TITANIC: CHANGING THE REALITY

By Mark Chirnside and Sam Halpern (March 2008)

Note to the reader: This paper is written in such a way as to presume that the reader has a prior familiarity with both the *Olympic & Titanic: Maiden Voyage Mysteries* article by Chirnside and Halpern,[1] and the *Titanic: Changing Course* article by Brown.[2] However, wherever possible, any claim made in one of those papers is quoted directly and then addressed. It should be possible for the new reader to follow this paper's arguments without recourse to the previous papers. (In our footnotes, the notation AI are references to page numbers in the transcripts of the American Inquiry into the loss of the *Titanic*, while the notation BI are references to question numbers in the transcripts of the British Inquiry into the loss of the *Titanic*.)

PURPOSE

This short paper will address the recent article written by David G. Brown, *Titanic: Changing Course*, which has been published on the Great Lakes *Titanic* Society website. We will demonstrate that the conclusions within Mr. Brown's paper are unsupportable when all available evidence is considered.

The present authors feel very strongly that the accusations that are made in Mr. Brown's work against our own research need to be addressed in as public a manner as they were first made. The arguments we present are forceful, and should not be construed as a personal criticism. However, given that many of the accusations made in Mr. Brown's article are demonstrably untrue, it is important that they be addressed in a dispassionate, factual manner.

We will show:

- that the theory that *Titanic* altered course at 11.30 p.m. is nothing more than unsupported, unsubstantiated speculation, and
- the supposition that clocks used by the crew were set back by 24 minutes before the accident does not hold up when *all* available evidence is considered.

Furthermore, we are forced to address some of the many disturbing statements and accusations made by Mr. Brown in his article. We will show that Mr. Brown's work:

- states as fact several items that are nothing more than assumptions,
- has failed to take into account or dismissed evidence that is available, and
- has made a number of assumptions and puts forward disturbing accusations which have no basis in reality.

INTRODUCTION

In Mr. Brown's latest article, "*Titanic*: Changing Course," Mr. Brown attempts to make the case that modern historians have been misled by the British Board of Trade's inquiry into the loss of the steamship *Titanic*. Mr. Brown goes on to use two data points from the historical record, namely the two erroneous distress position coordinates sent out by wireless from *Titanic*, as proof that a change of course of 11° was made at 11:30 p.m., April 14th time. Furthermore, he goes on to explain why, in his opinion, the collision with an iceberg happened not at 11:40 p.m. as commonly believed, but 24 minutes later at 12:04 a.m. on clocks still keeping April 14th time. Mr. Brown also attempts to derive the location of where the collision took place based on his use of these two erroneous distress positions, the location of the *Titanic* wreck site, and assumptions he makes concerning how clocks were adjusted that night.

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[1] Mark Chirnside and Sam Halpern, "*Olympic & Titanic: Maiden Voyage Mysteries*," April 2007. http://www.encyclopedia-*Titanic*a.org/item/5540 (Accessed January 15th 2008.)

[2] David G. Brown, "*Titanic: Changing Course*," January 13th 2008. http://www.glts.org/articles/brown/changing_course.pdf (Accessed January 16th 2008)

But Mr. Brown's article does more than simply present a theory. He states in his article that it is not his intention to "embarrass" any modern authors of papers cited in his work, but to demonstrate how by not looking beyond the Wreck Commission report, they are "blinded" in their historical research. In particular, he states that the acceptance of only one set of distress coordinates by the Commission, those obtained by fourth officer Boxhall, has led to a failure of researchers to truly understand events leading up to the accident. These events include a late change of course heading, a failure to find the real location of the accident, and a failure to recognize the real time of the accident. He then goes on to provide the reader with a short tutorial in dead reckoning (DR) navigation, and presents a list of nine navigational items which he calls "navigationally significant," which he says "must" (with his emphasis on "must") be addressed if one is to produce an "historically and navigationally accurate reconstruction of *Titanic*'s accident." Furthermore, he goes on to assert that if even one "navigationally-significant fact" from his hand selected list is ignored because it doesn't fit a particular theory, then that constitutes "intellectual fraud."

We will first address these nine points and then go on to address other aspects of what he wrote.

MR. BROWN'S NINE "NAVIGATIONALLY SIGNIFICANT" POINTS

Mr. Brown has placed a great deal of emphasis on his nine points in his published work. Unfortunately, there are inaccuracies in some of these that are a matter of record.

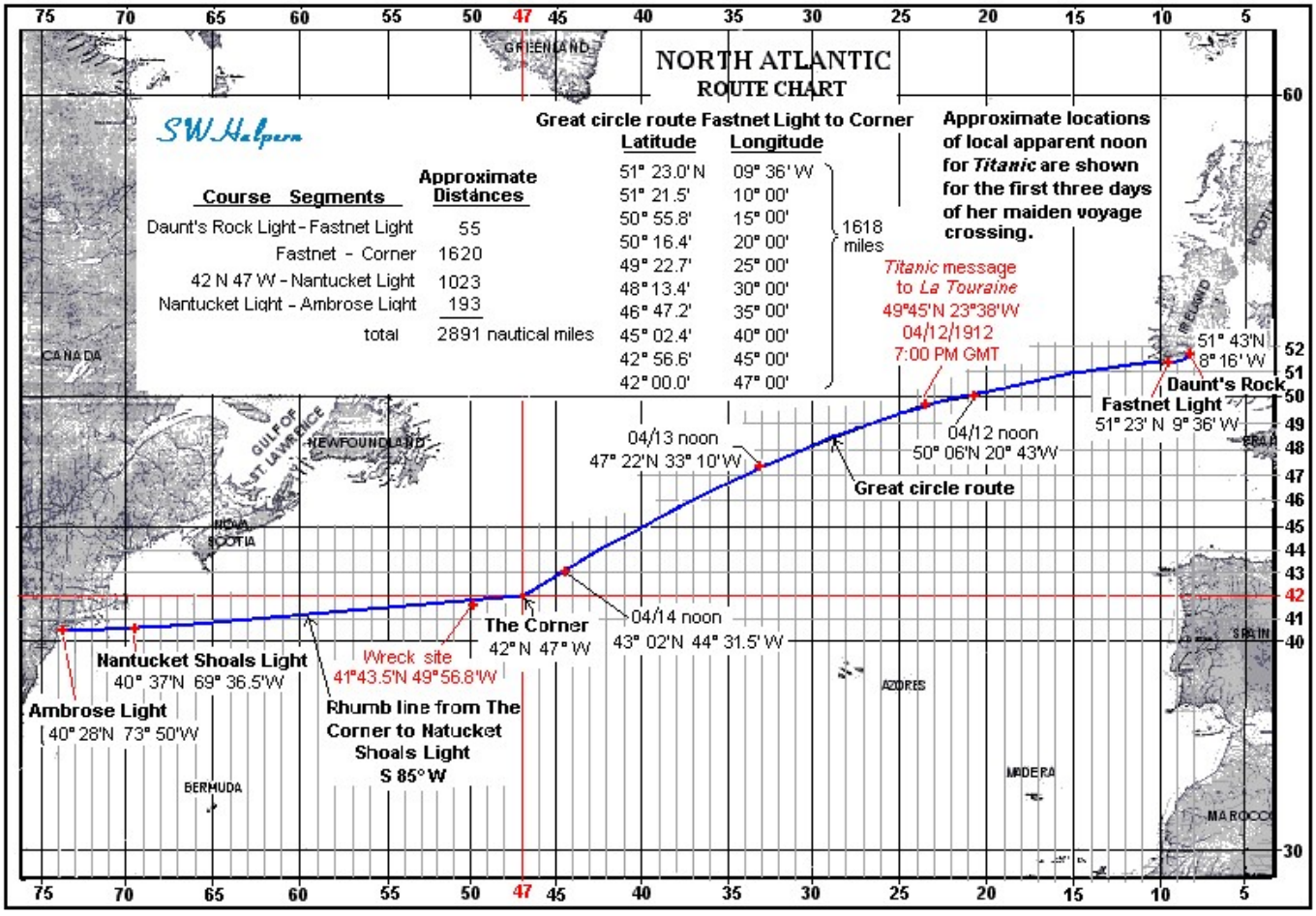
Mr. Brown's point No. 1 (The Corner; 42N,47W) claimed that there is "little doubt" that the ship's navigators assumed that *Titanic* made its turn "nearly perfectly" at the corner. It is hard to understand how Mr. Brown could know what was or was not assumed by the ship's navigators. In his article Mr. Brown said the ship "should have reached the corner between 5:42 and 5:48," but does not explain how he arrived at that. His use of the corner as a starting point for his dead reckoning work appears to violate dead reckoning navigation methods which say that Dead Reckoning (DR) is "determining the position of a vessel by adding to the last fix the ship's course and speed for a given time. The position so obtained is called a dead reckoning position."[3] On the open ocean a fix is obtained by way of celestial observations. **The corner point was *not* a fix, nor was a fix taken when they altered the ship's course at 5:50 p.m.** Yet Mr. Brown uses the corner point as if it were a fix, a starting point in his DR work, and later on he accuses other researchers of using "inaccurate navigational practices and data."

In his article Mr. Brown acknowledges that *Titanic*'s fourth officer Boxhall had claimed that the ship turned the corner late, noting that Boxhall never said how late. He then goes on to say that Boxhall had "chronologically misplaced" the time when the turn was made and therefore his statement should not be taken as entirely false. In other words, Mr. Brown appears to be implying that Boxhall really lied to cover up a late course change ordered by Captain Smith for 11:30 p.m., but somehow it was not a complete lie because he talked about a late turn. Mr. Brown makes no mention of third officer Pitman's claim before the British Inquiry that he, Pitman, thought that the ship should have been at the corner at 5 p.m., some 50 minutes before they altered course. If true, Pitman's statement implies a course change about 18 miles beyond the corner. Yet Mr. Brown claimed, without explanation or reference, that "there seems little doubt that the ship's navigators assumed *Titanic* made its turn nearly perfectly at The Corner." This claim is inconsistent with what two officers involved with *Titanic's* navigation actually stated.

Mr. Brown's point No. 2 (Proper Course) stated that the "proper course to New York from the corner" was 266° true. That is not an accurate statement. **The proper course for a ship headed from the corner**

[3] *The American Practical Navigator* (Bowditch), 2002, Bicentennial Edition.

to NY for that time of year was very close to a heading of 265° true (S 85° W) to make a point south of the Nantucket Shoals lightship.[4] This fact is not only in the historical record but can be verified by a simple navigational calculation knowing the coordinates of the corner and the coordinates for the Nantucket lightship in 1912.[5] When *Titanic's* course was altered at 5:50 p.m., it was altered by 24 degrees to N 71° W (289°)[6] on the steering compass to make close to 265° true.[7] The planned route of *Titanic* is shown on the chart below along with her approximate locations for local apparent noon on April 12, 13, and 14.



