Automated OCS Testing Report at the Bacardi Invitational

Requesting Use

The US Snipe Class requested and was granted a waiver to Snipe Class rule 5.1 which governs allowable electronics. The request was:

> *Recently Augie Diaz brought up the idea of testing the Vakaros Starting System at the Bacardi Invitational Regatta. The event race committee is utilizing the system for the other classes sailing (with different data requirements) and also requested that we use it as outlined below.*
>
> *We feel the Bacardi Invitational is a good event to test the system as it is considered a "fun" regatta with lots of social events and is neither part of any other Snipe class series nor is it a qualifying event for any subsequent Snipe championship.*
>
> *We propose to use the Atlas 2 system with Race Sense showing ONLY boat heading and yes/no OCS at the start. No other data will be shown or recorded.*
>
> *Furthermore Augie has purchased a number of Atlas 2 units so unit will be available to rent or if someone can not afford it, one will be provided to them.*
>
> *This is the exact scenario that has been recently discussed by the Technical Committee and is being brought forward this year to the board.*
>
> *Under RRS 87, we request permission to run this test. At the end of the event I will provide the Class with a report on how the test went (pros, cons, what worked, what didn't). As the event is coming up in two days we request immediate action on this. I sincerely apologize for the lateness of the request.*

As noted in the request, only a limited set of device functions would be enabled. The Vakaros system is configurable and supports the concept of “profiles” that enable only a specific set of functions. The Snipe Class requested a profile that contains only these functions:

- Heading
- Timer
- OCS notification (yes/no) at the start

In addition, it was requested that we survey competitors about their experience and report the results. This document satisfies this requirement.

Set Up

All units were configured with this profile as well as the actual mounting location on the boat. Most boats had it mounted to a TackTick mount thanks to an adapter built and provided by Miami Fleet member Charles Green, although some boats had them mounted to the mast. The distance from the bow to the unit was then measured for each boat manufacturer (Jibe Tech,

Persson, DB etc) and location and entered into the Race Sense system. This ensures a common understanding of the system as to the location of each boat's bow. Furthermore, bow numbers were also issued and attached to each boat for visual identification.

System Use

The process for each race was as follows:

1. The RC started the timer at some time greater than the warning signal, typically about 10 minutes.
2. At various times the RC displayed the prep flag (they did not have a class flag so the visuals were not per RRS 26).
3. At the start, the Vakaros system either displays a set of green LEDs or a large "OCS" on the display.
4. If you receive the green LEDs, you have started properly and can continue. If you receive the "OCS" you return and after completely clearing the line the "OCS" is replaced with"CLEAR".
5. At the start, the timer begins to count up to show the elapsed race time.
6. When the boat crosses the line, the word "FINISH" is displayed on the unit.

Comments and Lessons Learned

In general the test was very successful. Most people thought it was a positive experience and it provided for faster and more fair races. There was only 1 unit (of 18) that experienced a glitch in only 1 race. There were a handful of competitors called OCS but all exonerated themselves.

The main concerns about the system are the total and ongoing costs (there is a subscription fee to use Race Sense 2) and the fact that it is early in the technology cycle and that there are some improvements that should be made to the hardware and software.

Lastly, it is important that race committees not become dependent on the technology because glitches may occur and they should not use the technology in place of good race management practices (keeping a square line, observing the start/finish line manually etc).

This RC did not use any sound signals, either prior to or during the sequence. While the timer was started automatically, competitors found this awkward. While the NOR indicated visual signals would be used, the RC was inconsistent with use of flags per RRS 26. In the case of a device issue, this left competitors with no good starting reference.

Lesson: RRS 26 should be followed even with the use of this system both for a visual for competitors on the water and as a backup.

The NOR specified two “failure scenarios” and what competitors should do in these cases. If code flag “O” was displayed, it indicated the Race Sense System would not be used. If code flag “R” was displayed, it indicated all sailors should restart their units.

