

The Enigmatic Excursion of the SS *Birma*

By Samuel Halpern

Introduction

There were a number of ships that received *Titanic's* desperate calls for assistance the night of April 14, 1912. Including in the list, and the time at which they first heard from or about *Titanic*, are:

<u>SHIP [call letters]</u>	<u>TIME (EST)</u>
<i>Frankfurt</i> [DFT]	10:25pm April 14
<i>La Provence</i> [MLP]	10:25pm April 14
<i>Mount Temple</i> [MLQ]	10:25pm April 14
<i>Ypiranga</i> [DYA]	10:28pm April 14
<i>Caronia</i> [MRA]	10:31pm April 14
<i>Asian</i> [MKL]	10:34pm April 14
<i>Carpathia</i> [MPA]	10:35pm April 14
<i>Baltic</i> [MBC] (via <i>Caronia</i>)	10:35pm April 14
<i>Olympic</i> [MKC]	10:50pm April 14
<i>Celtic</i> [MLC]	11:00pm April 14
<i>Cincinnati</i> [DDC]	11:05pm April 14
<i>Virginian</i> [MGN]	11:10pm April 14

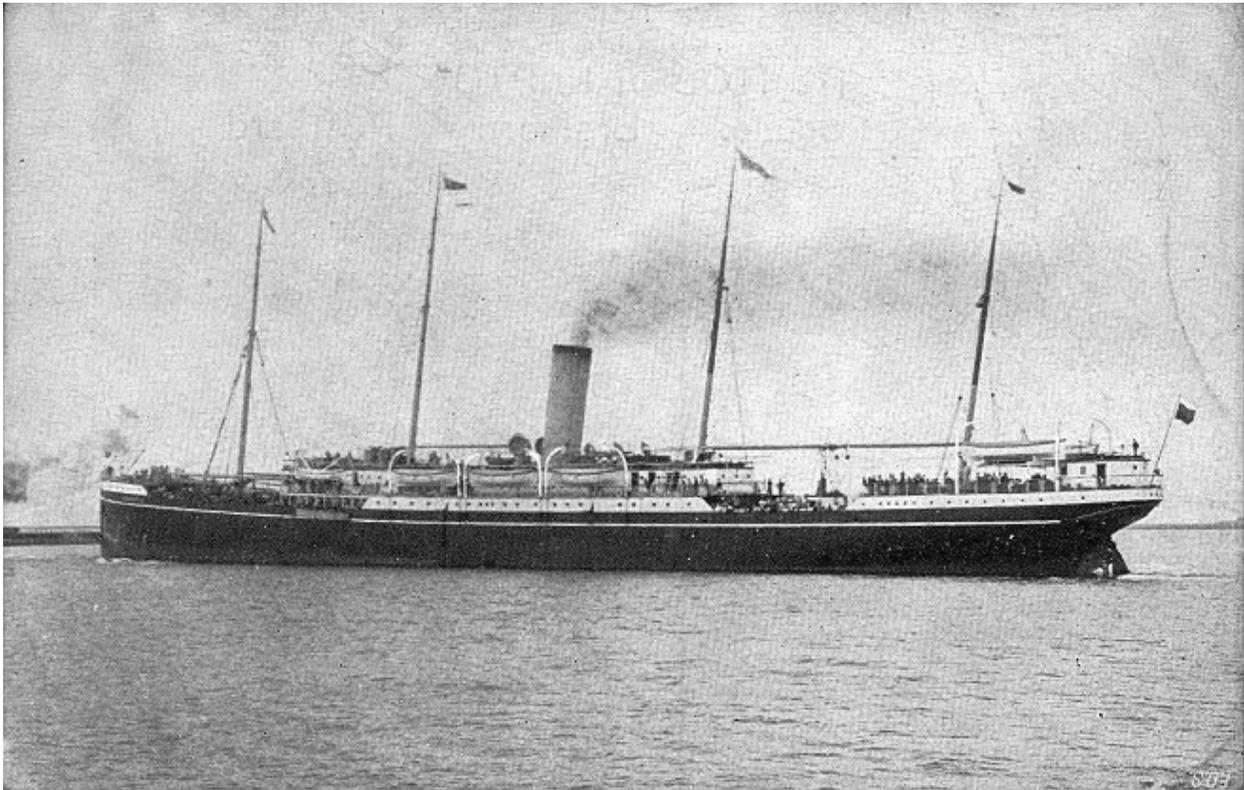
In addition to these there was the Russian-American Line steamer *Birma* en route for Rotterdam and Libau from New York under the command of Captain Ludwick Stulping.

Birma was a relatively small vessel, 415 feet in length, 46 feet in beam, and registered at 4595 gross tons. She had one yellow colored funnel, four masts, a single screw, and a rated speed of 13 knots. She also had accommodation for several first class, 200 second class, and 1,150 third class passengers. She was built by Fairfield Co. Ltd., Glasgow, and launched on October 2, 1894 as *Arundel Castle* for the Castle Mail Packet Company. In 1905 she was sold to the East Asiatic Company and renamed *Birma* for the far east service. In 1908 she was transferred to their subsidiary company, the Russian East Asiatic Steamship Company which became known as the Russian-American Line. Her first Libau to New York sailing for the Russian-American Line started on December 08, 1908. In April 1912 she was in her fourth year employed in that service.¹

Like many other transatlantic passenger steamers in 1912, *Birma* was equipped with a wireless telegraphic station. The equipment used was the De Forest system of the United Wireless Company of America. This was one of three major wireless telegraphic systems in use at the time – the other two being the Telefunken system that was used on many of the German vessels, and the Marconi system that was used on English, Canadian and other line vessels. *Birma's* wireless station was rated at having a range of 450 nautical miles when operating on a wavelength of 500 meters.² Her call letters were “SBA.”

¹ Compiled by Ted Finch, *The Ships List*, <http://www.theshipslist.com/ships/descriptions>.

² *Wireless Telegraph Stations of the World*, January 1, 1912 edition [N19.7:912].



SS *Birma* (Mariner's Museum, Newport News, VA)

Joseph L. Cannon was one of two wireless operators on board *Birma* the night of April 14, 1912. The other operator was Thomas G. Ward, former operator on the SS *Estonia*, who was returning with Cannon to Russia on *Birma*. In a memorandum written on company stationery to the parent company of the Russian-American Line, Joseph Cannon, *Birma's* chief wireless operator, wrote that the evening press report from Cape Cod that night was interrupted by a distress call received from *Titanic* [call letters MGY] at 11:45pm. Cannon goes on to say that *Titanic's* position was immediately taken to the Captain and their own position taken from the bridge. He then goes on to explain that they asked *Titanic*, "What is the matter with you?" and that atmospheric disturbances prevented them from deciphering the words "sinking fast" until two or three minutes had elapsed. They then heard *Titanic* say, "OK. We have struck iceberg and sinking, tell Captain to come."³

C.Q.D. - S.O.S. De M.G.Y. "We have struck iceberg sinking fast" come to our assistance position lat. 41.46 N. long. 50.14 W. M.G.Y.

Joseph Cannon goes on to explain that *Birma* replied to *Titanic's* request to come with the following message:

We are 100 miles from you steaming 14 knots. Be with you by 6.30. Our position lat. 40.48N, long. 52.13W. SBA.

³ The complete memorandum of Joseph Cannon can be viewed at: <http://www.paullee.com/titanic/Birma.html>.

In a found copy of *Birma's* handwritten wireless log,⁴ we find the following consecutive entries for the night of April 14, 1912:

9.0	Standing by.
10.20	Preparing for Press. Position of Birma 40 48 N. 52 13 W.
11.50	Receiving Press, interrupted by Distress Calls from MGY [<i>Titanic</i>]. Answering, positions exchanged & going to aid. reports sinking fast. Lat 41.46 n. [Long 50.14 w.]
12.0	
12.30	
midnight	
AM	[April 15]
1.0	Ascertained from ships in rear of us that MGY is <i>Titanic</i> . Motor Generator working well under strain.

When we compare what was written in the Joseph Cannon's memo, and the entries put down in *Birma's* wireless log, we find a number of differences:

Firstly, Cannon wrote in his memo that the press report from Cape Cod was "interrupted" at 11:45pm. Yet the handwritten wireless log has it down for 11:50pm.

Secondly, Cannon wrote that after receiving *Titanic's* distress message they informed *Titanic* that they were at 40°48'N, 52°13'W and only 100 miles away. Yet the wireless log has that position for *Birma* opposite the 10:20pm entry where they say they were preparing for the press report. It should also be noted that the distance between the two sets of coordinates (*Birma's* 40°48'N, 52°13'W, and *Titanic's* 41°46'N, 50°14'W) is actually 107 nautical miles, not 100.

Thirdly, if *Birma* was steaming at 14 knots and had to cover a distance of 100 miles, let alone 107 miles, it would take them 7 hours and 9 minutes to do so. Yet, according to Cannon's written report, they first picked up the call at 11:45pm, but told *Titanic* that they would get to her position by 6:30am. Add 7 hours 9 minutes to 11:45pm and you get 6:54am, almost 7am, not 6:30.

Further down in the handwritten wireless log we find several other relevant entries logged for the early morning hours of April 15:

- 4.10 DFT [*Frankfurt*] calls SBA [*Birma*], asks if we can hear MGY [*Titanic*]. Cannot hear any signals. Expect to reach MGY about 7.0.
- 5.0 MGN [*Virginian*] spoke SBA. Exchanged positions & inquiries for MGY
- 6.0 MWL [*Californian*] calls, proceeding for Boston, informs she is only 15 miles away from position given by *Titanic*. *Birma* 22 miles.

So here in the wireless log we find an expected time of arrival (ETA) of 7:00am at the distress coordinates, not the 6:30 time that Cannon put down in his memo. Furthermore, we find an entry that *Birma* was still 22 miles away from the CQD site at 6:00am. Once again we see an inconsistency in time and distance. To go 22 miles from 6:00am at 14 knots takes 1 hour 34 minutes. This would give you an ETA of 7:34am, not 7:00.

⁴ An expanded transcript of what appeared in *Birma's* handwritten wireless log is presented in Appendix A.

Trying to Find The Reality

It should be clear to the reader that we must take the information written down in both these primary sources as somewhat imprecise as far as the specific details that they provide. Unfortunately, the entries in *Birma's* wireless log were written up using ship's time, not some universal time reference such as Eastern Standard Time (EST) or Greenwich Mean Time (GMT) that were used in the wireless logs kept by most other vessels back then.⁵ So one of the things we need to do is to find the difference between ship's time carried on *Birma*, and time in New York so we can compare events recorded in *Birma's* wireless log to those recorded by other nearby vessels that were involved in the unfolding drama.