Furthermore, a significant point that Mr. Brown's work fails to recognize is that the course of 266° true was derived by Boxhall *after* he worked up the 7:30 celestial sights taken by Pitman and Lightoller, which Boxhall completed later that evening about 10 p.m.[8] Since the DR track lines that Mr. Brown came up with did not show any discontinuities, Mr. Brown concluded that a celestial fix was never used in working

[4] BI 15661 and BI15670; Also from the Wreck Commission Report on the Loss of the *Titanic*: "Before the *Titanic* disaster the accepted mail steamers outward track between January 15th and August 14th followed the arc of a great circle between the Fastnet Light and a point in latitude 42° N. and 47° W. (sometimes termed the "turning point"), and from thence by Rhumb Line so as to pass just south of the Nantucket Shoal light vessel, and from this point on to New York. This track, usually called the Outward Southern Track, was that followed by the *Titanic* on her journey."

[5] Samuel Halpern, *"Keeping Track of a Maiden Voyage,"* Irish Titanic Historical Society's *White Star Journal*, Vol. 14, No. 2, August 2006.

[6] BI 17587-17590.

[7] This can also be seen from the evidence of fifth officer Lowe who said the course from *Titanic's* noon position to the corner was S 60° 33.5' W or 240.6° true (see AI p.381). Adding 24 degrees gives a course of 284.6° true which is very close to Boxhall's S 84 ¾ W (364.75° true) when asked about the Rhumb line course that was marked on the chart (see BI 15670).

[8] BI 15317 and BI 15676-15680. Also BI 13498.

up the distress coordinates despite that Boxhall testified that it was at both inquiries.[9] Mr. Brown even expressed some doubt that the celestial sight data taken by Pitman and Lightoller earlier that evening was even resolved. **Mr. Brown's failure to report a discontinuity in the track lines is simply because the DR track lines he derived are not those that the *Titanic* followed.**

Mr. Brown's point No. 3 (Ship's Speed) was concerned with what speed should be used when working up ship positions. He states emphatically that 22 knots must be used "throughout" and cites Boxhall. He also states that it is "equally dishonest to change the ship's speed from the 22 knots of Boxhall's testimony without contrary proof acceptable within 1912 navigational procedures and practices." What those procedures and practices are he does not define. Mr. Brown seems to be saying that nobody can use any other speed but 22 knots when working up positions for *Titanic*. For the record, Boxhall said that he "allowed" 22 knots when he worked up his CQD position. It was not based on any reading of the taffrail log, nor was it based on his direct knowledge of engine revolutions at the time of the accident. Boxhall allowed for 22 knots in his calculation based on the revolutions carried before coming back on watch that evening.[10] The last time Boxhall was on watch was between 4 and 6 p.m. **If one is going to derive any data points used by Boxhall that are based on his CQD position, a speed of 22 knots should indeed be used. However, it is wrong to assume that other officers who worked on navigation also used 22 knots**. As Mr. Brown pointed out in his article, the other surviving officers assumed speeds less than 22 knots. For example, if one tries to estimate where the 8 p.m. DR position worked up by fifth officer Lowe was placed on the chart, then a speed derived by Lowe should be used, a speed that was considerably less than 22 knots.[11]

Mr. Brown's points No. 4, 5, and 6 are the coordinates for the Boxhall CQD, the Smith CQD, and the wreck site taken to the center of the boiler field, respectively.

Mr. Brown's point No. 7 (Physical Evidence) mentioned a southerly current drift exhibited by the pattern of the coal smear dumped from the bow section of the ship as it sank. This has nothing to do with a ship's position on the surface. Subsurface ocean currents can differ significantly in speed and direction from what is happening above. There is no evidence that substantiates Mr. Brown's claim that this is a "navigationally significant" point. Given that this is the case, it is not intellectual fraud to omit to mention it, for it is simply not relevant. **The suggestion that the coal smear on the bottom of the Atlantic is navigationally significant is not grounded in historical fact.**

Mr. Brown's point No. 8 (Flotsam) cites the coordinates of an Estimated Position (EP) for the wreckage seen Monday morning that Mr. Halpern derived in his article "Collision Point" posted on the GLTS website.[12] It seems rather strange to us that Mr. Brown would cite those specific coordinates rather than the Dead Reckoning (DR) position coordinates recorded by Capt. Lord of the *Californian* since Mr. Halpern's EP was worked off of Lord's DR position using a derived average surface current set and drift for the immediate wreck site vicinity; a current that Mr. Brown's work claims is "impossible" for that area.

Mr. Brown's point No. 9 (Wind) claims that the wind was WSW most of Sunday, then changing to a dead calm after sunset accompanied by a sharp drop in temperature, then becoming northerly about 4 a.m. on Monday. By including this in his 9 points, Mr. Brown is stating that the wind directions and times that he gives must be treated as navigationally significant. Why? Because Mr. Brown goes on to develop a theory

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[9] AI p.931, and BI 15639.
[10] BI 15646-15658.
[11] AI pp.384-386.
[12] Samuel Halpern, *"Collision Point,"* GLTS website, http://www.glts.org/articles/halpern/collision_point.html.

for weather conditions in the vicinity of the wreck. This is in an attempt to discredit the forensic approach taken by Mr. Halpern and Master Mariners Thomas Barnett and James De Coverly of the British Marine Accident Investigation Branch in determining the most likely location of where *Titanic* came to a final stop following the collision. Mr. Brown derived a collision point northwest of the wreck site. To get to the wreck site he needed a current set to the *southeast*. However, to explain why wreckage was seen 3 miles west of the now known wreck site longitude, he offers a weather scenario that includes the formation of a frontal boundary between a warm air-mass and cold air-mass in the region. Then he claims that the ship, heading westward, crossed into the frontal zone where southwest winds from the warm sector were opposing northeast winds from the cold sector to produce a "brief period of still air" described by survivors. Then, according to this theory, when the front passed to the east in the morning, a *northeast* wind came up which then blew the floating debris westward while the local current moved in southward.

In coming up with this scenario, Mr. Brown's work ignores the fact that the air temperature took a significant drop in a relatively short period of time late Sunday afternoon, April 14,[13] a sure sign that the ship passed across a frontal boundary between warmer and colder air well before evening. Mr. Brown's reference for claiming a WSW wind "for most of Sunday" was a very general statement put into the British Inquiry record by the Attorney General on day 2 (incorrectly identified as day 1 in his article) that "The weather was very fine all the way, the sea calm, and the wind west-south-west during the whole voyage." It should be pointed out that the evidence submitted by Attorney General Isaacs in that statement of case before the Wreck Commission was (using Isaacs' own words), "our information, that is to say, such information as I can act upon in opening the case to your Lordship, is founded at present upon very slight material."[14] Mr. Brown also quoted a statement by Major Peuchen, first class passenger and experienced yachtsman from Toronto, who said that he imagined the wind in the morning after daybreak was blowing from the north.[15] However, Mr. Brown may not have looked outside the inquiries where there is some evidence that the wind initially came out of the west when it first sprung up in the morning.[16] He did not seem aware of a number of statements in the inquiry records themselves which provide very specific weather related data for the region of interest that showed that a ship heading westward had to have passed through a cold front Sunday afternoon. Finally, he did not seem to have access to other sources that dealt with weather conditions in *Titanic*'s path.[17] Those other sources explain that *Titanic* entered a region of highly stable, high pressure air Sunday evening, several hours before the accident. It was not on the boundary of a frontal zone as theorized.

Let's take a closer look at the supposition that there was a wind out of the northeast strong enough to

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[13] From the section "Weather Conditions" (p. 29) in the Wreck Commission Report on the Loss of the *Titanic*: "There was, however, a drop in temperature of 10 deg. in slightly less than two hours, and by about 7.30 p.m. the temperature was 33 deg. F., and it eventually fell to 32 deg. F." See also BI 13589-13592.

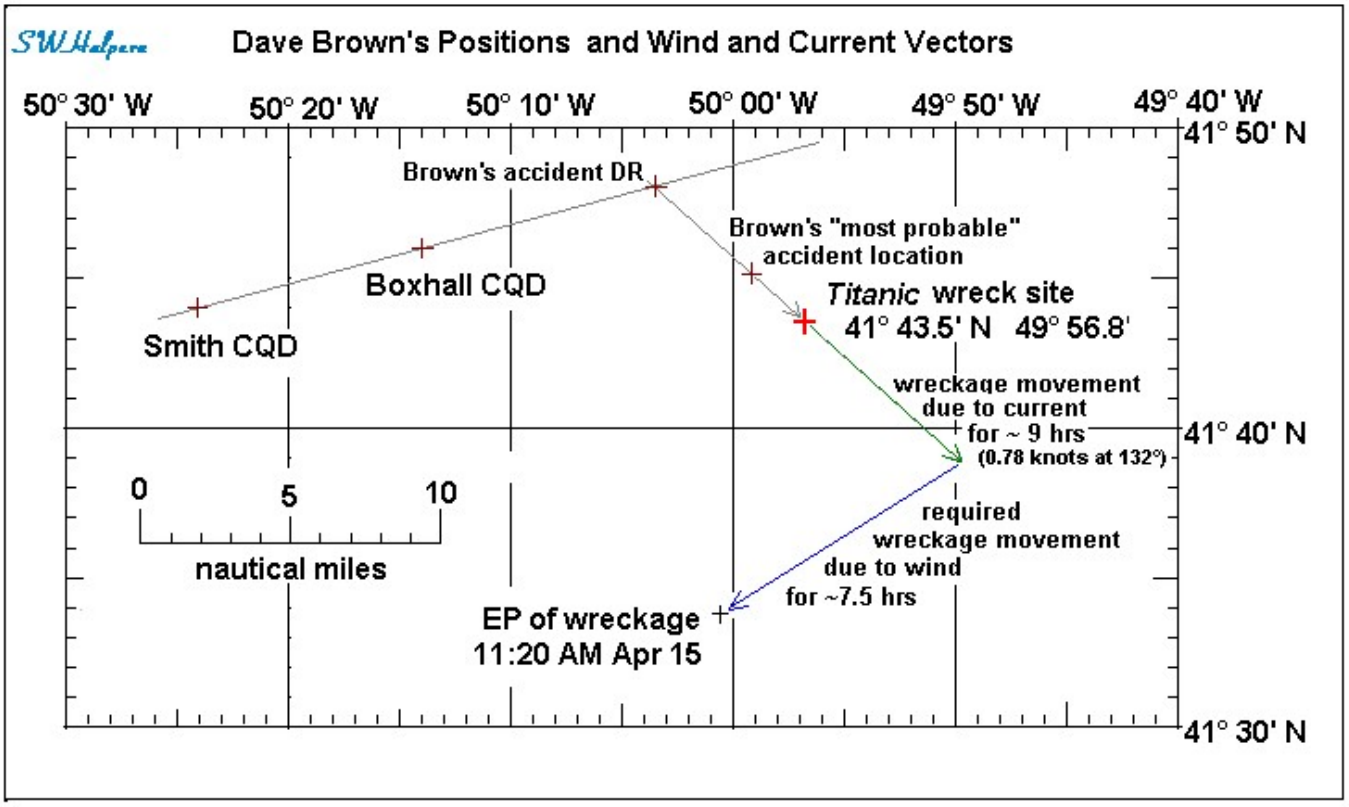
[14] BI Day 2, pp.10-11.

[15] AI p.348.

[16] Lawrence Beesley in lifeboat 13 had noted that the wind came up as "a faint breeze from the west" as the day was seen breaking on the eastern horizon shortly before sunup. See Lawrence Beesley, *The Loss of the SS Titanic*, Ch. V, Houghton Mifflin Co., 1912.

