

# Response by Family Friend Paul Wilson to Maritime NZ

July 20, 2014

Gentleman,

Regarding your report:

<http://www.maritimenz.govt.nz/news/media-releases-2014/20140717a.asp>

FYI, I am by profession an avionics engineer, experienced offshore sailor, a friend of Curly Carswell and a friend of Evi Nemeth. I am familiar with the Nina Search, having been involved (mainly in the background) from an early stage. I contacted RCCNZ several times during the search and have been in regular contact with the families throughout this ordeal, both by phone and by email.

I was extremely disappointed in the independent review regarding the search for the yacht Nina.

For the reviewer to say that RCCNZ used the Iridium position because it was the best source for a last known position (LKP) completely misses the fact that the Iridium positions are wildly inaccurate and unreliable. The statement in the report that Iridium claims a +/- accuracy of 10kms 90% of the time for 90% of subscribers is simply not true. It really depends on satellite distance and geometry. The errors can be much higher in the east and west direction and this was proven when two Iridium positions taken from the network for Nina were taken 6 minutes apart but disagreed by over 600 miles. Please see attached for information that was given to the reviewer.

Source [http://www.nalresearch.com/NetRef\\_IridiumSubscriberUnit.html](http://www.nalresearch.com/NetRef_IridiumSubscriberUnit.html) (Emphasis mine.)

*The Iridium network can locate an ISU to within 10 km only about 78% of the time. The location accuracy can be much higher; however, the information is not available to commercial users. The so-called error ellipse can have a large eccentricity with the major axis oriented in the azimuth dimension and the minor axis oriented in the radial dimension. The position of the ISU in the radial dimension relative to the satellite can almost always be determined to within 10 km with just one measurement. Errors in the azimuth dimension relative to the satellite are largest along the satellite's ground path and tend to increase with distance from the satellite. Geo-location errors in the east-west dimension, therefore, are sometimes more than 100 times greater than in the north-south dimension.*

In my opinion, far too much importance is placed on the missing Iridium message received on June 4th at 1150 and the positions derived by the Iridium satellites. The missing message at 1150 was only sent approximately 2 hours after the last text message from Evi Nemeth at 0939 (or 0953) and really only had the added information that the

sails were shredded. There was much confusion with the time zone changes which made many people think this message came after the storm. This is unfortunate and could have been easily prevented. I was told that the missing 1150 text apparently had no position and was given what I was told was the whole message. I assumed that the last text message with a position was taken at 0939. This is my mistake but it is only 2 hours different so the point is mute anyway. From reading the report, it is apparent to me now that RCCNZ actually had an Iridium position from this message since they were actually using 1150 as a last known contact time early on in the search. RCCNZ were using the time of 1150 (2350 UTC) in their notice to shipping in June, far before the missing undelivered text became available. I can only conclude that the "missing" message of 1150 actually had an iridium position with it all along and RCCNZ had this information early in the search. As the report says, this undelivered "missing message" and its erroneous Iridium position was the LKP used for the search according to RCCNZ. The fact that it was undelivered or "missing" had little impact on the decision on where to do the search.

**from\_unixtime(received\_time): 2013-06-03 23:50:25**

**status: UNDELIVERABLE**

**src\_addr: [phone number]**

**dest\_addr: \*2**

**cshort\_message: THANKS STORM SAILS SHREDDED LAST NIGHT, NOW BARE POLES.  
GOING 4KT 310DEG WILL UPDATE COURSE INFO @ 6PM**