The key to this part of the puzzle lies in the position given (40°48'N, 52°13'W) while preparing to receive the evening press report from the powerful land station at Cape Cod [call letters MCC]. The 35-kilowatt long-distance station at Cape Cod started broadcasting the news, including stock quotations, at 10:00pm EST every night on a wavelength of 1,500 meters.⁶ It would send out the press report condensed to about 500 words followed by a silent period of about 15 minutes before the broadcast was repeated. At the end of each report Cape Cod would also send out messages to be relayed to some of the larger passenger vessels that may be coming within range.⁷ Essentially, the news reports were broadcast repeatedly from 10:00pm until 12:30am EST each and every night. Ships at sea within about 1,800 nautical miles of the station could then pick up the news, as well as some specific broadcast messages, at the operator's convenience.⁸

If passenger steamers of the Russian-American line followed the same practice of other shipping lines such as White Star and Cunard, *Birma's* clocks would be adjusted at midnight so they would read close to 12:00 when noon came the following day. Since *Birma* was heading east, her clocks would be set ahead by an amount that depended on the expected eastward progress that she would make. If she was making exactly her rated speed of 13 knots while heading to the eastbound corner point at 41°N, 47°W, the precise clock adjustment would amount to 27 minutes, excluding any allowance for an eastward set of current which can easily add another minute or two to the total adjustment needed. When 8 bells is struck at midnight, the clocks would be put ahead as the watch on deck is changed.

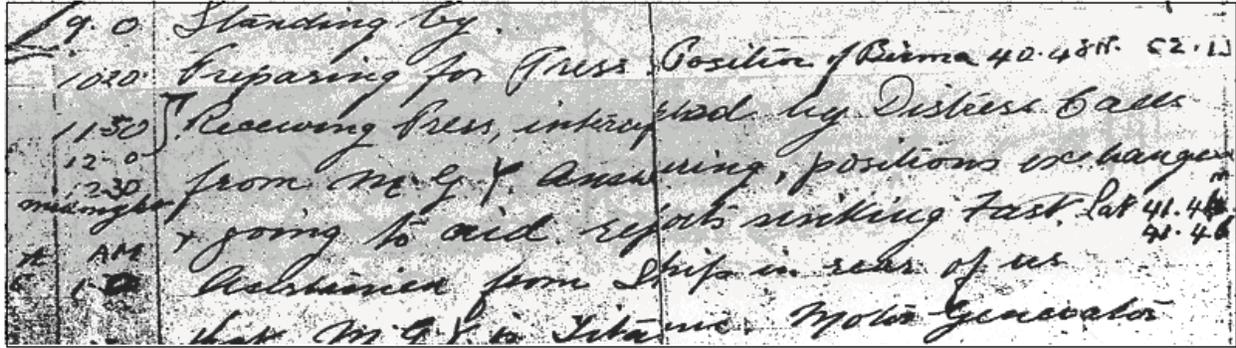
In *Birma's* wireless log, where all times entered were rounded to the nearest 5 minutes, we can see a ½ hour jump in the time column where the time for midnight was written. Notice that just below where they wrote "12.0" they wrote "12.30" which was then followed by the word "midnight." They then wrote "AM" in the time column below the word "midnight" as a heading for all times entered after that.

⁵ Times used by most ship stations west of 40°W longitude were logged in New York mean time, which is Eastern Standard Time (EST), the mean time for the 75th meridian. It is precisely 5 hours behind GMT.

⁶ *Wireless Telegraph Stations of the World*, January 1, 1912 edition [N19.7:912].

⁷ American Inquiry, p. 102.

⁸ Francis Arnold Collins, "Across the Atlantic by Wireless," St. Nicholas: An Illustrated Magazine for Young Folks, Vol. XL, Nov 1912-Apr 1913.



As we will see, it seems highly probable that *Birma's* clocks were put ahead by 30 minutes at midnight. Later in the forenoon, as was the practice on all other vessels back then, a sun line would be taken to fix their longitude more precisely, and a small adjustment of a few minutes would then be made to the clocks if needed so they would be accurate at noon.⁹ Then as the sun reached its highest point in the sky at noontime, they would take sights of the sun once again, but this time to determine their precise line of latitude. They would then run up the forenoon longitude line with the noon latitude line to get what is called a running fix for their noontime position.

It is also likely that the position 40°48'N, 52°13'W that was entered opposite the 10:20pm time entry line was *Birma's* expected dead reckoning (DR) position for 12:00am midnight. In the handwritten log we see that an arrow had been added pointing to the space between the 10:20 entry and the 11:50 entry coming from the written time of "12.0." Obviously, 12:00am does not come between 10:20pm and 11:50pm, and they certainly would not put their clocks back on a ship heading eastward. What I believe this notation is saying is that the position put down while preparing to receive the press report from Cape Cod was for 12:00am, midnight. It seems they wanted their ship's approximate midnight position so they could then post it along with the latest news of the day that would be taken down at that time.

To find the difference between time on board *Birma*, called Apparent Time Ship (ATS), and mean time in New York for April 14, 1912, we can move the vessel back along her route of travel at her rated speed of 13 knots until a longitude is reached where the sun would cross the ship's local meridian for that date. This is called Local Apparent Noon (LAN). We can then look up the time in EST when LAN would occur for that longitude on that date. The difference between ship's time and New York time would simply be the difference between the time of LAN in EST and 12:00.

Starting at the position 40°48'N, 52°13'W for 12:00am, we move *Birma* backward along the eastbound corner route for 12 hours at 13 knots to get to where she was at noon that Sunday, April 14. This is a distance of 156 nautical miles. What we find is that LAN would have occurred for *Birma* at a longitude of 55° 38.6'W. LAN at that longitude for April 14, 1912 occurred at 10:43am EST.¹⁰ The time difference between ship's time and New York time would be 1 hour 17 minutes.

Birma's wireless log has them preparing to receive the press at 10:20pm ATS. Time in New York would have been 9:03pm EST. So it seems that they started to prepare to receive the

⁹ Commander James G. P. Bisset, R.D., R.N.R., *Ship Ahoy!! Nautical Notes for Ocean Travelers, With Charts and Diary*, Third Edition, Charles Birchall Ltd., Liverpool, 1924.

¹⁰ 10:43 EST is the same as 15:43 GMT, April 14, 1912.

press a good hour before it was scheduled to be sent out from Cape Cod,¹¹ and part of that preparation would be to get their ship's expected midnight position from the bridge.

For times past midnight, we have to account for a 30 minute adjustment to the clocks as suggested by the aforementioned entries in the time column of her wireless log. This would make the time difference between *Birma* ATS and New York time 1 hour and 47 minutes for entries posted after midnight.

The next piece of the puzzle comes from the wireless logs, also known as "Procès-Verbals (PVs)," of other nearby vessels. In particular we can trace a series of key messages that contained distance information in them that *Birma* transmitted, and the times that these messages were logged in EST. These appear in the table below:

Wireless log entry	Time (EST) April 15	Message Recorded
<i>Mount Temple</i> [MLQ]	12:25am	SBA tells DFT he is 70 miles from MGY
<i>Mount Temple</i> [MLQ]	1:58am	SBA thinks he hears MGY, so sends "Steaming full speed to you; shall arrive you 6 in the morning. Hope you are safe. We are only 50 miles now."
<i>Virginian</i> [MGN]	2:15am	Sigs Russian American lines <i>Birma</i> . Says he is 55 miles from <i>Titanic</i> but cannot hear anything of him.
<i>Ypiranga</i> [DYA]	3:24am	SBA (<i>Birma</i>) sagt "We are 30 miles off MGY"

It is probably safe to say that the distances remaining to get to the CQD position that were reported by wireless from *Birma* were not precise, but rounded off to the nearest 5 miles.

If we arbitrarily take the 30 mile distance that was copied down in the wireless log of *Ypiranga* as a baseline, and assume that *Birma* increased her speed to 14 knots to get to *Titanic* as Cannon reported, then we get the following results:

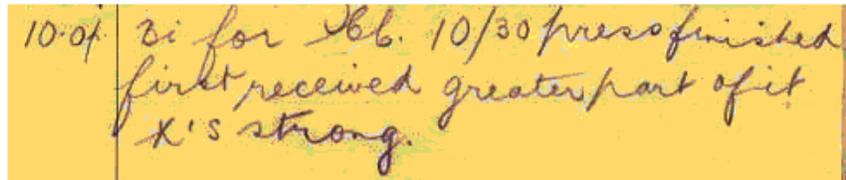
Time (EST)	Distance from MGY (miles)	
	Recorded in PV	Calculated
12:25am Apr 15	70	71.8
1:58am Apr 15	50	50.1
2:15am Apr 15	55	46.1
3:24am Apr 15	30	30.0

Notice that the only reported result that seems to be out of place in the table above is the 55 miles that was entered into the wireless log of *Virginian* for 2:15am EST. Looking at the above, it seems that an error may have made in decoding one of the digits when receiving *Birma's* message, where a transmitted "4" was mistaken as a "5." In the International Morse code that was used, the digit "5" was sent by tapping out 5 consecutive dots on the transmitting key [•••••], while the digit "4" was sent by tapping out 4 dots and a dash [••••—]. Based on what we see above, it seems that such an error in reception most likely occurred. After all, why should that one result be so far out of place when compared to the other three?

Such errors were quite common during the era of wireless telegraphy, especially when there were atmospheric disturbances and other forms of interference that had to be dealt with.

¹¹ The other real possibility is that they were preparing to receive the 10:30pm EST broadcast from Cape Cod, the same broadcast that *Olympic* had stood by for at 10:15pm EST. In that case, the 10:20pm time entered in *Birma's* wireless log could have represented 10:20pm EST, not ship's time that all the other entries seem to be.

There were reports of strong atmospheric, as they were called, noted in the wireless logs of *Olympic*, *Virginian* and *Birma*. For example, consider the following extract from the PV of *Virginian* for April 15, 1912:

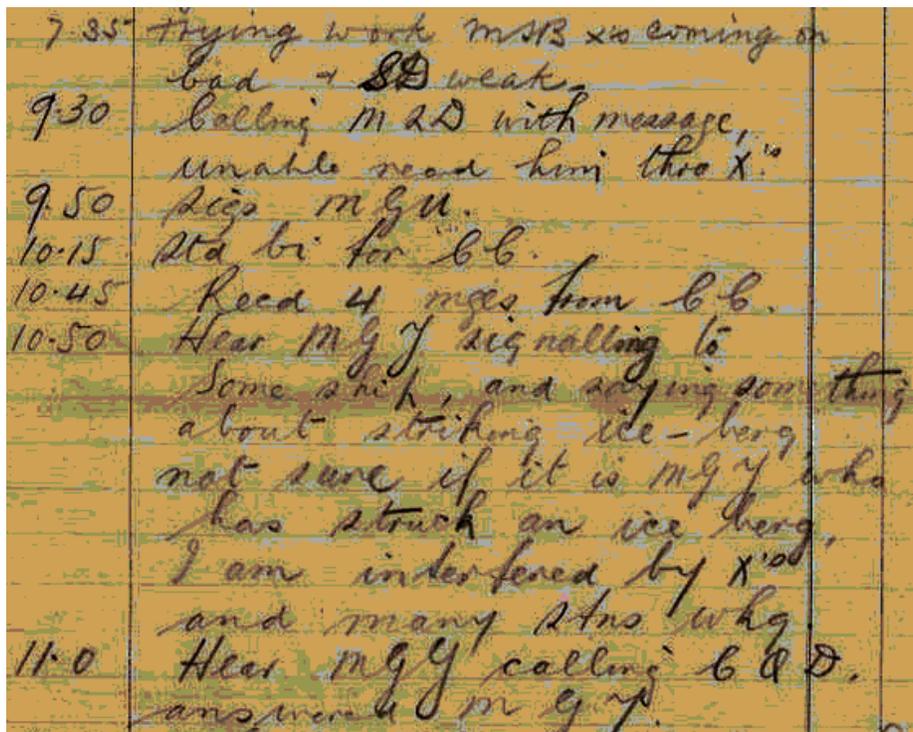


10-0p Bi for CC. 10/30 press finished first received greater part of it X's strong.