[17] Recorded wind directions and strengths for April 14, 1912 were documented in the log of the *Californian* and submitted in evidence (AI p. 720). This data clearly shows that any frontal passage for any ship heading westward near latitude 42°N on April 14 would have taken place well east of the longitude of the accident. The reason for the calm conditions later encountered that evening was a high pressure system that developed south of the Grand Banks producing very stable atmospheric conditions over quite a large area. Weather charts of the Atlantic have recently been produced from "The Weekly Weather Report" data of the Meteorological Office for the Year 1912 which formed Part I of the British Meteorological and Magnetic Year Book. These were published in an article co-authored by Gerry Murphy, a meteorologist with Met Eireann, the Irish Meteorological Service, in the ITHS *White Star Journal* in 2006. According to Murphy, as *Titanic* moved to the west of an eastward moving cold front on Sunday, the weather would have become colder and clearer with wind pushing down cold arctic air from the northwest. As the day wore on the pressure would be rising and the air becoming more stable, conditions which seem to match well with wind speed and direction data from the log of the *Californian*.

blow floating wreckage westerly across a strong southeasterly moving current. Mr. Brown derived an average current of 0.78 knots at 132° based on what he said was "using proper dead reckoning techniques." With this derived current he came up with his "most probable location of the accident," a position that lies at a distance of 2.4 miles to the northwest of the wreck site. In about 9 hours the drift of wreckage from the wreck site due to this current alone should have taken the wreckage 5 miles eastward and 5 miles southward of the wreck site location. Yet the wreckage was seen about 10 miles south and 3 miles *west* of the wreck site about 9 hours after *Titanic* sank. This picture situation is shown below.



For the wreckage to be seen 3 miles west of the wreck site longitude, the wind that sprung up around 4 a.m. would have to have been strong enough to move the wreckage, which included overturned collapsible lifeboat B seen amongst it,[18] eight miles west across the water in about 7.5 hours' time because Mr. Brown's current would have moved it 5 miles eastward. In addition, his wind also had to move the wreckage an additional 5 miles further southward than the current did in those same 7.5 hours from the time it sprung up. In other words, this wind had to be strong enough to move wreckage over the water at a speed well over one knot. Yet Mr. Brown never demonstrates how strong the wind would have to be in order to accomplish this feat. And if the wind was that strong to move floating wreckage that far, where are the telltale wakes in the water from the approaching lifeboats in any of the photographs taken from the *Carpathia* in the morning?

Major Peuchen, an excellent yachtsman who knew how to read the wind, and who Mr. Brown cited regarding the wind direction coming out of the north in the morning, also testified: "It might be that it [the wreckage] had floated away, probably a mile or half a mile; probably not more than that, considering that the wind only sprang up at daybreak."[19] And if that wind really came out of the northeast as Mr. Brown concludes, then the most that the wreckage could have been set to the southwest would be no more than

[18] BI 25477.
[19] AI p.347.

about a mile based on Major Peuchen's estimate. This is not the sort of picture that we see above.

Mr. Brown also mentioned a lifeboat that sailed to the *Carpathia* in his NE wind. The lifeboat with a sail up was No. 14 under the command of fifth officer Lowe with Collapsible D in tow. A photograph taken from the *Carpathia* shows boat 14 under port tack, on what appears to be a broad reach while presenting a small starboard angle-on-the-bow to *Carpathia*.[20] The picture is entirely consistent with the boat coming down from the northwest running parallel to the eastern edge of that vast field of pack ice to the west of the *Carpathia* that Capt. Rostron testified about.[21] It is also consistent with the wind coming directly out of the north at that time. From the look of the sea state (the lack of breaking on wavelet crests) and the height of the wavelets (½ to 1 feet as judged against the known dimensions of the lifeboats) seen in the various photos taken from the *Carpathia,* it appears that the strength of the wind was no more than 4 to 6 knots (force 2 on a Beaufort scale).[22] The photograph below shows a close up of boat 14 with collapsible D in tow after Lowe dropped his sail as it neared the *Carpathia*.

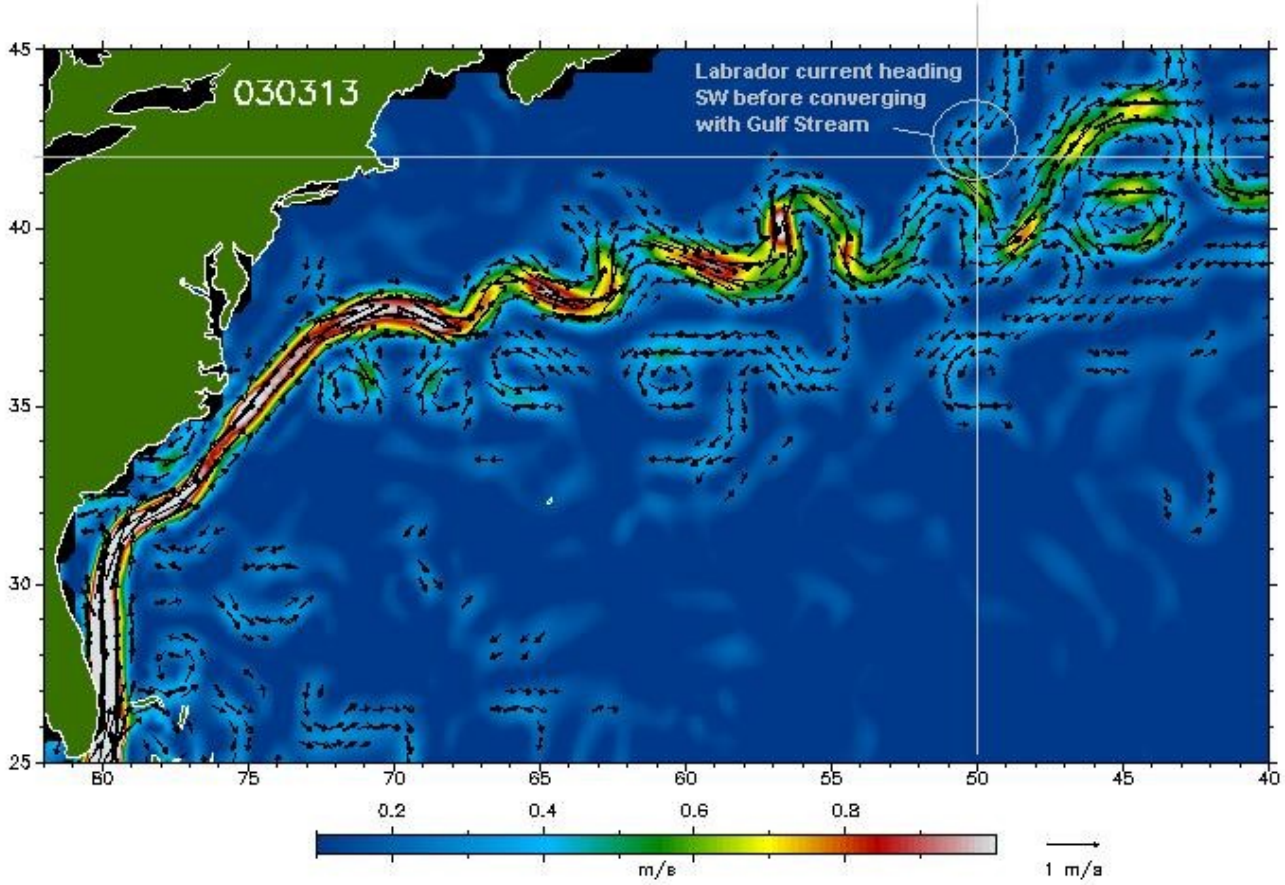
Mr. Brown's work attaches great significance to the wind direction that Monday morning and he makes it part of his nine-point "must explain" list that, if not addressed, constitutes intellectual fraud. Yet he offers no estimate on the strength necessary for such a wind to move wreckage the necessary distances involved. **The only reason the issue of wind shows up on Mr. Brown's "must explain" list is because he needs an explanation for wreckage to move westerly across the water without conceding that there may have been a westerly component to the local current in the region. Such a concession would not only invalidate his theory as to how the ship managed to reach the location of the wreck from his derived collision point, but also his theory as to the time of the collision itself.**

MR. BROWN AND HIS "IMPOSSIBLE CURRENT"

In his paper Mr. Brown said, "There are no west-setting currents known in the area where *Titanic* sank...The finding of a never previously or afterward observed westerly current for the area of the North Atlantic raises doubts about the veracity of the reports." Mr. Brown's work fails to mention information written in a Hydrographic Office memorandum placed into evidence at the American Inquiry on May 13, 1912 that said: "The Labrador Current, which brings both berg and field ice down past Newfoundland,

[20] Eaton & Haas, *Triumph & Tragedy*, 2nd Ed., p.187.
[21] BI 25501.
[22] http://www.wrh.noaa.gov/pqr/info/beaufort.php.

sweeps across the banks *in a generally south to southwest direction, flowing more westerly on its surface as it approaches the warm Gulf Stream water* [our emphasis]..."[23] From water temperature measurements submitted into evidence,[24] and from the existence of pack ice on the surface of the water extending down to latitude 41° 16' N,[25] we know that the Gulf Stream had moved well to the south of the accident region in April of 1912. Corroborating evidence for a southwesterly current flow in the region of interest comes from modern day satellite data that clearly shows what the Hydrographic Office report was talking about. Mr. Brown's "heretofore unseen westerly component in that part of the North Atlantic" can easily be seen in the attached satellite data image of North Atlantic currents taken March 03, 2003.[26] In April 1912, the Gulf Stream was a least a degree in latitude further south of what this satellite image shows. And this is but one example that proves the existence of a westerly component within the southward flowing Labrador current near the area of convergence.

