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Navigational Confirmation of Titanic's CQD Position

By Capt. L. Marmaduke Collins

On September 1, 1985, an expedition led by Dr. Robert Ballard located the wreckage of the Titanic on the ocean floor in position 41° 43.9' N., 49° 56.8' W., some thirteen miles east of where she had reportedly foundered.

Shortly after the impact with the ice, on April 14, 1912, it was the Titanic's Fourth Officer Boxhall who had calculated her CQD position to be 41° 46' N., 50° 14' W. Considering that the wreck was not found at this location, armchair navigators have concluded that Boxhall's position was wrong

However, navigational calculations, based on the evidence, confirm that Boxhall's CQD position, of 41°46'N, 50°14'W, was correct.

By examining the evidence of the Titanic's navigating officers on April 14, 1912, we can determine the noon 14th position.

Mr. LOWE. [Senate Inq.Day 5]. We are there to do the navigating part so the senior officer can be and will be in full charge of the bridge and have nothing to worry his head about. We have all that, the junior officers; there are four of us. The three seniors are in absolute charge of the boat. They have nothing to worry themselves about. They simply have to walk backward and forward and look after the ship, and we do all the figuring and all that sort of thing in our chart room.

Junior (Navigating) Officers on watch Sunday, April 14, 1912:

8:00 a.m. - 12 Noon 4th Officer Boxhall, 6th Officer Moody (6th /O Moody, lost with the ship)

12 Noon - 4:00 p.m. 3rd Officer Pitman, 5th Officer Lowe

4:00 p.m. - 6:00 p.m. 4th /O Boxhall. 6th /O Moody

6:00 p.m. - 8:00 p.m. 3rd /O Pitman, 5th /O Lowe

8:00 p.m. - 12 Midnight 4th /O Boxhall, 6th /O Moody

Senator SMITH. [Senate Inq.Day 5] Did you have any part in determining the course and position of the Titanic on Sunday afternoon and evening?

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Mr. LOWE. I worked the course from noon until what we call the "corner"; that is, 42 north, 47 west. I really forget the course now. It is 60 33 1/2' west - that is as near as I can remember - and 162 miles to the corner.

This evidence of Fifth Officer Lowe was given on April 24, ten days after the accident. Without the benefit of charts, log books, or sight books, all of which were lost with the ship, he was questioned on the navigation of the ship.

Third Officer Pitman, as noted above, was on watch with Mr. Lowe. He stated [British Inquiry Day 13]:

A. I thought that the course should have been altered at 5:00 p.m.

Q. Why did you think so? -

A. Judging from the distance run from noon.

Accepting "60° 33 1/2' west" as S 60° 33 1/2' W true and rejecting "and 162 miles to the corner," which is obviously the distance run from noon to evening civil twilight for stellar observation, and accepting 3rd Officer Pitman's evidence ("I thought that the course should have been altered at 5:00 p.m. Judging from the distance run from noon"), we can calculate as follows:

Working back from the expected alter course position at the "corner" 42° N and 47° W applying 5 hrs x 22.1* knots = 110.5 miles, makes noon 14th position 42° 54.3'N, 44° 50'W.

The course being steered was S 85° W [S 62° W true].

Corroborating this, is the evidence of Quartermaster Rowe.

Q QM Rowe: 17587. What course was she steering?

A S. 85 deg. W.

Q 17588. By the compass in front of you, I suppose?

A. By the steering compass.

At 5.45 or 5.50 p.m., the course was altered to N 71° W compass.

QM Rowe

Q. 17583. During that watch, did you alter the course at any time?

A. Yes.

Q. 17584. Do you remember when it was?

A. Yes, at 5.45.

Q. 17590. At 5.45 to what did you alter it?

A. N. 71 W.

Q. 17586. Now, before you altered course, do you remember what course your vessel was steering?

A. Yes.

Q. 17587. What course was she steering?

A. S. 85 deg. W.

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At British Enquiry (15315), Fourth Officer Boxhall, in answer to the question, "Between 4 and 6, while you were on watch, do you remember the course being altered?" answered "The course was altered at 5.50."

Q. 15316. Do you remember what it was altered to?

A. I do not remember the compass course, but I remember the true course was S. 86 W.

There is a plausible reason for the five-minute discrepancy (5.45 as opposed to 5.50 p.m.) in the time the course was altered. The course change was made from the standard compass by one of the on-watch junior officers--positioned between numbered 2 and 3 funnels; Quartermaster Rowe, at the helm, was responsible for bringing the ship to the required course by order of the junior officer. QM Rowe would have noted the time as 5.45 p.m. when he commenced the alteration, whereas junior officer Boxhall would have entered into the log book record 5.50 p.m. as the time when the steering compass had settled on the new course.

As Charles H. Lightoller stated on Day 5 to the U.S. Senate Inquiry:

A. We have a standard compass and a steering compass. The standard compass is the compass we go by. That is the course that is handed over from one senior officer to another, the standard course. The junior officer goes to the standard compass which is connected with the wheelhouse by a bell, or by a bell push, wire and bell, and when she is on her course he rings that bell continually, showing the ship is on her course with the standard compass.

The other officer takes her head inside the wheelhouse from the compass the quartermaster is steering by. The standard course is on a board and the steering compass course is also on a board. Therefore, the quartermaster uses the board that is there for the steering compass. The senior officer of the watch looks to the standard compass board and passes that course along.

In the 6-8 p.m. last dog watch, it was the duty of the junior watch officer to prepare the information for evening stellar observation, i.e., time of civil twilight, stars available with approximate azimuths and altitudes. Junior watch officer Lowe determined evening civil twilight to be 22.21 GMT - Noon transit (Sun) 15:00 GMT = 7h 21m x 22 kts**= 162 miles. This is most likely what Lowe meant, when he answered from memory, that the distance was 162 miles--the distance run from noon to civil twilight for stellar observation.

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From noon position 14th, 42° 54.3'N, 44° 50'W. Course S 62° W (242°T) to 5.45 p.m.=5h 45m @ 22 kts =126.5 miles gives a/c position 41° 54.9'N, 47° 20.8'W.

5.45 p.m. a/c to S 86° W (266°T) to stellar observation = 1h 36m =@22 kts =35.2 miles gives Position 41° 52.4'N, 48° 07.8'W. Distance run from noon 126.5+35.2 =161.7 (162) miles.

Course 266° T from stellar observation to 11.40 p.m. = 4h 19m @22 kts=95 miles gives CQD position 41° 45.8'N, 50° 14.5'W (41° 46'N, 50° 14' W)

Course 266° T from 5.45p.m. to 11.40 p.m.=5h 55m x 22 kts=130 miles gives CQD position 41° 45.8'N, 50° 14.3'W (41° 46'N, 50° 14' W)

Therefore, Titanic's CQD position was correct. The wreck site, located by Dr. Robert Ballard, is 099° True, distance 13 nautical miles, from her CQD position.

* Memorandum of Mr. Pitman

** 162 miles/7h21m=22.04 kts.

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