Please note that the position given in the report for the SPOT position on Jun 2 at 1248 local time is incorrect. It is not 33 59 S 168 52 E. If that was what RCCNZ was using they made a mistake. The conversion to minutes was done incorrectly. The actual message was as follows which corrects to 33 deg 35.9 min S 168 deg 31.5 min E. This was in the families submission to the reviewer in Appendix 1.

```
Nina 04 ; Local Time; 02 Jun- 1248
wondy-spot
Latitude:-33.59926
Longitude:168.52466
GPS location Date/Time:06/02/2013 00:48:12 GMT
Message:Evi and Nina are OK.
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The report of a position at 0953 is new to me despite many emails both to the families, RCCNZ, and Bob McDavitt. I can find no record of it in any correspondence and there doesn't appear to be an Iridium position that matches it. Having said that, it is only 1 mile in distance and 4 minutes in time different from the message at 0939. In other words, it

doesn't really matter. If one was SMS text, and one was email, the difference in time and/or position could be explained by delays in a mail server. So it is not necessarily a mistake by Evi Nemeth.

Please note that SAR authorities in Australia were first contacted about concerns of Nina before June 14th. According to the timeline and the families submission they were contacted on June 9th by Curly Carswell. At this point, Curly felt Nina should have been in Australia already or near the coast. All communications had stopped and he was concerned so he was asking for a health and welfare check via shipping. It was unfortunate that RCCNZ was not contacted until later but I disagree with RCCNZ's analysis of Nina's speed and expected time of arrival. They had obviously had a slow trip up to the time of the storm but to say that Nina was not overdue until Jun 25th or 26th is not in keeping with Nina's history and record.

Once the search was active, I called RCCNZ on the phone a few times for clarification about the LKP early in the search but I got a different story every time depending on who answered the phone. Rather than tell me the wrong information over the phone, it would have been much more useful to say that they would check in to it and get back to me. I was forced to seek an email clarification so that I could get a considered response in writing. Even this took several attempts. RCCNZ finally admitted to me that they were using the Iridium position as a LKP on June 30th via email. At this point I became even more concerned that something was wrong. I could never understand why they were searching NE of NZ. I couldn't imagine Nina being there. So I gathered data, plotted it, and sent my concerns to RCCNZ along with the weather map and data from Bob McDavitt. This was sent very early in the morning on July 2nd. I don't know if it was coincidence or not but RCCNZ changed tactics later that day. By the time they switched the LKP to Evi's text position, they had already been searching for 7 days. Note that according to the report, RCCNZ had all of the Iridium positions from all of the messages on June 29th. Even if they were ignorant of the inaccuracies of Iridium before, it should have become apparent to them then. All they would have to do is plot the positions which I assume they would have done. You can only conclude from this that given the information they had, the Search Areas 6 and 7 (page 77) taken on June 30th and July 1st were a total waste of time. Also, I don't understand how Search Area 1 (a large area of 281,000 sq km) could be considered in the overall tally in the search for Nina. It was really just a training exercise as the Orion returned from the Cook Islands. Does anyone really think Nina could have been near the Cook Islands? All of this information is in the families submission. If anything is missing or gaps need filling, I can supply it on request but the reviewer says he had all correspondence with RCCNZ so I assume it is all on record.