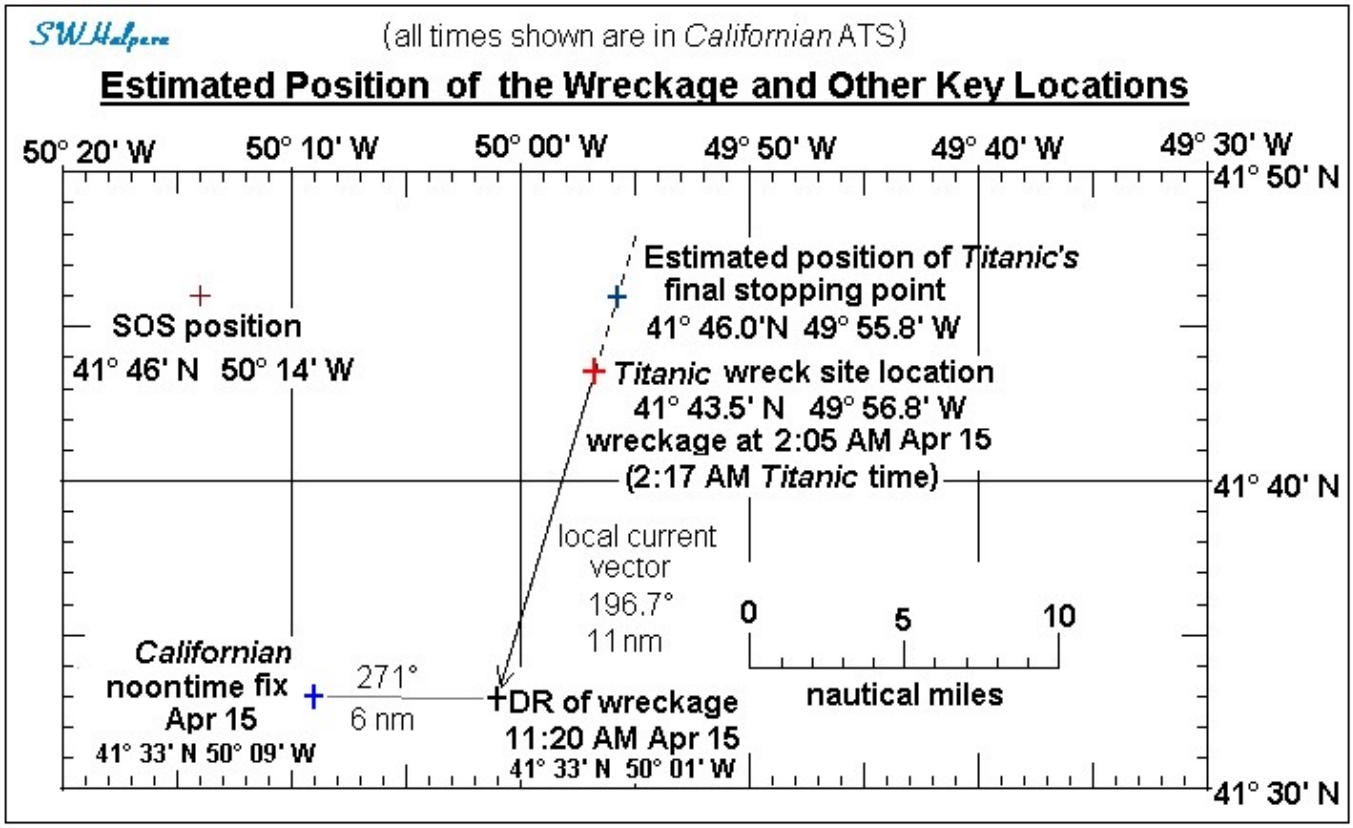


Mr. Brown called the method of analysis used by Mr. Halpern and the MAIB inspectors "most imaginative, but non-standard" for locating where the *Titanic* struck the iceberg. He said they used "a convoluted system that mathematically moved the wreckage north and east." He also said they really created "a running fix and not a dead reckoning position," and that neither bothered to "create a proper current triangle." The definition of a running fix is "a position determined by *crossing lines of position* [our emphasis] obtained at different times and advanced or retired to a common time."[27] A line of position

[23] AI p.1121.
[24] AI p.1142.
[25] From PV of Olympic: "4 a. m.: Following from *Carpathia*: Capt. Haddock, *Olympic*: South point pack ice 41.16 north. Don't attempt to go north until 49.30 west. Many bergs. large and small, amongst pack…" (Ref. AI p.1138.)
[26] See DEOS website, "Current Velocities of the Gulf Stream" at: http://rads.tudelft.nl/gulfstream/.
[27] *The American Practical Navigator* (Bowditch), 2002, Bicentennial Edition.

at sea is a line on a chart upon which your vessel must be located on. It is determined by celestial observation and measurement. Neither Mr. Halpern nor the MAIB inspectors established anything close to a running fix because there are no available lines of position to work from. We have no idea as to why Mr. Brown would make such a fallacious claim.

The approach that Mr. Halpern and the MAIB took in determining the local current in the vicinity of accident was an approach that involved using a DR position for the wreckage at 11:20 a.m. which was established by Capt. Lord by working back from a noontime fix taken about 51 minutes after leaving the area of the wreckage. By comparing the DR location for the wreckage with a fix for that very same wreckage (the wreck site location) for the time the *Titanic* foundered, the local current can be obtained. In essence, it was a DR course problem worked in reverse; i.e., letting time on a clock go backwards. The specifics of how this was done are fully explained in Mr. Halpern's article "Collision Point" on the GLTS website previously referred to. With the average local current derived, and using the time *Titanic* remained afloat after she came to a final stop, we are able to estimate the most likely stopping point for the *Titanic*. The picture of the situation with the key data involved is shown below.



But what did Mr. Brown say about the conclusions reached by Mr. Halpern and by the MAIB regarding the position of the *Titanic*? He states that:

1. both used improper methods for dead reckoning.
2. both authors ignored the full historical record regarding the ship's navigation, and
3. both confused the effects of wind hours after the ship sank with the currents applicable to *Titanic* while still afloat and steaming toward disaster.

Let's look at each of these one at a time.

Improper use of dead reckoning?

The method used by Mr. Halpern and by the MAIB inspectors was not an improper use of dead reckoning. **The method used was a legitimate forensic approach for estimating the local current in the vicinity of the accident that Monday morning based on information available in 1912, and information available since the discovery of the wreck in 1985.** It was a method that was independent of how *Titanic* was navigated. Independent of erroneous CQD locations. Independent of where *Titanic* might have been when she altered course at 5:50 p.m. Independent as to how fast *Titanic* may have been going over ground or through the water. Independent of how clock adjustments may have been carried out on board *Titanic*.

The only critical data needed was the DR location for the wreckage seen Monday morning, the location of the *Titanic* wreck, and the times involved using a common time reference. The average current set and drift obtained included the sum effect of the surface current and any small windage affects acting on the wreckage during the intervening period; windage that, at most, would have produced an overall error of less than a mile in any direction over 7.5 hours of time.

Ignoring the full historical record relating to navigation on Titanic?

The historical record relating to how *Titanic* was navigated, including the positions of both CQD locations, was considered. **The two CQD positions that Mr. Brown finds significant are erroneous positions resulting from errors made during the navigation process that night. The location of the *Titanic* wreck proves that beyond any doubt.** Although Mr. Brown appears to believe he has answers by using data such as the two CQD positions, he seems to blatantly ignore the historical record when it came to explaining how Boxhall's coordinates were derived. Instead, he puts forth his own unsupported theory of what Boxhall did.

Confusing the effects of wind hours after the ship sank?

There was no confusion on our part as to what caused the drift of the wreckage or the drift of the ship after the ship came to a stop on the night of April 14, 1912. From the details in the historical record, there is no evidence whatsoever of a strong wind coming out of the northeast sector as Mr. Brown needs in order for his theory to work. However, from the historical record of sea water temperatures taken in the region of the accident, as well as the existence of pack ice well to the south, there is strong evidence that the Labrador current dominated the region. From the historical record and modern satellite data, there is proof that the Labrador flows south to southwest before converging with the warmer Gulf Stream waters to its south.

More disturbing, however, is Mr. Brown's false statement that "the MAIB/Halpern reports…followed this precedent set by the Mersey report of giving credence only to *Titanic*'s second [CQD] position." Since neither Mr. Halpern nor the MAIB relied on either CQD coordinates, it hard to understand why Mr. Brown should make such an unfounded statement. **The use of those two erroneous CQD locations were *not* part of our work.** Furthermore, Mr. Brown states that we blinded ourselves from seeing the "navigational secrets hidden within the 1912 sworn testimony." The present authors will allow the reader to judge whether we have overlooked any "navigational secrets" to which Mr. Brown seems exclusively privy.

MR. BROWN'S DEAD RECKONING AND TIME

Mr. Brown's approach to unlocking the secrets of navigation was based on an assumption that the coordinates of the two CQD positions transmitted from the *Titanic* is a revealing piece of evidence regarding how the ship was really navigated that Sunday evening. He attaches great significance to the line that connects the two together, and that they lie 7.7 miles apart, which is the equivalent of steaming at 22 knots for 21 minutes. An observation he makes concerning the 1st CQD, referred to as the Smith CQD,

is that its longitude corresponds to the longitude that ship would have crossed at 47 minutes past midnight, assuming the accident did not happen, and assuming it was at the longitude of the corner (47° W) at 5:50 p.m. Mr. Brown also noticed that 47 minutes is the amount of time that the clocks were to go back that night as reported by QM Robert Hichens. That makes the longitude of the 1st CQD correspond to the meridian that would mark the beginning of April 15 on *Titanic*, when clocks adjusted for April 15th time would strike 12, or civil midnight as he likes to call it.

Because of this correspondence in longitude, Mr. Brown concludes that the 1st CQD position, located almost 20 nautical miles west of the wreck site, had to be the anticipated position of the ship marking the start of April 15. Furthermore, Mr. Brown believes that it was Boxhall who calculated that civil midnight position, and that it was Capt. Smith who handed that civil midnight position to Jack Phillips to send out in the first distress message. To explain why the coordinates worked out by Boxhall, called the Boxhall CQD, were also far off (about 13 miles) from the wreck site, Mr. Brown assumes that Capt. Smith told Boxhall that he already sent out a CQD for the ship using the ship's coordinates for midnight, and that all Boxhall needed to do was back those coordinates by 20 minutes of steaming at 22 knots on the reciprocal of the ship's course heading to get to the accident location for 11:40 p.m. The course heading Mr. Brown assumed was a line drawn across those two CQD positions running at 255° true.

The other thing that Mr. Brown did was to extend that 255° course line connecting the two CQD positions back to where it intersected a 266° course line taken from the corner. What he saw was a point where the ship would have been at 11:30 p.m., April 14 time, if it sailed from the corner at 5:50 p.m. at 22 knots along that line. From that observation he concludes that the ship's course had to be deliberately altered at 11:30 p.m., which was something that no surviving crew member ever talked about. The rationale presented for this alleged course change was to avoid some unspecified ice report.

But that is not all. To explain why things went so awry that night, Mr. Brown introduces another theory concerning time and the clocks. That theory says that clocks used by the crew were set back in two separate adjustments while those used in public places for the passengers were set back in only one adjustment each night. This supposition is not at all unreasonable since QM Hichens spoke of the clock going back 23 minutes in one watch and 24 minutes in the other watch so that an extra 47 minutes of time could be evenly split between the two watch sections. However, in Mr. Brown's theory, the first setback in the crew clocks had already been carried out at 10 p.m. Sunday evening. He then claims that the accident happened not at 11:40 p.m. on clocks set to April 14 time, but at 11:40 p.m. on the crew clocks that were put back by 24 minutes at 10 p.m. Therefore, he gets the time of the "real" accident at 4 minutes past 12 on unadjusted clocks still keeping April 14 time, which is 43 minutes before what he calls civil midnight. He then uses that time to find what he believes to be the "real" DR location of the accident.

With all of this, Mr. Brown's work indicates that he has absolutely convinced himself that he must be right about how those two CQDs came about, and that crew clocks were set back prior to the accident. If he is right about all of that, then everyone else must surely be wrong. Thus, the way Mr. Halpern and the MAIB calculated the most likely collision point must be incorrect. Therefore the ship's log reading taken by QM Rowe had to have underestimated the through-the-water distance traveled by the ship since noon. Therefore statements made by Boxhall about a late turn at the corner and using a star fix to calculate his CQD position had to be half truths. Therefore the statement in the article Chirnside and Halpern wrote [Maiden Voyage Mysteries] that said a collision time of 4 minutes after 12 on an April 14 clock cannot hold up under careful evaluation must, in his view, be disingenuous.