10-0 p Bi for CC. 10/30 press finished first received greater part of it X's strong.

The extracted entry in *Virginian's* PV is saying that at 10:00pm (EST) *Virginian's* operator was standing by (Bi) for the press report from Cape Cod (CC). The press report finished first at 10:30pm, and that he had received the greater part of it before being interfered with by strong atmospheric (X's).

In an extract from *Olympic's* PV for the night of April 14, 1912, we find the following:



7-35 Trying work MSB x's coming on bad and SD weak.
 9-30 Calling MSD with message, unable read him thro X's.
 9-50 Sigs mgy.
 10-15 Std bi for CC.
 10-45 Recd 4 mgs from CC.
 10-50 Hear mgy signaling to some ship, and saying something about striking ice-berg, not sure if it is mgy who has struck an ice berg, I am interfered by X's and many stns whq.
 11-0 Hear mgy calling CC, answered mgy.

- 7.35 Trying to work MSB [Cape Sable] X's [atmospherics] coming on bad and SD [signal detection?] weak.
- 9.30 Calling MSD [Sable Island] with message, unable read him thro X's [through atmospheric].
- 9.50 Sigs [exchanged signals with] MGU [SS *Campanello*].
- 10.15 Std bi [stand by] for CC [Cape Cod].
- 10.45 Recd [received] 4 mgs [messages] from CC [Cape Cod].
- 10.50 Hear MGY [SS *Titanic*] signaling to some ship, and saying something about striking

ice-berg, not sure if it is MGY [SS *Titanic*] who has struck an ice berg, I am interfered by X's [atmospherics] and many stns wkg [stations working].

11.0 Hear MGY [SS *Titanic*] calling CQD. Answered MGY [SS *Titanic*].

In the above we see that *Olympic's* operator was bothered by atmospheric all that Sunday evening. We also see that at 10:15pm EST he was standing by to receive the press report from Cape Cod, and that at 10:45pm EST he picked up 4 messages from Cape Cod that later followed the broadcast. At 10:50pm EST, he tuned his receiver off of the Cape Cod 1,500 meter wavelength and onto the standard 600 meter wavelength used for ship-to-ship communications where he then overheard *Titanic* through some interference telling some other ship about striking an iceberg. At 11:00pm EST, he heard *Titanic* calling CQD, and then answered them.

There is also the case of the steamship *Parisian*. Her operator picked up *Titanic's* distress coordinates from a message sent from *Olympic* to White Star Line offices in New York on the morning of April 15. What *Parisian's* operator thought he heard was that *Titanic's* reported position at midnight was "41.47N, 50.20W." The actual position transmitted by *Olympic* in that message was "41.46N, 50.14W."¹²

Then there is the case of the steamship *Asian*. Her operator heard a latitude of "51.46N" when he received *Titanic's* signal at 11:12pm EST on the night of April 14. It was not until he was able to contact *Titanic* again at 11:17pm EST when he got the latitude corrected to "41.46N."¹³ Here we see direct evidence where an operator mistook the transmission of the digit "4" for the digit "5."

In the wireless signal intercepted by *Mount Temple's* operator John Durrant at 1:58am EST April 15, we find that *Birma* transmitted a message to *Titanic* saying:

Steaming full speed to you; shall arrive you 6 in the morning. Hope you are safe. We are only 50 miles now.

From the table above it seems that the distance of 50 miles fits in well with the other distances and times that were recorded. However, the 6am ETA cannot be right. At 14 knots, it would take *Birma* a little over 3.6 hours to cover a distance of 50 miles. That would take her to 5:32am EST, or 7:19am ATS for an arrival time. We have also seen that in *Birma's* wireless log there was an entry for 4:10am where they told *Frankfurt* that they expected to arrive at the CQD site about 7:00am. It is likely that in the message intercepted by *Mount Temple* at 1:58am EST, a transmitted "7" was mistaken for a "6" which was put down in *Mount Temple's* PV. In this case, the second symbol in the 5 symbol sequence for a decimal digit may have been read as a dot instead of a dash.¹⁴

The table that we derived above can easily be extended to include the times (in EST and ATS) when *Birma* would be 22 and 0 miles from the CQD site, as well as calculating the

¹² The report overheard by *Parisian* was a message sent by *Olympic's* Capt. Haddock to Bruce Ismay's office in New York via Sable Island at 7:45am EST April 15. In that message, Haddock informed them that he has been unable to communicate with *Titanic* since midnight when her position was "41.46 north 50.14 west." In a message sent by *Parisian* to *Olympic* at 12:50pm April 15, she informed *Olympic*, "My knowledge of the *Titanic's* position at midnight was derived from your own message to New York, in which you gave it as 41.47, 50.20; if such were correct, she would be in heavy field ice and numerous bergs." (Ref: PV SS *Olympic*.)

¹³ From a report to the Marconi International Marine Corporation from *Asian's* Marconi operator Howard. Ref: Paul Lee, "*Titanic: A Desperate Dialog*," <http://www.paullee.com/titanic/pv.html>.

¹⁴ The number "6" is sent by tapping out 1 dash and 4 dots [—••••]; the number "7" is sent by tapping out 2 dashes and 3 dots [— —•••].

distance from the CQD site at 10:35am EST when the rescue ship *Carpathia* first picked up *Titanic's* distress call, and at 10:25am EST when *Titanic* first started to send out distress calls. These results are given in the table below:

New York Time (EST)	<i>Birma</i> Time (ATS)*	Distance from MGY (miles)	
		Reported by other vessels	Calculated (14 knots)
10:25am Apr 14	11:42pm Apr 14	-	99.8
10:35am Apr 14	11:52pm Apr 14	-	97.4
12:25am Apr 15	2:12am Apr 15	70	71.8
1:58am Apr 15	3:45am Apr 15	50	50.1
2:15am Apr 15	4:02am Apr 15	55 (45)	46.1
3:24am Apr 15	5:11am Apr 15	30	30.0
3:58am Apr 15	5:45am Apr 15	-	22.0
5:33am Apr 15	7:20am Apr 15	-	0.0

* *Birma* ATS = EST + 1:17 before midnight; ATS = EST + 1:47 after midnight.

The above table would suggest that *Birma* would have been about 100 miles away from the CQD site at the time when *Titanic* first started sending calls of distress at 10:25pm EST. So statements about being about 100 miles away and running about 14 knots appear to be somewhat consistent with the distances transmitted to other ships if *Birma* had picked up *Titanic's* very first distress call at 10:25pm EST (11:42pm ATS) and immediately headed to the rescue at 14 knots.

Some Conflicting Evidence Awaits

As we said before, it should be obvious to the reader that the times put down in *Birma's* wireless log were not very precise. In some cases, we can see what appears to be a contradiction, for example the 6:00am ATS entry where it said that *Birma* was then 22 miles away from the distress location. Clearly, to arrive at the CQD location about 7:00am, as reported in the 4:10am ATS entry, and being 22 miles away at 6:00am, requires a speed of 22 knots. Quite impossible for a 13 knot rated vessel.

To make this puzzle even more interesting, there is data from a number of other sources that we can include. The first comes from the wireless log of the SS *Baltic*.

5.30 a.m. - *Californian* persists in talking to steamship *Birma* such remarks as "Do you see a four-master salmon pink smoke-stack steamer around," etc. Impossible for us to work.

The 4-masted steamer with a salmon-pink colored funnel being described by *Californian's* wireless operator Cyril Evans was none other than his own ship, the SS *Californian*. He was telling *Birma* how his ship can be recognized, and asking them if they had him in sight. The time, 5:30am EST, would correspond to 7:17am *Birma* ATS (7:20am *Californian* ATS).¹⁵

Just 10 minutes earlier, *Mount Temple's* wireless operator John Durrant made an entry in his wireless log:

¹⁵ *Californian* ATS was 1 hour 50 minutes ahead of New York mean time.

5.20 Sigs. MWL; wants my position; send it. We're very close.

which says that *Californian* [MWL] was coming very close to where *Mount Temple* was at that time. The time, 5:20am EST, was 7:07am on *Birma* (7:10am on *Californian*).

Just 14 minutes before, at 5:06am EST, *Mount Temple*'s Capt. Moore took what is called a Prime Vertical sight of the sun (when the sun was due east true) to find his precise longitude when he was on the western edge of a vast ice field that was 5 to 6 miles wide.¹⁶ What Capt. Moore discovered was that his ship was at longitude 50° 09.5'W, a few miles east of *Titanic*'s reported longitude of 50° 14'W. He concluded correctly that *Titanic* could not have reached the position sent out in her distress messages because she would have been blocked by that field of heavy pack ice near where she sank. Across this ice field, to the east and a little to the south of where *Mount Temple* was when she reported that *Californian* was very close (5:20am EST), *Carpathia* could be seen picking up *Titanic*'s lifeboats.¹⁷

We also find another entry in Durrant's wireless log for almost an hour earlier which said:

4.25 MWL [*Californian*] working SBA [*Birma*]

This says that *Californian* and *Birma* were exchanging wireless messages. *Birma* time would be 6:12am ATS (on *Californian* it would be 6:15am ATS). At that time Capt. Lord was already taking his ship slowly across 2 to 3 miles of pack ice heading southwestward to get to the CQD position. Could this be the wireless contact reported in *Birma*'s wireless log for 6:00am when *Californian* told *Birma* that she was then 15 miles from the CQD site, and *Birma* was 22 miles away? Unfortunately, the exact times of messages were not always put down when they occurred in *Birma*'s wireless log. Many times they tended to group messages that occurred during a certain half hour period into single entry for that entire half hour period.

To summarize, *Birma* and *Californian* were overheard by *Mount Temple* exchanging messages at 6:12am *Birma* ATS. In one exchange between the two ships, logged at 6:00am in *Birma*'s wireless log, *Californian* had reported that they were 15 miles from the CQD position, while *Birma* reported being 22 miles away. At the time, *Birma* was coming up from the southwest running at supposedly 14 knots. *Californian* would have been coming down from the north,¹⁸ first having to cut slowly across 2 to 3 miles of pack ice, which she first cleared about 6:30am, before working up to full speed heading southward at a reported 13 knots.¹⁹

If *Birma* was 22 miles away when *Californian* was 15 miles away at 6:12am *Birma* time, then at 6:30am, about the time when *Californian* would have first cleared the pack ice, *Birma* should have closed the distance remaining to the CQD site to about 18miles, while *Californian* would have had about 14 miles to go. When *Californian* was asking *Birma* if they could see a 4-masted steamer with a pink funnel at 7:17am *Birma* time, *Birma* should have been only 7 miles from the CQD site, while *Californian* should have been just a little over 3 miles from the site.

