 hr
-54	Full ahead	**2320**	**9.00**	**0.15**	5.77
-53	Full ahead	2321	9.00	0.15	5.62
-52	Full ahead	2322	9.00	0.15	5.47
-51	Full ahead	2323	9.00	0.15	5.32
-50	Full ahead	2324	9.00	0.15	5.17
-49	Slow ahead	2325	9.00	0.15	5.02
-48	1	2326	8.75	0.15	4.87
-47	2	2327	8.45	0.14	4.72
-46	3	2328	8.20	0.14	4.58
-45	4	2329	7.95	0.13	4.44
-44	5	2330	7.75	0.13	4.31
-43	6	2331	7.60	0.13	4.18
-42	7	2332	7.40	0.12	4.05
-41	8	2333	7.25	0.12	3.93
-40	9	2334	7.10	0.12	3.81
-39	10	2335	7.00	0.12	3.69
-38	11	2336	6.85	0.11	3.57
-37	12	2337	6.75	0.11	3.46
-36	13	2338	6.65	0.11	3.35
-35	14	2339	6.55	0.11	3.24
-34	15	2340	6.45	0.11	3.13
-33	16	2341	6.40	0.11	3.02
-32	17	2342	6.30	0.11	2.91
-31	18	2343	6.20	0.10	2.81
-30	19	2344	6.20	0.10	2.71
-29	20	2345	6.10	0.10	2.60
-28	21	2346	6.05	0.10	2.50
-27	22	2347	6.00	0.10	2.40
-26	23	2348	5.95	0.10	2.30
-25	24	2349	5.95	0.10	2.20
-24	25	2350	5.90	0.10	2.10
-23	26	2351	5.85	0.10	2.00
-22	27	2352	5.85	0.10	1.91
-21	28	2353	5.85	0.10	1.81
-20	29	2354	5.75	0.10	1.71
-19	30	2355	5.75	0.10	1.61
-18	31	2356	5.75	0.10	1.52
-17	32	2357	5.75	0.10	1.42
-16	33	2358	5.70	0.10	1.33
-15	34	2359	5.65	0.09	1.23
-14	35	0000	5.65	0.09	1.14
-13	36	0001	5.65	0.09	1.04
-12	37	0002	5.60	0.09	0.95
-11	38	0003	5.55	0.09	0.86
-10	39	0004	5.55	0.09	0.76
-9	**40**	**0005**	**5.50**	**0.09**	**0.67**
-8	D slow ahd	0006	5.50	0.09	0.58
-7	Stop	0007	5.05	0.08	0.49
-6	1	0008	4.60	0.08	0.40
-5	2	0009	4.25	0.07	0.33
-4	3	0010	3.90	0.07	0.26
-3	4	0011	3.55	0.06	0.19
-2	Full astern	0012	3.30	0.06	0.13
-1	1	0013	2.80	0.05	0.08
0	2	0014	1.80	0.03	0.03

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