Mr. Brown believes that the use of two CQD coordinates, two erroneous positions no less, is the key to "unlocking the real accident location." He also believes that the intersection of the line joining them with a 266° course line from the corner is *proof* that Capt. Smith had ordered a late turn of 11° some 34

minutes prior to the accident to avoid ice, something that no surviving crew member even so much as hinted about. **Yet, for Mr. Brown's theory to hold, it requires him to:**

- **dismiss Boxhall's account of how he worked up his CQD position from the 7:30 p.m. celestial fix**
- **insist that there was a crew-clock setback that took place before the accident happened**
- **dismiss most passenger accounts for when the accident happened**
- **ignore evidence of what was seen on the bridge of the *Californian* that night**
- **and invent a weather pattern that simply did not exist, in a poor attempt to explain how flotsam was found 3 miles west of the wreck site longitude in the morning.**

Does Mr. Brown's theory conform to the available evidence, as well as simple reason? There are three areas of concern here. One has to do with navigation. Another has to do with time. And the third, which we find more disturbing, has to do with how he portrays the work done by other researchers and marine accident investigators; a portrayal that demonstrates a lack of understanding of what others knew and what they actually did.

NAVIGATIONAL CONCERNS

Our first concern with his theory with regard to navigation is why would the *Titanic* knowingly and deliberately be turned onto a course of 266° at the corner to begin with? If followed, such a course would take the ship 12 miles north of the Nantucket Shoals lightship toward shallow waters. Boxhall's explanation for why the ship was on a course of 266° true was that they were trying to get back to the course line that they were supposed to be on having altered course some number of miles to the SW of the corner.[28] As we pointed out before, the 266° true course heading was discovered *after* Boxhall worked up the star sights to check compass error. Of further concern to us is a 266° course line from the corner would bring the ship dangerously close to the position that field ice and icebergs were reported in the wireless message that Capt. Smith received from the *Baltic* early Sunday afternoon.[29]

Now Mr. Brown believes that the change in course at 11:30 p.m. would have been undoubtedly attributable to reported ice. However, this theory fails to answer an important question. Why would Captain Smith have taken the ship on a course of 266° true, then wait until 11:30 p.m. to make an 11 degree correction, when a 1 or 2 degree correction at 5.50 p.m. would have kept them well clear of that danger point to begin with? It makes little navigational sense to wait that long if the intent was to avoid ice. But Mr. Brown argues that two independent methods point to that same 11:30 p.m. turning point:

1. the intersection of the two course lines (the 266° line from the corner and his 255° line connecting the CQDs), and
2. a DR run over the 266° line from the corner at 22 knots for 5 hours 40 minutes.

He then points out that these produced locations that come within less than 2 ship lengths apart.

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[28] BI 15664 and BI 15671.
[29] BI 16176.

This is a fallacious argument. The crucial fact that is not apparent from Mr. Brown's work is that these two methods are *not* really independent. The dependent variable here is the time. **Any line you choose from the Smith CQD that crosses the 266° line from the corner at a relatively small angle, less than about 15°, will define a point on that line such that you will arrive at that point at the same time no matter if you start from the corner at 5:50 and travel forward, or start from the Smith CQD at 12:47 and travel backward.** The reason for this is that the sum of the distance from the corner to an intersection point plus the distance from that intersection point to the Smith CQD is about the same as going direct from the corner to the Smith CQD without taking any course change.
To prove this, suppose we deliberately move the location of the Boxhall CQD southward by just 5 ship lengths (or 4,250 feet). Let's leave the Smith CQD location alone. The new line between the two CQDs now runs at 260.5° instead of 255°, implying a ½ point (5.5°) course change from the 266° line instead of a 1 point (11°) course change. Now the intersection of this new course line with the 266° line from the corner is located at 41° 53' 15'' N, 49° 09' 50'' W, a result that we get by using the intersection method. The distance between this intersection point and the Smith CQD is 56.1 miles which is covered at 22 knots in 2 hours 33 minutes of time. If the Smith CQD is for 47 minutes past 12, then going back in time for those 2 hours 33 minutes on the reciprocal heading has us at this new intersection point at 10:14 p.m.

Now let's see what happens using the DR method. We start, as Mr. Brown did, at the corner at 5:50 p.m. heading 266° true at 22 knots. We continue on that course until precisely 10:14 p.m. What we find is that we reach the exact same coordinates, 41° 53' 15'' N, 49° 09' 50'' W, as we did when employing the intersection method. It can be clearly seen that the intersection method and the DR method are *not at all* independent of each other as Mr. Brown was led to believe. *One defines the other*.

The intersection of two lines on a chart does not prove anything. In reality there are an infinite number of ways to reach the Smith CQD location starting from the corner at 5:50 and steaming at 22 knots for 6 hours 57 minutes, the time to get to 47 minutes past 12 on an unadjusted clock. The simplest of all is to sail direct. You can just start from the corner at 5:50 p.m. on a course of precisely 264.0° true and travel those same 6 hours 57 minutes at precisely 22 knots. You will find that you are within one ship's length (less than 850 feet) of the Smith CQD location at precisely 47 minutes past 12 midnight. Same place, same time, same speed. *And you get there without having to make any course changes along the way.*

Our point is that the two methods give the same result for the time at the intersection simply because of the acuteness of the intersecting line angles. **The intersection of Mr. Brown's 266° line with his 255° line in no way proves that a course change happened at 11:30 p.m. or any other time. There is absolutely no evidence that *Titanic* was ever on a 255° course that would take her over the Boxhall CQD position to the Smith CQD position.** The two lines that Mr. Brown came up with do not constitute "evidence" as he has claimed in his work. As he wrote in his paper, "a course change is evident whenever navigators claimed they sailed one course line for a period of time early in a voyage, then those same officers on the same ship then say they sailed a second, different course later in the voyage." But no officer, or any other crew member, even so much as hinted that the ship was ever on a different course line from one they were on after altering course at 5:50 p.m. until the accident happened. **What Mr. Brown has here is unsupported speculation, and nothing more.**

The two CQD positions that were sent out by wireless were likely to have been derived independently of each other, but based off of some common data point such of the star fix taken earlier that evening by Lightoller and Pitman and worked up by Boxhall. They happen to fall on the chart where they happen to fall. That an extended line connecting these two locations crosses another line proves only that two lines cross at a single point. Mr. Brown uses pure speculation as to how Boxhall came up with his coordinates; speculation which is completely at variance with what Boxhall said he did when he worked up the ship's position. Mr. Brown offers no real proof of any course change, just speculation and dismissal of evidence.

As we said before, not only is a course change at 11:30 p.m. lacking in the available evidence, it simply doesn't make any navigational sense.

A second and larger concern regarding Mr. Brown's theory of navigation is the deliberate use of a location far from the alleged accident location by the ship's commander. If the real accident happened at 12:04 unadjusted time, as Mr. Brown claims, and the Smith CQD location was for 12:47 unadjusted time, that puts the two locations 43 minutes apart from each other. **Now why would Capt. Smith send potential rescue ships off to a position that was almost 16 nautical miles (43 minutes at 22 knots) from where the "real" accident supposedly took place?** In fact, any ship more or less between those two points would be sent in the wrong direction. As it was, Smith's CQD was sent out 10 minutes before Boxhall's CQD which could have meant a 20 minute round-trip delay in reaching the stricken *Titanic* by a rescue ship.[30] And was Capt. Smith so incompetent that he had to ask a junior officer to do some simple calculations that other ship commanders did on a daily basis? How hard would it have been for Capt. Smith, a Master Mariner himself, to back coordinates by the correct 43 minutes in the Brown timeline? He could have done it in his head. The quick and dirty way, if he was in a real hurry just to get ships moving his way, would be to take 22 knots of travel for three-quarters of an hour eastward from the civil midnight point. At the latitude they were in, every 3 miles east results in 4 minutes-of-arc to the east, something Smith would have known having traveled that route for years. So 22 knots multiplied by ¾ of an hour multiplied by 4 miles per 3 minutes-of-arc (22x3/4x4/3) results in a change of 22 minutes-of-arc to the east. This is exactly the same number as the ship's speed in knots. What could be easier than that? Like the example of Captain Rostron of the *Carpathia*, Capt. Smith was more than qualified to work up his own ship's position, without sending any potential rescue ships off on a wild goose chase 16 miles away from the collision point while someone was sent to look for a junior officer to work things out.[31]

We know from the official record that Boxhall was intimately involved in the ship's navigation throughout the voyage. According to Mr. Brown, it was Boxhall who would have worked up the anticipated civil midnight coordinates, some time well before the accident. Does it not stand to reason that Boxhall would have recognized that the coordinates that Capt. Smith sent out were the ship's anticipated civil midnight position which he himself had previously calculated? If Capt. Smith for some reason misunderstood the time and thought is was 20 minutes to civil midnight when the accident happened, would not Boxhall have recognized that backing the position by 20 minutes from civil midnight was the wrong thing to do, and 43 minutes would get him the right answer? Of course this is all nothing more than an interesting why-would-he type of argument since the way that Boxhall calculated his CQD position in no way comes close to Mr. Brown's imaginative account of how he did it. **This entire scenario is a creation of Mr. Brown's, and it has nothing to do with what Boxhall or anyone else said in the historical record.** Furthermore, it makes no navigational sense.

We believe there is a much simpler explanation for the positions of both the first CQD and the Boxhall CQD than the one conjured up by Mr. Brown. This explanation has nothing to do with civil midnight positions, late course changes, or clock setbacks that had not happened yet. (The explanation for the two CQD positions will be the topic of a separate paper dealing with that particular subject.)

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[30] The Smith CQD was sent out at 10:25 p.m. NY time while the Boxhall CQD was sent out at 10:35 p.m. NY time. (See Wreck Commission Report on the Loss of the *Titanic* p. 65). It should also be noted that the *Mount Temple* actually started out for that first location and then adjusted its course after receiving the Boxhall coordinates 10 minutes afterward. Luckily, she was coming up from the SW so the course changed needed for her was small. (See AI p. 760.)

[31] The coordinates that Smith would have obtained using this fast and simple way would be 41° 44'N, 50° 02'W, a point even closer to the wreck site than Boxhall's famous CQD position. If Smith somehow misunderstood the time of the accident and thought that the accident really happened at 20 minutes before civil midnight, he could have easily backed those coordinates by taking 22 knots, multiplying it by 1/3 hour and then multiplying by 4/3 (22x1/3x4/3) to get a change of 88/9, or roughly 10 minutes-of-arc eastward. In that case he would get 41° 44'N, 50° 14'W, two miles south of the Boxhall coordinates and again without having to send ships off to the wrong location.

TIME CONCERNS

Mr. Brown's theory on time would have far reaching consequences if it were correct. For instance, if the clocks keeping ship's time (Apparent Time Ship – or ATS), were not put back that night, as we know they were not,[32] then the time shown on the slave clocks in public places like the ship's smoking rooms and cafes should have indicated close to 5 minutes past twelve when the accident happened. But that is not what we find when we look at the available evidence. The following is just a sampling of statements from passengers that were up and awake in those very places at the time of the accident:

- Mr. William E. Carter: "I was talking to Major Butt, Clarence Moore and Harry Widener. It was just *seventeen minutes to 12 o'clock*. Although there was quite a jar, I thought the trouble was slight."