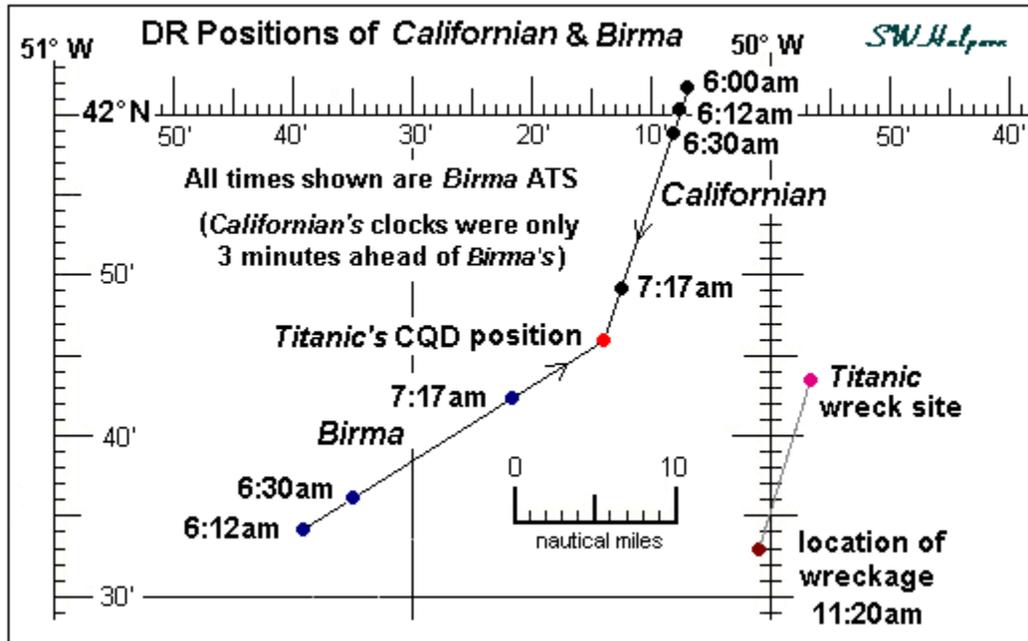
¹⁶ The sun was on the Prime Vertical at 10:06 GMT for 41° 40' N, 50° 09.5' W on April 15, 1912.

¹⁷ In Durrant's PV there is also an entry for 6:00am EST that said that there was much jamming and that *Californian* and *Carpathia* were both in sight. Time on *Californian* would be 7:50am ATS, about the time *Californian* was taken eastward across the pack ice and seen heading ENE true directly for *Carpathia*. (British Inquiry, 25551.)

¹⁸ At 6:00am, *Californian*'s DR coordinates would have been 42°02'N, 50°07'W, a distance of 17 miles from the CQD position. (Ref: Samuel Halpern, "Navigational Inconsistencies of the SS *Californian*," http://www.titanicology.com/Californian/Navigational_Inconsistencies.pdf.)

¹⁹ British Inquiry, 7261 & 7399.

Also keep in mind that *Mount Temple* and *Californian* were reported to be very close to each other only 10 minutes earlier by *Mount Temple's* wireless operator John Durrant. The straight line distance between *Birma* and *Californian* at 7:17am *Birma* time should have been about 10 miles, well within easy sight of each other as can be seen in the diagram below which maps these movements under the assumptions stated.



But neither ship sighted the other, nor was *Birma* sighted at that time by *Mount Temple* which was then relatively close to where *Californian* was. It would have been about the same time that *Birma's* wireless log reported sighting a group of icebergs ahead, and sent a warning to ships coming up from aft of them.²⁰

At 7:17am *Birma* time, *Californian* was actually running down along the western edge of the icefield heading about SSE true toward a point opposite to where *Carpathia* was. About 30 minutes later, 7:47am *Birma* time, *Mount Temple* had reported that both *Californian* and *Carpathia* were in sight,²¹ and about 8am *Californian* was sighted from *Carpathia* about 5 to 6 miles off bearing WSW true steaming directly across the pack ice toward *Carpathia's* position.²²

The next piece of valuable evidence comes from a statement by *Mount Temple's* Captain James Henry Moore before the American Inquiry when he was asked when it was that *Birma* came in sight.

Mr. MOORE. About 8 o'clock we sighted the *Birma*.
 Senator SMITH. How far away?

²⁰ The wireless log of SS *Birma* had: "7.15 Sight icebergs. Warn ships aft of us ... *Titanic* believed to be in sight (prove to [be] iceberg instead)." One of those ships coming up aft of *Birma* at the time was the SS *Frankfurt*, a ship that exchanges several messages with *Birma* that night.

²¹ PV *Mount Temple*: "6.0 Much Jamming. MPA [*Carpathia*] + MWL [*Californian*] in sight." 6:00am EST would correspond to 7:47am *Birma* ATS (7:50am *Californian* ATS).

²² Capt. Arthur Rostron, British Inquiry, 25551.

Mr. MOORE. We could just see smoke when we first sighted her. We just saw the smoke, and then we saw the yellow mast and yellow funnel. I thought it might possibly be the *Olympic*, and we steered toward her. Shortly after she was coming up very fast and we saw she had only one mast - that is, one funnel, rather.

Mount Temple's clocks were 1 hour 46 minutes ahead of those in New York,²³ within 1 minute of *Birma's*. This reported sighting time of 8 o'clock, when *Birma* was first seen coming up over the horizon, is about an hour later than what was put down as an ETA in *Birma's* wireless log. So where was *Birma* between 7 and 8am?

Our next source comes from an Associated Press news report that appeared on page 2 of the *Chicago Daily News*, Tuesday, April 23, 1912. The report said:

Capt. Stolpin [sic] said his vessel was 100 miles from the *Titanic* when he received the wireless call that the liner was in danger. The *Birma* hurried toward the spot, but had to take a roundabout course owing to the presence of enormous icebergs. As the *Birma* reached the scene of the disaster the Cunard liner *Carpathia* telegraphed that the *Titanic's* boats had been picked up, but that the liner had sunk.

The *Birma* received the first call for help from the *Titanic* at 12:32 Monday morning. Capt. Stolpin [sic] immediately proceeded at full speed in the direction indicated, meanwhile preparing his boats for rescue work, but when at 8 o'clock the *Birma* reached the scene she found nothing but icebergs. At the other end of an immense icefield she sighted a vessel, which turned out to be the *Carpathia*. The *Birma* was in wireless touch with the *Titanic* from 12:32 until 2 o'clock.

What is interesting about this report, which was taken down when *Birma* arrived in Maasluis, Holland on April 23, are the times that were given by Capt. Stulping. The difference between 12:32am and 8:00am is just about 7 ½ hours. The distance from the CQD location to 40°48'N, 52°13'W, the DR location for *Birma* at midnight, is 107 miles, a distance that would be covered in that amount of time if the ship managed to get up to 14.3 knots.

In an article written by San Francisco journalist and *Birma* passenger Charles E. Walters on April 22, 1912 for *The Daily Telegraph*, a speed of 14 ½ knots was mentioned as the speed that *Birma* was making during her mad dash to the rescue. The article was signed by Capt. Stulping, First Officer Alfred Neison, Purser G. Hesselberg, and the two wireless operators, Joseph Cannon and Thomas Ward.²⁴

A time of 12:32am Monday morning would have been a couple of minutes after they would have set their clocks ahead by 30 minutes. It would correspond to 10:45pm EST. So if we accept a departure time of 12:32am ATS, just 2 minutes past the midnight change of watch and clock advancement time, and use a speed of 14.5 knots from that point forward, we find that it would take 7 hour and 19 minutes to cover the remaining 106 miles to the CQD location. The ETA works out to 7:51am *Birma* ATS, consistent with an arrival time of about 8 o'clock in the morning identified in the Associated Press report and attributed to Capt. Stulping. Furthermore, we have seen that smoke from *Birma's* yellow funnel was sighted coming over the horizon about that time from *Mount Temple* who kept to the western side of the ice field from *Carpathia* when the latter was picking up *Titanic's* lifeboats.

²³ British inquiry, 9436-9437.

²⁴ Charles E. Walters, "The *Titanic* Disaster; Story of the *Birma*," *The Daily Telegraph*, April 25, 1912, p. 16.

So how do we resolve all these results to form a consistent picture of what actually took place?

I believe the answer is not too difficult to figure out. Part of the problem is that we are working with two different time frames, Apparent Time Ship and Eastern Standard Time. The first frame of reference is further complicated by a ½ hour clock adjustment which seems to have been implemented about midnight, ship's time. So if we convert everything to EST, which is invariant, and look carefully at some of the primary source documents, things should start to fall into place.

Trying To Put The Pieces Together

Joseph Cannon said they were picking up the press from Cape Cod when they were “interrupted” by a distress call from *Titanic* about 11:45pm ATS. In their log it was written down as 11:50pm. This would be the same press report that *Olympic's* operators were preparing for at 10:15pm EST, and which was followed later by 4 messages from Cape Cod that *Olympic* picked up at 10:45pm EST.²⁵

However, if *Birma's* operators were listening to Cape Cod they should not have been able to hear *Titanic*.²⁶ The reason is that Cape Cod transmitted on a wavelength of 1,500 meters [200 kHz frequency] while *Titanic* was transmitting on a wavelength of 600 meters [500 kHz frequency]. So either they must have tuned their receiver back to 600 meters during a short break in the broadcast, or their receiver was not very selective and they were able to hear *Titanic* coming through despite being tuned to Cape Cod's wavelength. The latter is not very likely as it would make them susceptible to all sorts of interference when trying to receive on any wavelength.

Insight to solving this little mystery comes from Harold Cottam, *Carpathia's* wireless operator. During his questioning before the British Wreck Commission, Cottam was asked how did he know for sure that it was 10:35pm EST when he picked up *Titanic's* distress call. Cottam replied, “I had another chit of paper with that on. I got it directly after Cape Cod had finished the first round of press. I know he finishes at half-past 10 so that I know it must have been at 10.35.” Cottam did not hear *Titanic* calling until after he tuned off of Cape Cod's wavelength and onto the 600 meter wavelength for commercial shipping when he tried to call *Titanic* to inform them that Cape Cod had a batch of messages for them to pick up.²⁷ That is why he first picked up the 10:35pm EST distress call and not any of the calls sent out during the preceding 10 minutes. It therefore seems likely that *Birma's* operators also heard the end of the first round of press from Cape Cod, and like Cottam, tuned to the 600 meter shipping wavelength before turning back to receive a second round of press and some broadcast messages. It is even possible that they tuned back to 600 meters a minute or two before Cottam did.

Joseph Cannon wrote in his memo that the first message they received from *Titanic* was CQD - SOS, and that it contained the coordinates 41°46'N, 50°14'W. These coordinates were first noted in the transmissions sent out from *Titanic* at 10:35pm EST. Before that time, between 10:25 and 10:35pm EST, *Titanic* was sending out 41°44'N, 50°24'W. The coordinates sent out

²⁵ See extract from *Olympic's* PV.

²⁶ American Inquiry, p. 919.