I only say all of this to voice my frustration over all of these confused messages and the decision process that occurred in determining the LKP. It is obvious in the report. Ian Wootten did a fantastic job of simplifying the timeline in the families submission in Appendix 1. I believe this is a format that is easier to understand. I can see how the staff at RCCNZ themselves could get confused at the time and gave me incorrect information both over the phone and via email. I can see how the families got

frustrated. I think a great deal could be done to simplify communications in the future.

But back to the most important point. In reality, the geo-derived Iridium positions are a red herring and deflect you away from the hard truth. It is important to not get sidetracked. The important thing is that the Iridium positions are many hundreds of miles out so therefore Evi Nemeth's text message should have been taken as a LKP from day one. While the text information from the undelivered message was another piece to the puzzle and Iridium definitely should have given it sooner (this must be improved), it should not have and would not have influenced the choice of search area. Although it was very frustrating that Iridium was so slow to act, the only importance of this message was that the sails were shredded. They were still going more or less in the same direction as 2 hours before. I therefore believe that saying or implying that RCCNZ switched tactics after July 2nd or 3rd because of a missing text is misleading and disingenuous. It turns out that RCCNZ had the position from this message anyway! We know this because they used the time and position of the message 1150 (2350 UTC) in their notice to shipping in mid June. The report confirms this. Frustratingly, even when they switched further west to Evi's text position after July 2nd, the notice to mariners from Aus kept showing the Iridium LKP for several days. It took emails and prompts from me to get it changed. Nobody seemed to care. I was told that all the ships knew about Nina and the position didn't really matter since ships keep a good look out anyway. Really?

From looking at the weather map, further confirmation is obtained that Evi's text position at 0939 (or 953) was correct and that the geo-derived Iridium positions were wrong. Using the Iridium positions ignored the weather patterns of the storm. The storm was very intense but relatively concentrated. The Iridium position was too far east by 220 miles and the weather at that position would not have matched the weather they were experiencing at the time of the storm. Is this focus on an undelivered text from a message a deliberate attempt to deflect attention from the incorrect importance placed on the use of the erroneous Iridium positions?

Sorry to repeat, but Evi's last text messages on June 4th at 0939 (or 0953) saying ANY WEATHER FOR NINA? S 33 54 E 165 18 was the only reliable position. Although it was a manual text or email, it was given by a meticulous engineer and experienced navigator who was not acting irrational or panicked. Anyone who looks at the attached files and the wild Iridium positions or looks in your own report and sees that the Iridium position taken at 0939 showed a speed for Nina of 29.5 knots must come to the same conclusion. Iridium positions are not reliable; in fact, they are grossly inaccurate.

In summary, looking at the data, there can only be only one conclusion. Despite all the information available at the time, the staff on hand, and the resources available, RCCNZ failed to see the big picture. To put it bluntly, RCCNZ didn't know what they were doing when it came to Iridium positions and they dropped the ball. All of this information was given to the "independent" reviewer by the families. How could the reviewer not come to the conclusion that RCCNZ must discount all satellite derived Iridium positions for all searches in the future? Instead, it totally skips it until finally on page 36 where it