- Mr. Spencer Silverthorne: "At about 10:30 my friends retired and I went into the smoking cabin to continue a book which I was reading. At a table near where I sat a party of four were playing auction bridge. At *20 minutes of twelve* I sat reading when I felt a jar which shook me in my seat but which was not nearly as severe as one would suppose for the damage which was done. The vessel shook for a moment and we could feel her slackening speed. I jumped to my feet remarking to one of the players who had crossed with me on the *Olympic* when we had lost one of the blades from a propeller, that I guessed we had lost another propeller."

- Alfred Fernand Omont: "Then we went and played Bridge in the 'Café Parisien.' We played on until about *11.40 p.m.* and then there was a shock. I have crossed the Atlantic thirteen times, and the shock was not a great one, and I thought it was caused by a wave."

In addition to those mentioned above, there were several passengers who were up and awake and specifically mentioned that they had looked at their personal timepieces when the collision took place.

- Elmer Zebley Taylor: "It was *twenty-five minutes to twelve* when the jar came. I looked at my watch and noted the time."

- Jack Thayer: "I wound my watch--it was *11:45 P.M.*--and was just about to step into bed, when I seemed to sway slightly. I immediately realized that the ship had veered to port as though she had been gently pushed. If I had had a brimful glass of water in my hand not a drop would have been spilled, the shock was so slight."

- Eleanor Cassebeer: "I had already prepared for the night and was brushing my hair before the mirror when I felt a slight vibration, and then I heard a long howl, just as if the '*Titanic*' was crying in pain. My wrist-watch indicated *11:44*, and I am convinced that this is the exact hour of the collision, as purser McRoy [sic] himself, after dinner, had adjusted my watch to ship's time."

Mr. Brown chooses to ignore or dismiss accounts such as these, some of which appeared in testimony, some in affidavits, and some in personal letters written to family members.
In addition to passengers, members of the victualling staff also bore witness to the time of the collision. These people served the passengers. They did not keep watch the same as the deck or engine department personnel did. Their schedules revolved around the needs of the passengers. What did the majority of them happen to say? Here is a sampling:

[32] AI p. 294.

- James Widgery (2nd class bath steward): "I had charge of the bath on the forward deck…on the forward section of F deck…I went to bed about 10 o'clock. I went to bed right after inspection. I went to bed and was asleep when the accident happened…When I heard the noise, it woke me up. That was about *25 of 12*. I looked at the clock hanging on the bed."

- John Hart (3rd class steward): "Well, as near as I can. The vessel struck, I believe, at *11.40*. That would *be 20 minutes to 12*. It must have been three parts of an hour before the word was passed down to me to pass the women and children up to the boat deck."

- Walter Nichols (assistant saloon steward): "At *11:40* I was awakened by feeling a bit of a vibration. The ship went on for a bit; then the engines stopped. Nobody was frightened, and some of my roommates didn't want to trouble to get up and see what the trouble was, but I put on my coat and took a run out to look. It was very black outside, and I couldn't see anything except that there was some ice on the deck forward."

- Edward Wheelton (1st class steward): "I had just come off watch. I went to bed. I was awakened between *10 minutes to 12 and a quarter to 12* by a shock."

- Henry Etches (bedroom steward): "I was awakened by something, but I did not know what it was, and I called to my mate and I said 'What time is it that they are going to call us next?' It was then between *25 minutes and 20 minutes to 12*. He said, 'I don't know.' I turned over to go to sleep again."

For the most part, the majority of passengers placed the accident time between 11:35 and 11:45 p.m.[33] However, Mr. Brown could point to one particular passenger account, that of Archibald Gracie, where he said: "I was awakened in my stateroom at 12 o'clock. The time, 12 o'clock, was noted on my watch, which was on my dresser, which I looked at promptly when I got up. At the same time, almost instantly, I heard the blowing off of steam, and the ship's machinery seemed to stop." The most obvious flaw in Gracie's account is the almost instantaneous blowing off of steam. We know from numerous other accounts that this did not happen for some time after the collision. It makes no sense that steam would immediately start blowing off as the firemen had started to close the dampers moments before the collision, and in some cases they started drawing down fires soon afterward. It can also be shown that it would take several minutes before the safety values would pop off even if the fires weren't damped. Furthermore, in his book written in 1912,[34] Gracie himself wrote that the "correct ship's time would make it about 11.45." In that book he still talked about the steam blowing off immediately after he woke up and never admitted to the possibility that he may have slept through the accident itself.

We also noticed that Mr. Brown chose to list Gracie in two of his tables of times in his Appendix, one for the time of impact listed as midnight on Gracie's watch, and the other for the time of the ship's breakup listed as 2:22 on Gracie's stopped pocketwatch. He also lists the time of breakup noted on Jack Thayer's stopped pocketwatch as 2:22, which happened to be the same time that was on Gracie's stopped pocketwatch. However, Thayer's time of impact was not included in the time-of-impact list in the article's Appendix. Why not? As we see in the above statement written by Thayer, he was winding his watch at the time of impact and it was 11:45.[35]

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[33] Samuel Halpern, *"The Mystery of Time – Part 2,"* THS *Titanic Commutator*, Issue 180.
[34] Archibald Gracie, *The Truth About the Titanic*, Ch. II, Mitchell Kennerley, 1913.

[35] John 'Jack' Borland Thayer, *"The Sinking of the SS Titanic,"* 7 C's Press, Inc., Riverside, CT. (First Published 1940).

Mr. Brown cites a number of crew member statements about the time of the accident or the time they expected to be relieved. He noted that almost all crew members said they were expecting to be relieved at 12 o'clock, or were scheduled to go on duty at 12 o'clock. Crew members always spoke of their watch ending or beginning on-the-hour when 8 bells are struck, whether a clock went back or not anytime beforehand. For those below, they were expected on duty at "twelve o'clock" whenever that event was to occur. But since the watch on deck that particular night was going to serve 23 or 24 minutes extra, that extra time had to come by putting the crew clock back by 23 or 24 minutes some time before midnight thus extending the time of those on deck to 12:23 or 12:24 on an unadjusted clock. In other words, twelve o'clock was to come 23 or 24 minutes late.[36]

So far, this makes sense and there is no real problem.

But Mr. Brown also believes that the crew clocks went back as early as 10 p.m. Therefore, if the accident happened at 20 minutes to 12 on these crew clocks it must mean that it happened at 12:04 on an unadjusted clock in the passenger spaces. And he certainly would be right if the crew clocks went back at 10 p.m. However, what happens if the crew clocks were not put back at 10 p.m.? What if they were going to make the first of two clock adjustments just before midnight? If the accident happened at 11:40 p.m. unadjusted April 14 time it would show 11:40 p.m. on all clocks on board the ship: those used in the crew spaces and those used in all public spaces. There would be no ambiguity in time. Passengers and the victualling staff, stewards and stewardesses, would say the collision took place about 20 minutes to 12, as many of them did, and so would the deck department and engine department crew who may have looked at a clock in the crew's mess or down in the engine rooms because it would be 20 minutes to 12 on those clocks as well.

One member of the deck department crew who seemed to be very clear about the time of the accident was Boatswain's mate Albert Haines. He said that "the right time, without putting the clock back, was 20 minutes to 12." Most people reading that statement know full well what Haines was saying, namely that the clocks had not yet been put back at the time of the collision. Yet the creative explanation given in Mr. Brown's article is that Haines already knew that the crew clock went back 24 minutes at 10 p.m. and therefore, according to Mr. Brown's interpretation, he was referring only to the second adjustment of the crew clock, the one that had not yet taken place. Of course that is the only interpretation that can save the appearance of the early setback theory. But does this make sense to anyone else? Two days before Haines testified before Senator Smith and made that statement, QM Robert Hichens told the Senator that the clocks were supposed to go back that night a total of 47 minutes, 23 minutes in one watch and 24 minutes in the other watch. We believe Albert Haines was trying to give Senator Smith an unambiguous answer regarding the time of the accident. We contend that if an adjustment happened earlier, Haines would probably have said: "the time, without putting the clock back *a second time***,** was 20 minutes to 12."

Mr. Brown has also pointed to the statement of QM Hichens. Hichens said that he stayed at the wheel until 12:23. Mr. Brown uses this as some sort of proof that the change of watch was scheduled for 12:24 on an unadjusted clock, Hichens being relieved just 1 minute before. Mr. Brown also claims that this is proof that passenger clocks were not retarded that night. Yet Hichens, who was at the wheel when the accident happened, also said that the collision came at "11:40 p.m." That's 43 minutes before being relieved, not 20. His story that the collision came at 11:40 and he stayed at the wheel until 12:23 was repeated in both inquiries at two separate times.[37] Of course, Mr. Brown could say that Hichens gave the time of the collision off the crew clock that was previously set back, but the time his relief came was taken off an unadjusted clock keeping ship's time, noting that there were two clocks in the wheelhouse.

[36] Just like 2 a.m. comes an hour late on the day when clocks are put back to 1 a.m. standard time at 2 a.m. daylight-savings or summer time.

[37] AI pp. 450-451, and BI 947 and BI 1017.

Now just why would Hichens do that? Hichens, who also said that he was at the wheel for "one hour and forty minutes" when the collision occurred, told Senator Smith at American Inquiry that: "I stayed to the wheel, then, sir, until 23 minutes past 12. I do not know whether they put the clock back or not. The clock was to go back that night 47 minutes, 23 minutes in one watch and 24 in the other." What clock was he talking about here? Since he refers to "the clock" going back twice, it seems most likely he was referring to the clock keeping time for those on watch. Hichens was also asked, "Had the clock been set back up to the time you left the wheel?" his response was, "I do not know, sir. I did not notice."[38] If the clock had been put back as early as 10 p.m., as Mr. Brown suggests, Hichens certainly would have noticed because the two clocks in the wheelhouse would differ. More importantly, as standby quartermaster before 10 p.m., it was his job to strike ship's bells as well as informing the oncoming senior officer (William Murdoch) when it was 15 minutes before he was due on deck, all of which he said he did.

Mr. Brown said he believes the first clock setback occurred at 10 p.m. to put 24 minutes extra time into second officer Lightoller's watch. Yet Lightoller was very clear in the historical record that he expected fourth officer Boxhall to stay on for "more than two hours" after he was relieved because of the clocks going back.[39] We also know from lookout Frederick Fleet, who first came on watch at 10 p.m., the same time that Hichens took over the wheel from QM Olliver, that he and Lee expected to get an extra 20 minutes or so up in the nest that night.[40] All this points to a clock set back that was to take place *after* Lightoller was relieved by Murdoch, not before.

Another crew member that Mr. Brown likes to point to is QM George Rowe. As stated, Rowe looked at the time on his pocketwatch when the accident happened and noted it was "20 minutes to 12." Mr. Brown than talks about Rowe seeing a boat in the water at 12:25, and that his relief, QM Bright, went on duty at the appointed midnight hour. From this he says it is obvious that Rowe's timepiece was setback earlier by 24 minutes to crew time. Yet when we look at the available evidence a few things become clear. The only reference Rowe made to looking at his watch was the time the ship struck. Rowe never speaks about QM Bright coming to relieve him, but we know he eventually did. Rowe never mentions that Bright helped carry detonators to the bridge, something else we know he did. Bright said he slept through the accident and was awakened by his mate, QM Walter Wynn, who told him that the ship had collided *and* that "the ship was going down by the head." He then got himself dressed and "went out to the after end of the ship to relieve the man *I should have relieved* [our emphasis] at 12 o'clock, a man by the name of Rowe."