²⁷ Actually he picked up about four messages in 7 to 8 minutes to relay to *Titanic*. (AI p. 102.)

from 10:35pm EST onward were referred to as a “corrected position.”²⁸ In *Birma*’s handwritten wireless log, we are able to see that they copied down a latitude number that was subsequently written over, with the clearer notation of “41.46” written directly under it. In an original copy of the handwritten wireless telegraphic office form signed by both operators, Joseph Cannon and Thomas Ward, the first distress call from *Titanic* was put down for a time of “11.50am April 14th/15,” and the position of *Titanic* given as “Lat 41.46n. Lon 50.14w.”²⁹ However, upon close examination of the handwritten office form, the time that was originally put down was “11.55” with the last digit “5” overwritten with the digit “0.” Furthermore, the latitude as originally written down on this form was “41.44n” with the last digit “4” overwritten with by the digit “6,” just like what we see in their handwritten wireless log. So it appears that they first may have picked up the earlier set of coordinates that had 41° 44’N, but soon corrected it to 41° 46’N that was first sent out at 10:35pm EST (11:52am ATS) and afterward. Joseph Cannon did note that they were bothered by atmospheric and had some difficulty “deciphering” some of the words that were being sent.

But once the CQD was received, did *Birma*’s wireless operators immediately report it to Capt. Stulping? Cannon wrote that they had asked *Titanic*, “What is the matter with you?” and then, as he explained, it took “two or three minutes” to understand the words “sinking fast” because of some “slight atmospheric disturbances” that were then taking place. So it seems that it may have been closer to 11:40pm EST when they first reported to the bridge that they received a distress call from a ship with the call letters MGY, and that she reported that she was sinking. Capt. Stulping and his officers would then check their current DR location and figure out the distance and course heading to take them to the distress coordinates.³⁰ Then they would get their ship turned onto the new heading, order extra stokers be called out to help feed the fires in the boilers to work the vessel up to her best possible speed, and form an estimate of how long it would take them to reach the sinking ship. And to add distraction to all of this, the watch on deck was about to change and the clocks put ahead. So it is not at all unreasonable that it would be close to 10:45pm EST when Capt. Stulping would have put *Birma* on a course of N57°E true in a race against time to get to *Titanic*. Again, when looking at one of the original handwritten telegraphic office forms signed by both operators, it shows a time of “12.2.am 15.4.12” (i.e., 12:02am on April 15, 1912) for a wireless message that read:

MGY. ‘We are only 100 miles from you steaming 14 knots be with you by 6.30. our position Lat 40.48N Lon 52.13W’ SBA.

²⁸ Cape Race had 10:35am EST for the time that the “corrected position” was received, while *Ypiranga* had put it down for 10:36pm EST. It should be also noted that there were a few similarities in the wording in the message received by *Ypiranga* at 10:36pm EST and the message received by *Birma*. In the message recorded by *Ypiranga* we find the words, “require immediate assistance,” “collision with iceberg,” and “sinking.” In the message written down in Cannon’s memo we find the words, “come to our assistance,” “struck iceberg,” and “sinking fast.”

²⁹ Photocopies of several of these handwritten wireless telegraphic office forms from *Birma* can be seen on pages 172-173 in Eaton & Hass, *Titanic Triumph and Tragedy*, 2nd Ed., W.W. Norton & Co., 1995. In a typed copy of these radio telegraphic office forms received by the British Board of Trade from diplomatic contacts in St. Petersburg, Russia, the time and date for the first distress message received from *Titanic* put down was “11 H. 45 M. April 14/15 1912.” The message read, “Cqd - Sos. from M.G.Y. We have struck iceberg sinking fast come to our assistance. Position Lat. 41.46 n. Lon. 50.14 w. M.G.Y.”

³⁰ In the handwritten wireless telegraphic office form written by Joseph Cannon, he states that the first message sent from *Birma* to *Titanic* was, “MGY-SBA What is the matter with you Answered OK we have struck iceberg and sinking pse tell Captain to come MGY.” No time was written on the form.

This is essentially the same message text that Joseph Cannon put down in his memorandum to the parent company of the Russian-American Line. The distance was clearly a very rough estimate, and the ETA was clearly a mistake because you cannot cover 100 miles at 14 knots in 6 ½ hours. But the operators were anxious to tell the sinking *Titanic* that they were coming, and so they sent them that particular message at that particular time.

So with all that we now know, let us compare times and distances to get *Birma* to the reported CQD location. The results of this comparative work are shown in the table below:

New York Time (EST) Apr 14/15	<i>Birma</i> Time (ATS)* Apr 14/15	Distance from CQD (miles)				Notations
		A 13kt / 14kt	B 14.0kt	C 14.5kt	Over-heard	
10:30pm	11:47pm	109.0	–		–	1 st press report from Cape Cod ends
10:33pm	11:50pm	108.0	–	100	–	CQD rcvd 11.50 [PV <i>Birma</i>]
10:43pm	12:00am / 12:30am	106.6	–	98	–	Midnight for <i>Birma</i> [40°48'N, 52°13'W]
10:45pm	12:32am	106.2	100	97	–	<i>Birma</i> heading for CQD
12:25am	2:12am	82.9	77	73	70	Heard by <i>Mount Temple</i>
1:58am	3:45am	61.2	55	50	50	Heard by <i>Mount Temple</i>
2:15am	4:02am	57.2	51	46	55 (45)	Heard by <i>Virginian</i>
3:24am	5:11am	41.1	35	30	30	Heard by <i>Ypiranga</i>
4:13am	6:00am	29.7	23	18	–	22 miles from CQD [PV <i>Birma</i>]
4:25am	6:12am	26.9	21	15	–	<i>Californian</i> working <i>Birma</i> [PV <i>Mount Temple</i>]
5:13am	7:00am	15.7	9	3	–	ETA 7.0 [PV <i>Birma</i>]
5:28am	7:15am	12.2	6	0	–	Icebergs sighted [PV <i>Birma</i>]
5:54am	7:41am	6.1	0	–	–	ETA column B
6:20am	8:07am	0	–	–	–	ETA column A

* *Birma* ATS = EST + 1:17 before midnight; ATS = EST + 1:47 after midnight.

In the above we have two columns for time, the first showing New York mean time (EST), and the second showing *Birma* ATS, which includes a 30 minute clock advance at midnight as suggested by the time entries in her wireless log.

The third column, marked A, represents calculated results based on *Birma* being at 40°48'N, 52°13'W at midnight, a distance of 106.6 miles from the reported CQD position, while heading for the eastbound corner point at 41°N, 47°W. In these calculations we assumed that *Birma* was going at her rated speed of 13 knots before her course was altered at 10:45pm EST (12:32am ATS), and then averaged 14 knots from the alter-course point to the CQD location.

The next column, marked B, uses the information given by Capt. Stulping to the Associated Press. Capt. Stulping told the press they were about 100 miles away when they altered course at 12:32, and when they arrived at the scene it was about 8 o'clock. If we start from 100 miles at 12:32, and assume that the vessel averaged 14 knots thereafter, we get the results shown in column B.

The next column, marked C, uses the information that appears to have been used by the wireless operators when they reported how far away they were from the CQD site to other vessels at various times. The wireless operators must have been told that *Birma* had to travel

about 100 miles to reach *Titanic*, just as Capt. Stulping told the Associated Press later on. They also would have been told that additional stokers were being called up to drive the ship at her maximum possible speed, a very optimistic 14 to 14 ½ knots. The entry put down in their wireless log for 11:50pm said that they received distress calls from MGY, exchanged positions, and was going to their aid. So it seems that the distances remaining that were told to other vessels later on that night were based on being 100 miles away at 11:50pm ATS and running at a very optimistic speed of 14 ½ knots from that point onward. This gives us the numbers shown in column C; numbers that match close to those that were recorded in the wireless logs of other nearby vessels regarding *Birma's* remaining distance to the CQD location. (The difference between the numbers in this column and those we worked earlier has to do with our starting point and assumed speed of the ship. In the earlier tables we started by arbitrarily taking the 30 miles reported by Ypiranga for 3:24am EST as a baseline, and then worked out the distances both ways from there using 14 knots. Here we started by taking 100 miles for 10:35pm EST (11:52am ATS) and worked it forward in time using a speed of 14.5 knots to get it down to 0.)

The recorded information that these vessels received is shown in the next column for comparative purposes. (As we surmised earlier, the transmitted distance for 2:15am EST was most likely 45 miles, but was copied down as 55 due to an error in decoding in one of the received digits.)

The last column in the table are notations regarding the various entries shown. All times are taken to the nearest minute, and the calculated distances for columns B and C are rounded to the nearest mile.

Looking at the results above we can finally start to see how the pieces of the puzzle are starting to fit. The wireless operators were listening to the first round of press from Cape Cod which finished around 10:30pm EST (11:47pm ATS). Tuning to the 600 meter shipping wavelength, they then soon picked up a distress call coming from a ship with call letters MGY. Around 10:35-10:36pm EST (11:52-11:53pm ATS) they picked up a CQD from *Titanic* [MGY] that contained the “corrected” coordinates which they marked down, and sent a message to MGY “asking what is the matter with you?” Because of atmospheric conditions, it took several minutes to get a clear reply back that said that she was sinking along with a request that they tell their Captain to please come to their aid. This was then taken to the bridge where the operators were told that *Birma* was about 100 miles from the distress coordinates, and to go back and tell MGY that *Birma* would be coming to their aid. This resulted in the message sent to *Titanic* at 10:45pm EST, 2 minutes past midnight (12:02am) *Birma* time as noted in a handwritten wireless telegraphic office form signed by both operators. This was just about the time when the Middle Watch was coming on to replace the watch on deck, and the time that the clocks were adjusted 30 minutes ahead for the next day. This put the time for when *Birma's* course was altered and extra speed called for at 12:32am ATS in April 15 hours. At that moment, *Birma* would have been just about 106 nautical miles from the CQD coordinates by dead reckoning.

When *Birma's* wireless operators contacted *Titanic* to tell them where they were, how far away they were, how fast they were going, and when they expected to arrive at the reported position, they sent them particulars that were not precisely accurate. As noted before, the distance between the two sets of coordinates that were exchanged was almost 107 nautical miles, not 100, and an ETA of 6:30am does not quite fit with a speed of 14 or even 14.5 knots. However, it is quite possible that in his haste to get back to *Titanic* to tell them that *Birma* was coming, Joseph Cannon simply took 100 miles and divided it by 15 to get a very rough estimate of how long it would take to cover that distance. This would give him 6 and 2/3 hours

(i.e., 6 hours 40 minutes) which when added to 11:50pm, gave him an ETA of 6:30am. Then, forgetting to add in the 30 minute clock adjustment that was then taking place, he told *Titanic* that *Birma* should arrive by them at a very optimistic 6:30 in the morning.