acknowledges that "*analysis raises deep suspicion on the reliability of the Iridium positions*". No kidding! The report then glosses over it further by coming to the conclusion "*RCCNZ needs to provide in the SOP an Annex or Aide Memoir detailing how to best deal with all the issues associated with determining and ranking the Last Known Positions*." Could the language be any more obtuse?

The report fails to state in a clear way that the satellite Iridium positions should never have been used in the search. Using the wrong positions made them search in the wrong area (220 miles too far east) where the wind and currents were different, they used the wrong drift modeling, they wasted valuable time and resources and tragically, it may have cost lives. They searched in areas at a critical time where there was little hope of finding Nina. It was a severe storm and all communications had suddenly stopped. Days and weeks went by. I can't help but think the search areas in your report labeled 1, 2, 6, and 7 were a total waste of time, a waste of resources and a waste of taxpayers money. Starting the plane search on June 25th a full 21 days(!) after the storm for an old but fast racing yacht was far too late. There may have been a totally different outcome if RCCNZ had acted sooner and in the right area. Is this worth praise?

So what can we learn from this? I honestly think it is more important to learn from our mistakes than place blame. RCCNZ has a wonderful reputation and it is not my intention to run RCCNZ under a bus. But why did RCCNZ make these mistakes? Should it not be a priority to advise or alert others of this mistake? Which is more important, "saving face" or making sure that this never happens again? As I said previously, and as the family said in their submission to the reviewer, *this was a known flaw with the Iridium satellite network*. All you need to do is Google "Iridium position accuracy". Iridium is a communications network, it was never designed as a navigation network. If anybody should have known about this, it should have been a search organization like RCCNZ. Was their training adequate? Were they misinformed by Iridium? If so, are other rescue organizations currently misinformed? Is there a forum with other rescue organizations around the world to spread information and prevent these kind of problems happening again? I am mystified how something so obvious and important can be so casually mentioned.

In conclusion it is my (and others) opinion that RCCNZ made serious mistakes when it came to the search for Nina. Like I said, this is hardly worthy of praise. I know of some people who are so upset even a year later that they can hardly talk about it. A headline saying RCCNZ went "beyond" or "further" than the requirements of what is expected is media spin unworthy of a serious organization and doesn't help anyone. It really bothers me that the mainstream press is repeating this like a parrot and the truth will be lost. This will not spur people to read the fine print and people need to learn from this. It would be an absolute tragedy if not acknowledging such serious mistakes cost lives in the future.

I am absolutely stunned that the reviewer has said that RCCNZ acted appropriately when it seems so obvious they didn't. Sadly, I can't help but wonder how "independent" a reviewer can be when the person doing the review would have a history and a working relationship with RCCNZ. Maybe a reviewer that did not personally know the parties

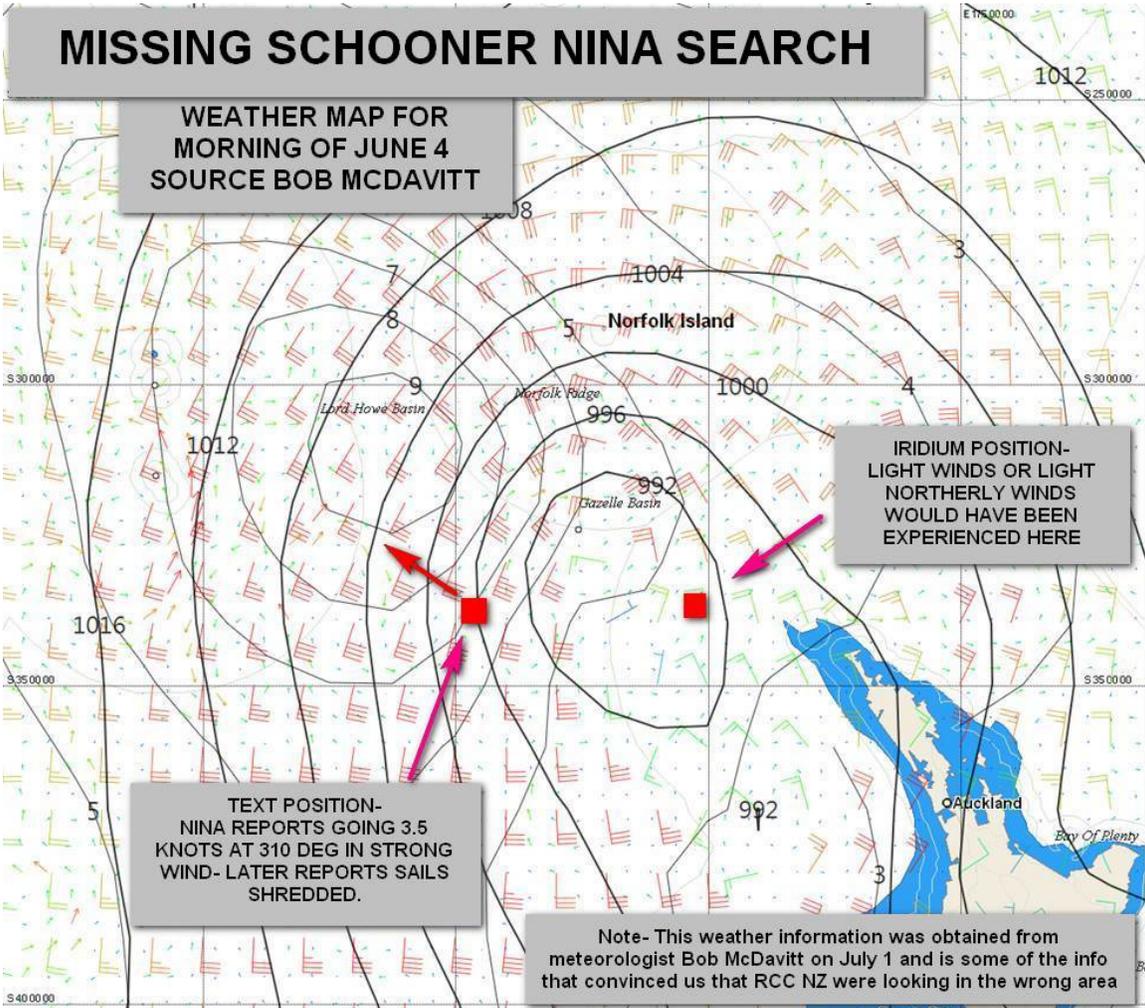
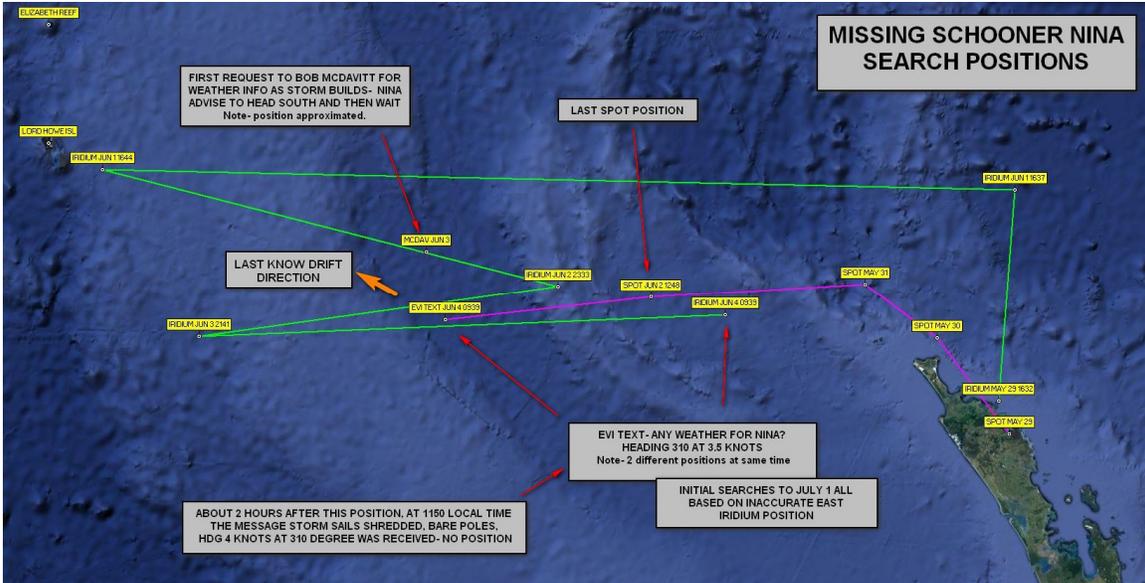
involved would have been more appropriate and not obfuscate the truth.

I reserve judgement and comment on other parts of the report. My wish right now is to focus on this most glaring of errors.

Please contact me if you wish to discuss further.

Regards,

Paul Wilson  
New Plymouth, NZ.



# Schooner Nina Search.

# Photo 1