It is quite clear from Bright's statement that he got to the poop deck late, not at the appointed hour. Why? Because he did not wake up for quite some time after the collision, even after all hands had been called to uncover the boats. We know that his mate, QM Walter Wynn, had been working to uncover and swing out lifeboats for some time before he came back down to his quarters to get a knife and a kit bag.[41] The fact that Bright was told that the ship was down at the head shows that it must have been well past the time he was to have turned out, which was usually 15 minutes before he was due on deck.

Did George Rowe set his watch back some time after coming out on watch on the poop? Mr. Brown believes he did because Rowe gave the time he saw a boat in the water around 12:25 when he testified in 1912. The accepted time for the first boat in the water was around 12:45 unadjusted time that night. However, if the crew clocks were to go back by half the total setback time just before midnight (when clocks in passenger spaces were scheduled to go back), and Rowe set his own watch back at that time (20 minutes after the accident happened) because that is when he expected the clocks to go back, then his

[38] AI p. 451.
[39] AI p. 438.
[40] AI p. 317.
[41] BI 13395.

sighting of a boat in the water about 12:25 on his timepiece makes perfect sense. The difference here is that Mr. Brown believes Rowe set his watch back around 10 p.m. because that is what his scenario calls for. If Rowe did indeed set his watch back, we believe he did that just before midnight.[42]

In a letter he wrote to Ed Kamuda of the *Titanic* Historical Society in 1963, George Rowe talked not only about the collision happening at 11:40 p.m., but specifically said, "My watch should have ended at 12:22 but time went by and no relief turned up." That certainly fits with Bright's 1912 account of not showing up on time, and with what Hichens said about staying at the wheel until 12:23. In this case, both Rowe and Hichens are saying the same thing; the collision happened at 11:40 p.m. and the change of watch was expected a little over 40 minutes later, not 20 minutes later. In this case, both were referring to time in unadjusted April 14 hours.

The key point that we are making here is that if the crew clocks had actually gone back before the accident took place, we should find for the most part a dichotomy of answers from witnesses for the time of the accident. One from most of the deck and engine crew (firemen and trimmers) saying the accident happened around 11:40, and the other from most of the passengers and stewards saying the accident happened a little past midnight. This is not the case. Based on a consideration of all the evidence, it becomes quite clear that the first of two clock adjustments was to come a little before midnight, but the accident precluded that from happening. In fact, the accident totally negated the need for any clock adjustments since the ship was obviously not going to reach her Monday noontime longitude.

Before we leave the subject of time, we should ask if there is any other evidence that the clocks on *Titanic* had not been put back yet that night? We believe the answer is yes, and comes from external evidence, from the bridge of the *Californian*.

Time on the *Californian* was about 12 minutes behind time on the *Titanic* based on their respective noontime longitudes.[43] Somewhere around 11 p.m. the mast light of a steamer was seen to come up from the east. At about 11:30 p.m. *Californian*'s third officer, Charles Groves, went below to talk to Capt. Lord about the approaching steamer seen by then coming up from abaft their starboard beam as the stopped *Californian* was pointing toward the NE at that time. Groves was ordered to try and contact the steamer by Morse lamp, which he did, and noticed that she appeared to be completely stopped at 11:40 p.m. *Californian* time when 1 bell was struck to inform the oncoming watch that they were expected topside in 20 minutes. This is the same steamer that the apprentice James Gibson, looking through glasses, later saw a flash fired from the steamer's deck and then watched as a shell rose above the steamer and burst into white stars.[44] This is the same steamer whose lights disappeared from view at 2:05 a.m. *Californian* time as noted by the wheelhouse clock. Since the discovery of the *Titanic* wreck, there is no longer any doubt that the rockets seen from the *Californian* were those that came from *Titanic*. Seeing the flash of a detonator from a socket signal from the upper bridge of the *Californian* proves that the bridge of *Titanic* was above the visible horizon as seen from the *Californian*. As it turns out, 2:05 a.m. on the *Californian* was 2:17 a.m. unadjusted time on *Titanic*, about 3 minutes before the stern section went under, and about the time that all the lights suddenly went out on *Titanic*. And, most important to this discussion, 11:40 p.m. on the *Californian* was 11:52 p.m. unadjusted time on the *Titanic*, the time that Groves noted that the steamer was stopped to their southeast. According to Mr. Brown's timeline, the *Titanic* should still have been steaming at 22 knots and a good 12 minutes away from striking an iceberg.

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[42] It should be mentioned that in 1963 Rowe denied that his watch had been set back at all.
[43] Samuel Halpern, *"The Mystery of Time – Part 2,"* THS *Titanic Commutator*, Issue 180.
[44] Apprentice James Gibson, Report to Capt. Lord, April 18, 1912 (while at sea).

The key point that we are making here is that there is external visual evidence that *Titanic* was stopped well before 12:00 in unadjusted hours.

The present authors continue to affirm our previous statements. After looking at and considering *all* the available evidence – navigational, testimonial and observational – the time of the accident was between 15 and 20 minutes to twelve in unadjusted April 14 hours.

DISTORTIONS AND MISSTATEMENTS

Mr. Brown wrote that "two modern reports which focus on the navigation of *Titanic* have been chosen as illustrations of the far-reaching influence of distortions and misstatements in the Mersey report." The two reports he was referring to was the 1992 MAIB report and the 2007 article by Mr. Halpern, "Collision Point," which Mr. Brown referred to as a "finely-crafted apologia for the seriously flawed original report by the MAIB." These accusations have no basis in reality.

In what respect has either the work of the MAIB or Mr. Halpern been influenced by these so called "distortions" and "misstatements" of the Mersey report? What distortions? What misstatements? In Mr. Halpern's work there was not even a single mention of the Mersey Commission report. That work was entirely independent of anything written in the Mersey report. If there are any distortions, they are made by Mr. Brown.

It is also worth commenting upon the accusation made in Mr. Brown's article that "Mersey's findings [i.e. the final report] have also provided the working assumptions which underlie nearly all research into the sinking. During the intervening century *a majority of historians have preferred creating explanations of the Mersey document rather than doing primary source research into what took place*. [authors' *emphasis*]" Unfortunately, no reference is provided for this bold criticism.

It is not possible to know whether "a majority of historians" have avoided researching primary source material unless they have been surveyed and responded in that manner. Given that no such documentation is provided in his article, it is not possible to establish the factual basis for this statement. Historical research relies on primary source documentation and, given the extensive material that surrounds the *Titanic* disaster, it would be extraordinary if any serious historian or researcher had confined themselves to using the Mersey report in isolation rather than consulting the other extant material. It would be even more improbable if a majority had avoided doing that. Mr. Brown's bold statement is presented as fact, but no documentation or evidence is presented to support it.

Further evidence of distortions and misstatements by Mr. Brown concerns the work that the present authors did in our paper, "*Olympic* & *Titanic*: Maiden Voyage Mysteries," the main focus of which was on *Olympic's* maiden voyage speeds and times. There were two areas that he was critical of, one had to do with navigation methods and time, and the other had to do with speed.

Mr. Brown said that the first problem with our paper was our "use of inaccurate navigational practices and data." He then cited our use of the wreckage to determine local current drift for the region in deriving the accident location, and then he said it was our "lack of understanding of timekeeping in *Titanic*" that led us to create a dead reckoning speed in excess of 22 knots, and an incorrect speed-made-good (SMG) of 22.11 knots.

Mr. Brown also claimed that we justified speeds above 22 knots for the period after the ship turned the corner on the basis of several passenger reports regarding higher engine vibrations. He also said that our strongest proof was the taffrail log reading report of QM Hichens that the ship ran 45 miles in a two hour

period between 8 and 10 p.m., and that we made a "temprocentric mistake" of thinking that the taffrail log in 1912 provided the same sort of instantaneous accurate data as modern day GPS navigation.

We already addressed how we determined the most probable collision location, which was entirely independent of how *Titanic* was navigated and all the assumptions that would have to go along with that. We used a legitimate forensic approach that took a fairly reliable DR estimate for the location of floating wreckage seen Monday morning, and the now known location of the wreck site. That basic approach was also the one taken by professional marine accident investigators of the British MAIB. We believe we are in good company with regard to that aspect.

In his article Mr. Brown wrote: "the authors [of *Maiden Voyage Mysteries*] were undoubtedly correct in saying that prior to this paper [*Titanic: Changing Course*] no serious attempt had been made to unravel the time confusion. However, they are quite wrong in saying it cannot be done." The fundamental problem with Mr. Brown's comment is that we did *not* say it could not be done; we merely stated that it was beyond the scope of the article in question, which was primarily focused on examining the time *Olympic* took to complete her maiden voyage in 1911. Mr. Brown's statement completely distorted what we had said, and his work presented a "strawman" or fallacious argument. Mr. Brown also said that the evidence necessary to unraveling the time confusion is contained within the navigational evidence of the two CQD coordinates and the testimony of fourth officer Boxhall, "none of which was properly and fully examined by the two *Mysteries* authors." Given that he was not privy to our private discussions and research, Mr. Brown's comment that we did not "properly and fully" examine such evidence is not only speculative on his part, but it is simply false.

As far as the present authors' alleged lack of understanding regarding timekeeping onboard *Titanic* is concerned, Mr. Brown appears to be unaware of the paper by Mr. Halpern in the THS *Titanic* Commutator, "The Mystery of Time – Part 1," first published in late 2007.[45] In that paper the issue of timekeeping and how clocks may have been adjusted for those keeping watch schedules was laid out for both eastbound and westbound voyages. In that article, Mr. Halpern did not dismiss critical evidence such as presented by second officer Lightoller concerning the time that fourth officer Boxhall was to remain on watch following Lightoller's relief. The concept of what Mr. Brown calls the two-setback system had been an ongoing subject of private discussions between Mr. Brown and Mr. Halpern for several years. From evidence provided by QM Robert Hichens and others, we know that two clock adjustments were to be carried out at night during the westbound voyage. The practice of using a wheelhouse clock to control watchkeeping schedules separately from other ship's clocks was brought up some time ago by Capt. Charles Weeks of the Maine Maritime Academy. The fundamental difference between Mr. Brown and Mr. Halpern regarding time changes has to do with when those clock adjustments were carried out. In Mr. Brown's scheme, *three* clock adjustments were required; at 10:00 p.m., 12:00 a.m., and 12:24 a.m. in unadjusted hours. In Mr. Halpern's proposed scheme only two clock adjustments would have taken place.[46]

As far as the ship's speed is concerned, there were three methods used to determine the speed of the ship. One was the use of astronomical observations to see how far the ship ran over ground in a given period of time. Another was based on the number of revolutions of the ship's propellers which required them to refer to a slip table to get an estimate for the ship's speed-made-good heading eastward or westward - a slip table that they were still working on during *Titanic's* maiden voyage.[47] And the third method was based on readings taken from the taffrail log every two hours to get an estimate of the speed through the

[45] Samuel Halpern, *"The Mystery of Time – Part 1,"* THS *Titanic Commutator*, Issue 178.
[46] Additional information concerning the Mr. Halpern's scheme can be found at: http://www.geocities.com/samuel_halpern/WatchSchedules.html.