From intercepted wireless messages found in the wireless logs of other vessels, we see that *Birma's* operators were working off a list of numbers similar to what we show in column C above. Those numbers start from a distance of 100 miles away at 11:50pm ATS and end at an ETA of 7:15am ATS; consistent with the statement "Expect to reach MGY about 7.0" that appeared in their wireless log for 4:10am when they exchanged messages with the SS *Frankfurt* [DFT]. These distances seem to work only if they actually used a very optimistic speed of 14.5 knots as mentioned in the article written by Charles Walters for *The Daily Telegraph*.³¹

We also see that by 6am the wireless operators were working off of a slightly different set of numbers than what they had been using before, numbers that showed a later expected arrival time than what they had started with. In the wireless communication with *Californian* that was put down for 6am, *Birma* reported being 22 miles away. This distance seems to fit more with the numbers shown in column B that started at a distance of 100 miles at 12:32am ATS, when *Birma's* course was actually altered, and used a more realistic average speed of 14 knots.³² We also see that the information exchange with *Californian* most likely took place at 6:12am ATS (4:25am EST) as reported in the wireless log of *Mount Temple* even though it was put down for "6.0" in *Birma's* wireless log.

By 7:15am *Birma* ATS, several icebergs came into sight prompting the wireless operators to give warnings to ships coming up from behind them. At one point they believed they had *Titanic* in sight, but it proved to be a large iceberg instead. According to Capt. Stulping, it was about 8am when they arrived at the where they thought *Titanic* would be. As we have previously noted, it was about that time that *Mount Temple* first saw *Birma* coming up over the horizon. An expected arrival time of 8am is relatively consistent with the timeline we show in column A in the table above. It seems that that particular timeline represents a closer reality to what was actually happening, except for the effects of two converging currents that impacted everything afloat on the waters in that region that fateful night.

Last Messages Received From *Titanic*

Joseph Cannon wrote in his memorandum that they received a message from *Titanic* that read:

SOS SOS – CQD CQD de MGY. We are sinking fast, passengers being put into boats.
MGY.

and that later another message came in that read:

CQ de MGY. Women and children in boats, cannot last much longer. MGY.

³¹ Charles E. Walters, "The *Titanic* Disaster; Story of the *Birma*."

³² The power required increases in approximate proportion to the cube of the speed. To go from a rated full speed of 13 knots to 14 knots, the power required would have had to increase by 25%. An increase in speed to 14.5 knots would have required a increase by almost 40% in the power supplied from the boilers. According to the article by Charles Walters, 15 extra stokers were called upon to feed the fires. The power supplied would be in proportion to the firing rate being used. But no matter how many men they put to shoveling coal, realistically there is just so much they can do.

In *Birma's* wireless log we find an asterisked entry that read:

At 1.30 AM MGY states passengers are being put in boats. Calling MGY at intervals. No reply after 2.0 AM.

The time noted in *Birma's* wireless log, 1:30am, would correspond to 11:43pm EST if the time put down was precise. In a *typed* wireless telegraphic office form given to the British Board of Trade, the time noted for this message was marked as “about 1.40 a.m.” In the *handwritten* office form signed by Cannon, no time was put down. It is entirely possible that the time of 1:40am roughly corresponded to the message that said, “Women and children in boats, cannot last much longer.” A time of 1:40am *Birma* ATS would correspond to 11:53pm EST, and *Birma* was heard trying to call *Titanic* at 1:55am EST by *Mount Temple*.³³

The good news for us is that messages about passengers being put into boats can easily be correlated with times reported by other vessels that were in the vicinity as shown in the following table:

Wireless log entry	Time (EST)	Message Recorded
<i>Mount Temple</i> [MLQ]	11:35pm Apr 14	MKC sends M. S. G. [Master Service Gram] to MGY. MGY replies “We are putting the women off in the boats.”
<i>Baltic</i> [MBC]	11:35pm Apr 14	<i>Titanic</i> sends CQ: “We are getting the women off in small boats.”
<i>Virginian</i> [MGN]	11:35pm Apr 14	MKC de MGY ~ Sinking. We are putting passengers and ~ off in small boats ~ weather clear. MGY.
<i>Ypiranga</i> [DYA]	11:37pm Apr 14	MGY sagt We are putting the women off in the boats
<i>Ypiranga</i> [DYA]	11:40pm Apr 14	MGY sagt We are putting passengers off in small boats
<i>Olympic</i> [MKC]	11:40pm Apr 14	<i>Titanic</i> says, “Tell captain we are putting the passengers off in small boats.”

Clearly, these messages confirm that *Birma's* wireless operators were using ship's time in their wireless log, and that *Birma* ATS was indeed about 1 and ¾ hours ahead of EST when those “passengers are being put in boats” messages were being sent out. The statement in *Birma's* wireless log about “calling MGY at intervals” was referring to attempts by *Birma* to communicate with *Titanic* after being told about the women and children being put into boats, and that *Titanic* could not last much longer.

The last communication *Birma* had with *Titanic* was probably a little before 11:55pm EST when *Mount Temple* noted that *Birma* and *Frankfurt* were both calling *Titanic*. Although *Mount Temple* did not hear any reply from *Titanic*, it is likely that it was at that time, or shortly after, that *Frankfurt* was told “to keep out of it and stand by” by *Titanic's* Jack Phillips as he was trying to communicate with *Carpathia*.³⁴ According to *Carpathia's* operator Harold Cottam, the very last communication that he had with *Titanic* was at 11:55pm EST.³⁵

Although it was noted in *Birma's* wireless log that they did not receive any replies from *Titanic* after 2am, we saw that *Mount Temple's* operator John Durrant wrote in his PV that at

³³ PV SS *Mount Temple*. The last that *Mount Temple* heard from *Titanic* was at 11:47pm EST as the power supplied by the ship's dynamos was slowly going down.

³⁴ Harold Bride, BI 16559-16566.

³⁵ Harold Cottam, AI p. 132.

1:58am EST:³⁶

Birma tells *Frankfurt* that he thinks he hears the *Titanic*, so calls him and says, “Steaming full speed to you, shall arrive you six in morning. Hope you are safe. We are only 50 miles now.”

This was an intercepted message from *Birma* [SBA] to *Frankfurt* [DFT], the one which we referred to earlier when we were looking at expected arrival times and remaining distances to *Titanic*'s reported position. As in the case of *Virginian*'s wireless operator, *Birma*'s operator also thought he heard signals from *Titanic* at a time that was well after *Titanic* had sunk. Could this have come from the same far off wireless station that *Virginian*'s operator faintly heard at 12:20am EST adjusting a “spark similar to *Titanic*'s?”³⁷

Final Actions

When *Birma* finally arrived at what they thought to be the vicinity of the distress position, it became obvious to Capt. Stulping, as it did earlier to *Mount Temple*'s Capt. Moore and *Californian*'s Capt. Lord, that *Titanic* could not have reached the distress position that was sent out by wireless because an enormous field of pack ice would have blocked her path. As described in the article written by Charles Walters:

After daylight we reached the position given us, and found at once that it must be wrong, for although we passed enormous icebergs of a size seldom seen at this season of the year so far south, yet it was obvious that none of those could have damaged the *Titanic*, for to the north-east of us lay enormous ice-floes, extending for miles. The *Titanic*, coming westward, would have been warned by those floes that large bergs were about. We soon heard by wireless that the *Carpathia* was picking the boats up north of the ice-floe, and this is the first intimation we, or the other boats we had spoken to, had of the presence of the *Carpathia*.

What is also most interesting about this account is that the first time they heard that *Carpathia* was at the site of the wreckage picking up survivors was by wireless.

At 6:45am EST, *Mount Temple*'s operator John Durrant heard *Carpathia* reporting that she picked up 20 boat loads of survivors.³⁸ *California*'s wireless operator, Cyril Evens, testified: “I heard him [*Carpathia*] say this; he said that he had picked up twenty boat loads, I think it was.” When asked how soon did he get in touch with *Carpathia*, he responded, “I did not get her until I got nearly alongside of her...About half-past 8, I think.” Evens also confirmed that he had difficulty communicating with *Carpathia*, and on occasion they told him to “shut up.”³⁹

Gilbert Balfour, Marconi Company inspector and an operator on *Baltic*, testified that about 6:30am EST they received a message from *Carpathia* that said, “The *Titanic* has gone down with all hands, as far as we know, with the exception of 20 boatloads, which we have

³⁶ John Durrant, BI 9571. In Durrant's PV he put down the time as 1:58am EST and 3:44am [*Mount Temple*] ATS.

³⁷ PV SS *Virginian*.

³⁸ PV SS *Mount Temple*.

³⁹ Cyril Evens, BI 9148-9150, 9165-9166. The words “shut up” was communicated by sending the letters “DDD.” This was known as the “silent signal,” meaning that all other stations must cease transmitting. (See AI p. 147.)

picked up. Number not accurately fixed yet. We can not see any more boats about at all.”⁴⁰

On *Californian*, 6:45am EST was 8:35am ATS; on *Birma* it would be about 8:32am ATS. Yet *Birma*’s wireless log had in an entry for 8:00am which said, “Call CQ. MWL answers. Says MPA (*Carpathia*) has picked up 20 Boat loads.” This was the first that *Birma* heard that *Carpathia* was on the scene picking up boats, before *Carpathia* was ever seen by *Birma*. This obviously was after *Californian*’s Evans heard this from *Carpathia*. But the evidence from *Mount Temple* and *Californian* both show that the “20 boat loads” message was sent about 8:30am *Birma* time. And this would make sense since it was about 8am when the last lifeboat, No. 12, was seen approaching *Carpathia*, and it was about 8:30am, *Carpathia* time, when all passengers were taken on board.⁴¹ So once again we see where specifics written in *Birma*’s wireless log do not quite match up with other available and mutually supportable evidence.

What we do know is that *Birma* and *Californian* were conversing quite often beginning as early as 4:25am EST (6:12am *Birma* ATS) as reported by *Mount Temple*. Between 5:30am EST to 6:55am EST (7:17am to 8:42am *Birma* ATS) we find that the steamship *Baltic* specifically complained about both of these two ships carrying on long, irrelevant conversations thereby jamming the air waves.⁴² In a way, this was admitted to by *Californian*’s wireless operator Cyril Evans who later that afternoon happened to tell *Olympic*’s wireless operator E. J. Moore:⁴³

We were the second boat on the scene of disaster. All we could see there were some boxes and coats and a few empty boats and what looked like oil on the water. When we were near the *Carpathia* he would not answer me, though I kept on calling him, as I wanted the position. He kept on talking to the *Baltic*. The latter [Gilbert Balfour on *Baltic*] says he is going to report me for jamming. We were the nearer boat to the *Carpathia*. A boat called the *Birma* was still looking.

Californian’s Cyril Evans was obviously concerned about being reported for jamming by Marconi inspector Balfour who was working the wireless on *Baltic* at the time. *Olympic*’s operator E. J. Moore then informed Evans that they “would take note of [the] fact that in cases of distress nearer ships should have precedence.” However, the real significance in what we find here is direct evidence from Cyril Evans that *Birma* was still looking at the time *Californian* was near *Carpathia*, and the latter would not answer *Californian* because *Carpathia*’s Harold Cottam was trying to communicate with *Baltic*.

The too few entries in *Birma*’s wireless log are, for the most part, all neatly grouped into time slots marked on the hour or half-hour. Unfortunately, as we have seen before, we cannot rely too heavily on the times reported in that document, and must look for other evidence that those times can be cross-checked against.

So what did *Birma* do after arriving close to what she thought to be the CQD position and finding only icebergs and ice floes about? Again we can look at the information written by Charles Walters:

⁴⁰ Balfour, AI p. 1058.