[47] AI p. 373.

water.[48] Changes in speed over a couple of hours' time were always being checked. As fifth officer Lowe put it, "We ring him [the engineer] up, and we see how she is doing with the revolutions, whether she is going faster or going slower; and you will find a corresponding difference in the log." For dead reckoning navigation work, an estimate of speed over ground, not speed through the water, appears to have been used by officers like Boxhall and Lowe as they explained in their various testimonies.

Mr. Brown said that "the *Mysteries* authors have really made the temprocentric mistake of thinking that the taffrail log in 1912 provided the same sort of instantaneously accurate data as the modern and highly accurate Global Positioning System (GPS) or even an automobile's speedometer." That claim is entirely false. At no point did we state that the taffrail log was instantaneously accurate, or even as accurate as a car's speedometer. Indeed, over seven years ago, Chirnside pointed out that a variation in the log of a couple of percent was entirely plausible, and described the log as a 'rough indicator' of the ship's speed.[49]

Mr. Brown also wrote that "While Hichens may have made the 10 p.m. reading, he almost certainly had no hand in the 8 p.m. reading. That would have been done by the off-going Port Watch quartermaster sometime prior to 8 p.m. so that it could be recorded neat and tidy for the change of watch." He then goes on to write, "So, the exact duration between log readings is not known. We have only Hichens' claim of reading the log within 30 seconds of 10 p.m. and know nothing of the o'clock time of the previous reading." Given that Mr. Brown has gone to pains to point out that the log might have a slight inaccuracy either way, it does seem rather odd to make such remarks about the time difference. As fifth officer Lowe pointed out, "We have the log every two hours, and we are all the time navigating. We do not take observations once a day. We perhaps take 25 or 30 observations a day."

For all of Mr. Brown's speculation as to exactly when the log had been taken before, the entire point of taking the log was to determine the number of miles covered during the preceding two-hour period. As Hichens' pointed out, "I took the log which was part of my duty at half a minute to ten, as near as I can tell." The procedure was to take the log as close as possible every two hours on the hour. It was not a haphazard event for Hichens to call up the quartermaster on the afterbridge to get the log reading ½ a minute before the hour. It was his duty to do so. And for a very good reason. If the reading was not taken at the same, regular interval, then it would not be too easy to use the log as a means of gauging any changes in the ship's speed throughout the voyage.

As far as our references to the taffrail readings of Rowe and Hichens in our paper, "Maiden Voyage Mysteries," we pointed to those taffrail readings as *supporting* evidence that the ship had not slowed down Sunday afternoon but had actually speeded up. We used Rowe's reading to show that it was consistent with a calculated speed-made-good of 22.11 knots based on the distance ran between noon Sunday and the derived stopping point for the ship that night. The log indicated a slightly greater speed through the water, as one would expect for a westbound ship. Hichens' reading was supporting a slight increase in speed that took place later that night. Even if his 45 miles was a rounded number, you still get a range in speeds from 22.25 to 22.70 knots for a two-hour average. Neither reading was presented as direct evidence, and it was not our purpose to do so. However, we should point out that the taffrail log readings may not have been as inaccurate as Mr. Brown's work would apparently have readers believe.

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[48] *Titanic* used a Walker's Neptune log as identified by QM Rowe, which was the model designed for speeds of more than 18 knots, not the Cherub model incorrectly referred to by QM Hichens. Once set up properly including the right amount of line streamed aft, these logs were quite accurate. They were only used in deep waters. However, their readings needed to be cross checked with such things as the revolutions carried to determine if errors were creeping in especially after prolonged usage. Being on her maiden voyage, the taffrail log on *Titanic* was quite new.

[49] Mark Chirnside. *The 'Olympic' Class Ships: Olympic, Titanic & Britannic*. Tempus Publishing; 2004. Page 332. The appendix in question was written as early as 2001 and the manuscript itself delivered to the publisher in January 2003, although it was not published until 2004.

Documented evidence of increased boiler pressure that Sunday night, from 215 to 225 lbs/sq.-in., points to an increase of a little over 2% in engine revolutions carried. In turn, that points to a comparable increase in the ship's speed through the water by that amount after additional double-ended boilers were connected up at 7 p.m. that evening. Taking an average between 75 and 76 rpm from 12 noon until 7 p.m. (corresponding to 22.1 knots),[50] and then allowing for an increase to an average between 77 and 78 rpm (corresponding to 22.6 knots)[51] from 7 p.m. until the collision at 11:40 p.m., we calculate a weighted average of 22.3 knots *through the water* from noon to the time of the collision. This happens to be in excellent agreement with the log data taken independently by QM George Rowe at the time the accident happened.

The available evidence – direct and indirect – indicates that *Titanic*'s speed was gradually increasing throughout the voyage and again on Sunday night. Mr. Brown's claim that "it is most likely that the perception of increased vibration…was the result of the disappearance of other motions and noises as the water became calmer," is hard to credit. Henry Stengel, who was familiar with steam engines used in the manufacturing business, stated that he could hear "the engines running fast" when he retired that Sunday evening. Mahala Douglas and her husband noted a faster vibration of the ship's engines than ever before when they used the after grand staircase to return to their stateroom. The staircase was next to the reciprocating engine room casing, an ideal location from which to take the pulse of the ship.[52]

The evidence is considerable that the revolutions were indeed increased Sunday evening and, therefore, the ship's speed through the water. This evidence includes: additional boilers – first lit on Sunday morning – being connected to the engines at 7 p.m.; increased steam pressure in the boilers; evidence of increased vibration from a number of passengers; and an increased measured speed through the water. This evidence has been documented in an extensive fashion, and for reasons of space will not be repeated here.[53] Mr. Brown's attempt to discredit the use of the taffrail log or the evidence offered by several passengers is an easy way to open the way to speculation to support otherwise unjustifiable conclusions.

SUMMARY AND CONCLUSIONS

In his summary Mr. Brown claimed that by using standard dead reckoning techniques and navigational data supplied by Captain Smith and Fourth Officer Joseph G. Boxhall [i.e., the two CQD positions] he was able to establish that *Titanic* altered course by 11 degrees at 11.30 p.m., and the time of the accident was at 12:04 a.m. in April 14th hours, some 24 minutes later than has been accepted by historians.

Neither of those two major claims can be substantiated when *all* the evidence is taken into consideration.

- The theory that *Titanic* altered course at 11.30 p.m. is nothing more than unsupported, unsubstantiated speculation. There is absolutely no evidence presented that *Titanic* was turned to a

[50] Samuel Halpern, *"Speed and Revolutions,"* Encyclopedia Titanica Research Paper, http://www.encyclopedia-titanica.org/item/5661/.
[51] Ibid.
[52] Documented observations of passengers who gave accounts of increased vibration and speed included: Mr. Lawrence Beesley, Mr. C. E. Henry Stengel, Mrs. Mahala D. Douglas and Mr. George Rheims.
[53] For further information, see the following references:
1) George Behe, *Titanic: Safety, Speed & Sacrifice*, Transportation Trails, 1997.
2) Mark Chirnside, *The 'Olympic' Class Ships: Olympic, Titanic & Britannic*, Tempus Publishing, 2004.
3) Mark Chirnside, and Sam Halpern, "*Speed and More Speed*," (Due to be published shortly in the *Titanic* Historical Society's prestigious *Titanic Commutator* journal.)
4) J. Kent Layton, "*The Arrival That Never Took Place*," September 6, 2005, http://www.atlanticliners.com/Images/Other%20Images/PDF/Article%20The%20Arrival%20That%20Never%20Took%20Place.pdf (Accessed January 16th 2008.)
5) Don Lynch, *Titanic: An Illustrated History*, Madison Press, 1992.

heading that would have taken her over those two erroneous CQD locations. The claim that the 11:30 p.m. turning point location was obtained using two independent methods was shown to be incorrect. The two methods had to produce the same result as long as the acute angle between the two intersecting lines is relatively small. The intersection of two lines on a chart in no way proves that a course change happened at 11:30 p.m. or at any other time.

- The supposition that clocks used by the crew were set back by 24 minutes before the accident does not hold up after considering *all* the available evidence. If such a change had taken place there should have been a dichotomy of times reported by witnesses for the time of the accident; one set of times from the crew that kept regular sea watches, and another set of times - about 20-25 minutes later - from most passengers and members of the victualling staff. That dichotomy just does not show up in the evidence available.

In addition to the above, we addressed some misstatements and accusations contained within Mr. Brown's article.

- The claim that there is little doubt that *Titanic's* navigators assumed the ship turned the corner "nearly perfectly" is unsupported.

- The claim that the proper course to NY from the corner was 266° true is incorrect.

- The claim that the coal smear on the bottom of the Atlantic is navigationally significant is without foundation.

- The claim that the floating wreckage could have been moved to a point 3 miles west of the wreck site longitude by a northeast wind is not supported by wind conditions seen in the photographs of lifeboats in the morning, nor can it be supported by survivor testimony.

- The claim that a westerly component of current in the region of the accident had *never* been observed, either before or after the sinking, was demonstrated to be false. The historical record shows that the Labrador current moves more westerly before converging with the Gulf Stream, and this is further supported by modern-day satellite data.

- The claim that the master mariners in the MAIB and Mr. Halpern used improper methods to determine the most likely location of the accident is false. It was a legitimate forensic approach that did not depend on erroneous CQD positions, nor on any assumptions concerning how the *Titanic* was navigated.

- The claim that the MAIB and Mr. Halpern ignored the full historical record is not accurate. In fact, Mr. Brown himself dismisses the historical record when it comes to explaining how Boxhall computed his CQD position in favor of his own unsupported version.

- The statement that the MAIB and Mr. Halpern gave credence only to *Titanic*'s second CQD position is not accurate. Neither of the two erroneous CQD positions were part of the work in determining *Titanic's* collision point.

- The accusation that a majority of historians have preferred creating explanations of the Mersey document rather than doing primary source research was stated without reference to any documentation or support.

- The accusation that the authors of "Maiden Voyage Mysteries" had a lack of understanding of timekeeping in *Titanic* is fallacious. Mr. Brown was apparently unaware of recently published work by one of the authors dealing extensively with the issue of timekeeping on the *Titanic*.

- The claim that the authors of "Maiden Voyage Mysteries" thought that a taffrail log provided the same accuracy as the modern GPS or an automobile's speedometer is entirely false. We never made such a claim. Reference to taffrail log readings in our paper was used only as *supporting* evidence that ship had not slowed down that night, and was entirely consistent with the speed-made-good over ground that we derived.

- The claim that it was the calm waters of the North Atlantic that led passengers and crew to perceive increased vibration is unsupported. However, there is supporting evidence that the ship's speed was being increased, none of which was mentioned in Mr. Brown's paper.

As we have seen, the two major claims made by Mr. Brown are unsupportable once all the relevant evidence is taken into consideration. Mr. Brown's work contains a large number of unsubstantiated statements, misstatements of fact, false arguments and disturbing accusations about other researchers working in the field.

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