⁴¹ Rostron, AI p. 22. *Carpathia*’s clocks were set 1 hour 57 minutes ahead of EST, or about 10 minutes ahead of *Birma*’s clocks. (Ref: Samuel Halpern, “12:35 A.M. Apparent Time *Carpathia*,” *GTLS* website, http://www.gtls.org/articles/halpern/1235_ats_carpathia.html.)

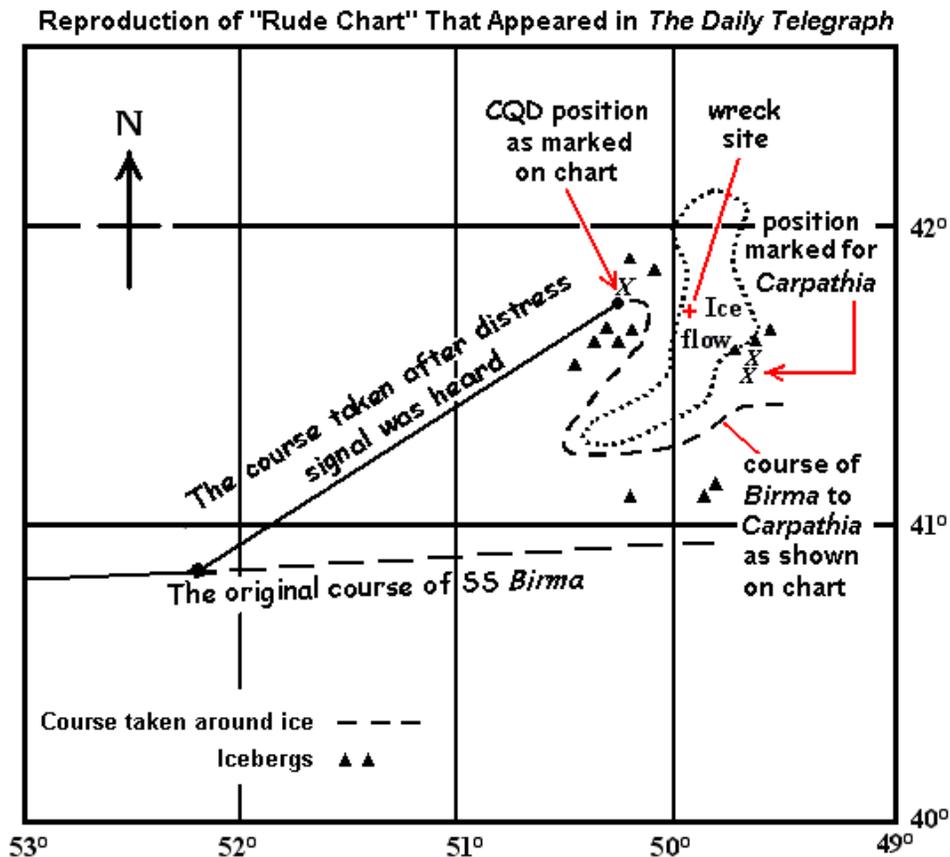
⁴² PV SS *Baltic*.

⁴³ PV SS *Olympic*. The message was logged at 4:52pm EST April 15.

We herewith enclose a rude chart, drawn for the purpose of illustrating the course of the steamship *Birma* on the memorable morning of the 15th inst., and the approximate location of the disaster. The ice-floe was approached by us from the south-west until we reached the point marked X, when it was obvious that the location given must be wrong. We then saw the *Carpathia* on the north-easterly [sic?] side of the floe, and, being asked merely to stand by, and seeing the vessel in picking up the boats with the survivors, we circled around the floe, first to the south, in order to avoid being crushed by the ice; then, after turning the lower corner, we turned north-eastward, up to the point marked XX, which is the spot on which the *Carpathia* "stood" while picking up the boats.

When we reached the *Carpathia* men of her crew were still in the rigging, keeping a vigorous outlook for further boats, and she steamed in a circle while we were within hailing distance, then she turned to the west at full speed, and as our question, whether some boats were still missing, was not met with a reply, and the constant order by the Marconi operator to "Shut up" could only convey the one thought that the ship was trying to talk with the Cape Race station, and our "cutting in" would "jam" her instruments, we steamed back to our course.

A traced-over reproduction of the hand-drawn "rude cart" referred to by Walters is shown below. It must be emphasized that the details that were drawn on this chart were very rough, especially those concerning the ice floe region, the position of *Carpathia* as marked by the double Xs, and the length and route taken by *Birma* to reach *Carpathia*. For reference, the now known location of the wreck site (shown by a "+" sign) was added to the diagram.



The position of *Carpathia* as marked on this roughly drawn chart is certainly too far east of where the wreckage was at the time *Carpathia* departed the region. Considering the set and drift of *Titanic's* wreckage since the ship foundered,⁴⁴ the position of *Carpathia* would have been close to 41°36'N, 50°00'W when she started to depart the scene of the disaster at 8:50am, *Carpathia* time.⁴⁵

In a wireless message sent at 4:00pm EST April 15 to *Olympic*, *Carpathia* reported that the south point of the pack ice extended down to latitude 41° 16'N, and *Olympic* was told that it was not wise to attempt to go north until reaching longitude 49° 30'W as there were many icebergs, large and small, amongst the pack ice and to the eastward.⁴⁶ *Carpathia's* Capt. Rostron also testified that the pack ice trended from NW to SE on its eastern side in the vicinity where he picked up *Titanic's* lifeboats.⁴⁷ On the western side, the ice trended down SSE then south and southwest. In some places it was reported to be about 12 miles thick.⁴⁸

The southern extent of the pack ice reached a good 20 miles south of the latitude where *Carpathia* was when she departed the scene. At 13 knots, it would take a ship like *Birma* over an hour and a half to go 20 miles south if she was able to go due south. However, with the ice extending first southward and then jutting out southwestward from where *Birma* was on the western side of the pack, it would take her 2 ½ to 3 hours just to get to the westernmost point near the southern end. The time it would take to go around the pack to where *Carpathia* was when she was picking up the boats is obviously far too great to get there before *Carpathia* departed.



Ice field seen from *Carpathia* on the morning of April 15, 1912. (National Archives.)

⁴⁴ Samuel Halpern, "Collision Point," *GLTS* website, http://www.gltts.org/articles/halpern/collision_point.html.

⁴⁵ Rostron, AI p. 33. The time would be *Carpathia* ATS. On *Birma*, it would be about 8:40am.

⁴⁶ PV SS *Olympic*.

⁴⁷ Rostron, BI 25501.

⁴⁸ Lawrence Beesley wrote in his book, *The Loss of the SS Titanic*: "We learnt afterwards the field was nearly seventy miles long and twelve miles wide, and had lain between us and the *Birma* on her way to the rescue."

We know that when *Carpathia* left the scene of the wreckage, *Californian*, which had arrived next to *Carpathia* at 8:30am, was left to search the area following *Carpathia*'s departure. *Californian* herself departed the scene about 2 ½ hours after *Carpathia* did.

So a few burning questions still remain:

1. When and where was *Birma* when she allegedly first sighted *Carpathia*?
2. How long did she take for her to get around the pack ice?
3. Where and when were the two ships when they came within hailing distance of each other, if they ever did?

What we can say in answer to the first question is that *Birma* apparently came relatively close to the scene of the wreckage but on the far western side about the time *Carpathia* was about to depart. *Carpathia*'s Capt. Rostron testified:⁴⁹

At 8:30 all the people were on board. I asked for the purser, and told him that I wanted to hold a service, a short prayer of thankfulness for those rescued and a short burial service for those who were lost...While they were holding the service, I was on the bridge, of course, and I maneuvered around the scene of the wreckage. We saw nothing except one body...I was cruising all around the vicinity of the disaster...[about] half an hour...The wind and sea were then beginning to get up. There was a moderate breeze blowing then, and a little slop of the sea...At 8.50, I think it was, when I put on full speed to come back.

So according to Rostron, *Carpathia*, was cruising around the scene between about 8:30 and 8:50am, looking for more survivors; a story that somewhat matches what Charles Walters described.

However, we had previously noted that *Mount Temple*'s Capt. Moore testified that he sighted *Birma* first coming up over the horizon "very fast" around 8am. He said he first saw her smoke and then her masts and yellow funnel. Assuming that the top of *Birma*'s funnel had just come up over the horizon at that time, the distance between these two ships would have been about 18-19 nautical miles.⁵⁰ An hour later, at 14 knots, she would have closed the distance to about 4-5 miles away if she was heading directly toward *Mount Temple*. But *Mount Temple* was on the western side of the pack ice and a few miles to the north of where *Carpathia* was stopped. *Carpathia* was 2 to 3 miles from the eastern edge of the ice which itself was about 5 to 6 miles wide in that region.

Coming up from the southwest, *Birma* was probably averaging much less than 14 knots over ground as she came closer to the CQD position. Like all the other ships that came into that region, her progress was affected by the convergence of two currents, first the Gulf stream taking her more eastward initially when she was down at latitude 40° 48'N while heading eastward toward the eastbound corner, and then a strong Labrador current setting her southward and slightly westward as she came closer to where the icebergs and pack ice were seen. It is very likely that *Birma* sighted *Carpathia*, or the smoke from her funnel, over on the eastern side of the pack about 8:30am, soon after hearing from *Californian* that *Carpathia* picked up 20 boat loads

⁴⁹ Rostron, AI pp. 22-33.

⁵⁰ *Birma*'s single yellow funnel reached a height of about 90-100 feet above the ship's waterline. The height of eye on the bridge of *Mount Temple* would be about 50 feet above the waterline. The distance between the two ships comes from the geographic range table.

of survivors. It is also likely that she then headed eastward toward *Carpathia*, only to be blocked by a greater quantity of ice as she approached closer. *Carpathia* would have been seen circling around the area of the wreckage on the other side of the pack before departing the area southward close to 9am.

As *Birma* got closer to where *Carpathia* was, they tried to get more information from her by wireless. However, *Carpathia's* wireless operator, Harold Cottam, was under strict orders from Capt. Rostron not to communicate with other vessels except under his authority from the very beginning.⁵¹ Cottam refused to response to *Birma's* requests for information, and they were told to "shut up" several times, just like *Californian* was, because they were interfering with *Carpathia's* attempt to communicate with *Baltic*.

As recorded in *Birma's* wireless log,

8:30 MPA [*Carpathia*] refuses information.

Having been rebuked, and seeing *Carpathia* apparently under way around 9am, Capt. Stulping decided to return to their course by heading down and around the southern point of the pack ice instead of trying to force his way across. An hour later, about 10am with 13 miles behind them, they still found themselves amongst many icebergs on her way southward.

10.0 Large quantity of bergs large and small in district.

Throughout all this, we must keep in mind that for *Carpathia* to return to New York without cutting across the pack ice, she first had to go southeastward and then southward before turning westward as the ice trended to the SE from the area of the wreckage on the eastern side of that vast ice floe.⁵² For *Birma* to resume her course eastward without cutting across the pack ice, she had to first go south and then southwestward to get around the southernmost point of the pack. The two vessels should have crossed close to each other at some point at the southern end of the pack heading in opposite directions.

In his memorandum to the parent company of the Russian-American Line, Joseph Cannon wrote:

On arrival the following morning at the position given by *Titanic* a ship was seen some distance off, the ship in question being the SS *Carpathia*. On nearing her a message was sent by our Captain asking the Captain of *Carpathia* if he need any assistance or stores, the reply received from *Carpathia* was "shut up" which was reported to Captain Stulpin. We then steamed on our voyage.

When did this event take place? In *Birma's* wireless log we find the following entry:

11.0 Call MPA who has picked up 20 boats. ask if they need assistance or stores. told to shut up and stand by.

According to *Birma's* wireless log, this wireless exchange took place about 11:00am, a good two

⁵¹ Rostron, AI. p. 32. "From the very commencement I took charge of the whole thing and issued orders that every message sent would be sent under my authority, and no message was to be sent unless authorized by me."

⁵² In his report to the general manager of the Cunard line on April 19, Capt. Rostron wrote: "the ice field trending from N.W. round W. and S. to S.E., as far as we could see either way."

hours *after* Capt. Rostron departed the area of the wreckage leaving *Californian* behind to continue the search. Unfortunately, for reasons previously stated, we cannot assume that the 11:00am time that was logged for this message exchange was precise. It could have been somewhat later.

In an article detailing the rescue of *Titanic's* survivors for Scribner's Magazine in 1913, *Carpathia's* Capt. Rostron wrote the following:⁵³

I decided to return to New York, as I considered New York the only port possible under the circumstances.

We soon found our passage blocked by a tremendous ice-field. Of course we had seen this ice-field before, but did not know how compact it was, nor the extent of it. In the field were many bergs from one hundred to one hundred and fifty feet high, and the general mass of the ice perhaps six to twelve feet high. We sailed round this ice-pack for nearly four hours – quite fifty-six miles – before we could set our course for New York. We also passed several large bergs clear of the pack.

About noon we passed the Russian steamer *Burmah* [sic], bound east. We saw him attempt to cut through the ice-pack, but he had to turn out again. And I don't blame him, either.

We know from Capt. Rostron that the ice field in the vicinity of the wreckage trended from NW to SE. But it extended well to the south beyond the horizon reaching down to a reported latitude of 41°16'N. *Carpathia* had to first go southeastward before she could turn southward and then westward. Eventually, she was able to head due west upon reaching a latitude of 41°15'N, one mile south of the pack ice, and we know she was at longitude 50°20'W about 3 hours after departing the wreckage. Local apparent noon came for *Carpathia* at 10:22am EST that Monday morning, and her noontime position works out to be at 41° 15'N, 50° 28'W.⁵⁴ At that time, she would have had relatively open water ahead of her while heading due west at 14 knots.⁵⁵

Birma was coming up from the southwest toward the CQD location. She was on the western side of the pack ice. If she came close to the latitude of *Carpathia* near the western edge of the ice at the time that Rostron turned to leave the scene of the wreckage, then she too would have to travel over a circuitous route to get around the pack ice taking a path similar to what was drawn in that "rude chart" that Charles Walters referred to. The distance over the route traveled to get to the southernmost point would take her about the same time it took *Carpathia* coming from the eastern side. They would meet as Rostron said close to noon, if not a little before.

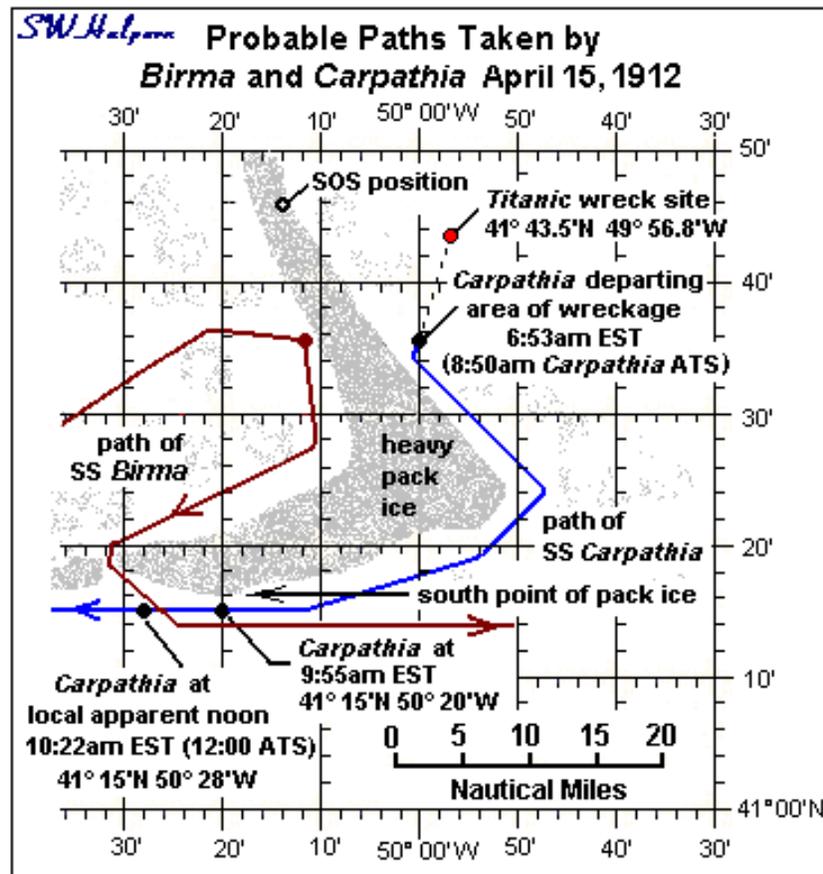
The chart below depicts the approximate movements of *Carpathia* and *Birma* after taking into account the speeds of both vessels, the approximate position of *Carpathia* when she would have departed the wreckage, the reported trending of the pack ice, the reported southernmost

⁵³ Capt. A. H. Rostron, "The Rescue of the 'Titanic' Survivors," Scribner's Magazine, Vol. 53, Jan-Jun 1913, p. 354.

⁵⁴ *Carpathia's* clocks would have been put back before noon as she was then advancing westward. Her clock's would have been set 1 hour 38 minutes ahead of New York at that time.

⁵⁵ *Carpathia* reported that she was at 41°15'N, 51°45'W at 2:30pm EST and steering 267° true for New York. (Ref: PV SS *Olympic* in message received from *Carpathia* at 3:15pm EST April 15.) At a reported 14 knots, she would have been at longitude 50°20'W at 9:55am EST, a distance of 64 nautical miles back from her 2:30pm EST reported position, and at the same latitude of 41°15'N. *Carpathia's* position, 41°15'N, 51°20'W, was given to the White Star Line by Cunard (AI, p. 183-184.) The time written was 7:55am EST, but this apparently was a mistake for *Carpathia* could not have been down to that location only an hour after she departed the area of the wreckage. What does work out is a time of 9:55am EST for that location based on speed and distance made good to her 2:30pm EST reported position.

point of the pack, *Carpathia's* 2:30pm EST reported position for April 15, and the general route taken by *Birma* to get around the pack ice.



So it seems that the answers to our questions are:

1. *Birma* probably first sighted *Carpathia* from the western side of the ice field after *Carpathia* picked up the last boat and passengers and was circling the area before heading away from the scene. Not responding to their requests for information, and seeing *Carpathia* was departing the scene, *Birma* then headed southward to go around the pack ice that blocked her path.
2. It probably took *Birma* close to 3 hours to get around to the southern end of the pack ice. When she got down in that vicinity she would have sighted *Carpathia* coming from the opposite direction. We know that she sent a wireless message to *Carpathia* offering assistance and stores some time before, but was told to shut up and stand by.
3. *Birma* and *Carpathia* passed each other heading in opposite directions some time close to noon as recalled by Capt. Rostron. Although he mentioned in his 1913 article that he at one point saw *Birma* trying to cut across the ice, he did not specifically say when exactly that was. Both ships would probably have been within a mile apart when they passed each other.

Acknowledgement

I would like to thank Paul Lee for sharing a scan of the original handwritten wireless log of the SS *Birma* with me, and for discussing the various entries written on it. I would also like to thank George Behe for reviewing this article, and for his many helpful comments and suggestions.

Appendix A – Transcribed Extract From *Birma's* Handwritten Wireless Log

Below is a transcribed extract from the handwritten wireless log of the SS *Birma*:

7.0 DDA [SS *Kaiserin Augusta Victoria*] calls DUS [SS *United States*] OK.
9.0 Standing by.
10.20 Preparing for Press. Position of *Birma* 40 48 N. 52 13 W.
11.50 Receiving Press, interrupted by Distress Calls
12.0 from MGY [*Titanic*]. Answering, positions exchanged
12.30 & going to aid. reports sinking fast. Lat 41.46 n. [Long 50.14 w.]
midnight
AM [April 15]
1.0 Ascertained from ships in rear of us that MGY is *Titanic*. Motor Generator working well under strain.
*
2.0 Standing by taking turns with Mr. Ward operator of *Estonia* who is on board *Birma*. No further signals from MGY
2.30 Several ships calling MGY, no reply. fear it is serious. Spoke MGY [sic -MGN?] going full speed. Spoke DFT (Frankfurt) port of Reg. Breme[n] for confirmation of *Titanic*. DFT states it is *Titanic*.
3.20 MGT [sic - MGN?] calls SBY [sic - SBA] requires to know if any further news of *Titanic*. Nil.
* → at 1.30 AM MGY states passengers are being put in boats. Calling MGY at intervals. No reply after 2.0 AM.
[continued from next page of log]
AM
April 15
3.35 Called MGY. no reply.
4.0 “ “ “ “
4.10 DFT calls SBA [*Birma*], asks if we can hear MGY. Cannot hear any signals. Expect to reach MGY about 7.0.
5.0 MGN spoke SBA. Exchanged positions & inquiries for MGY
6.0 MWL [*Californian*] calls, proceeding for Boston, informs she is only 15 miles away from position given by *Titanic*. *Birma* 22 miles.
6.30 MWL calls Cq. SBA answers inquiring for *Titanic*. no news.

- 7.15 Sight icebergs. warn ships aft of us ...[unreadable] Titanic believed to be in sight (prove to [be] iceberg instead).
- 7.30 No further calls.
- 8.0 Call CQ. MWL answers. says MPA (Carpathia) has picked up 20 Boat loads.
- 8.30 MPA refuses information.
- 9.0 general calls in local area
- 10.0 Large quantity of bergs large and small in district.
- 10.30 No further sigs re Titanic.
- 11.0 Call MPA who has picked up 20 boats. ask if they need assistance or stores. told to shut up and stand by.
- 11.30 MPA calls Baltic. Baltic sigs very faint.
- 12.0 Standing by. nil.
- PM*
- 2.0 Nil.
- 2.30 Spoke DFT, exchanged positions, asks us what she should do, to stand by or go on: Told her it was no use, we saw nothing & understood MPA had picked up all possible to be seen.
- 3.0 Spoke MGN. Asks if any news. Nil. OK.
- 4.0 Spoke DFT for any further news.
- 4.10 Off JLC [Joseph L. Cannon]
- 8.0 Nil.
- 9.0 Standing by.