Lesson: Adequate contingencies need to be in place in case of failure of the technology. These flags should be unique and not overlap with other common flags used by the Snipe Class.

Lesson: If you need to restart your unit, ensure it is done in close proximity to the RC boat to ensure it adequately rejoins the network.

Survey Results

A Google Form was used to create a 10 question survey. The results will be updated as responses are received.

Question 1:

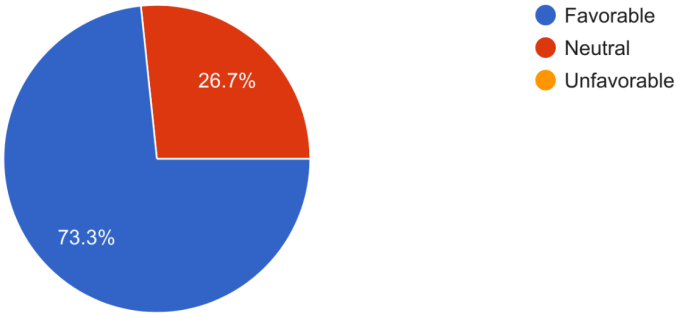
Your Name

1. Adam Field
2. Alex Pline
3. Andrew Watters
4. Taylor Scheuermann
5. Enrique Quintero
6. Charles Green
7. Evan Hoffmann
8. Greg Virgin
9. JC Hermus
10. Ryan Schubert
11. Amanda Kremer
12. Preston Senior
13. Gavin & Holly OHare
14. Peter Commette
15. Nikki Bruno

Question 2:

What was your overall experience with using Vakaros as a starting system?

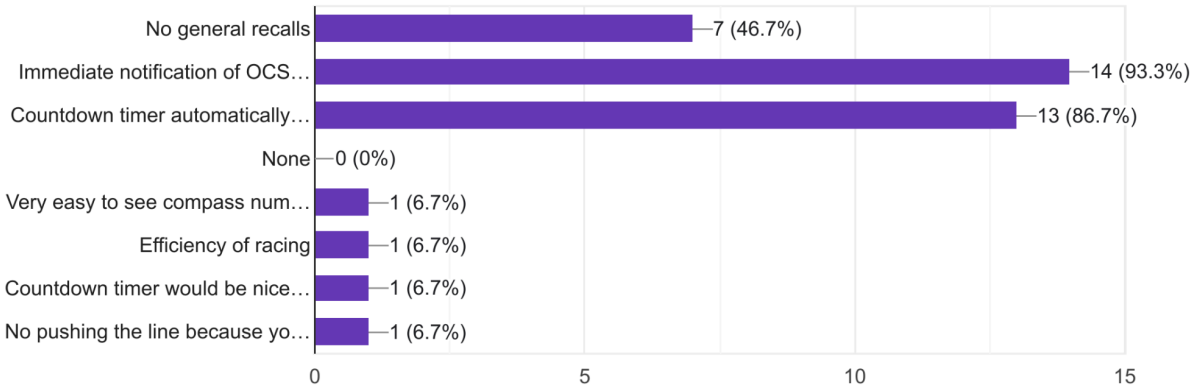
15 responses



Question 3:

In what ways did you think the racing experience was enhanced (check all that apply):

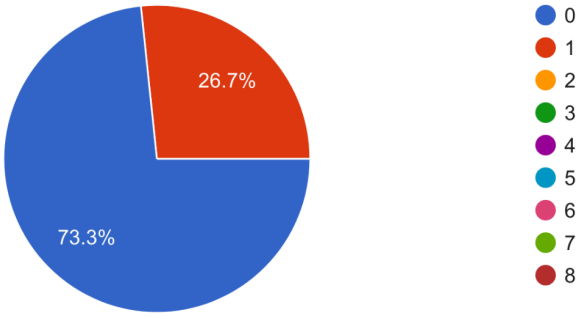
15 responses



Question 4:

How many times were you called over early in the 8 starts?

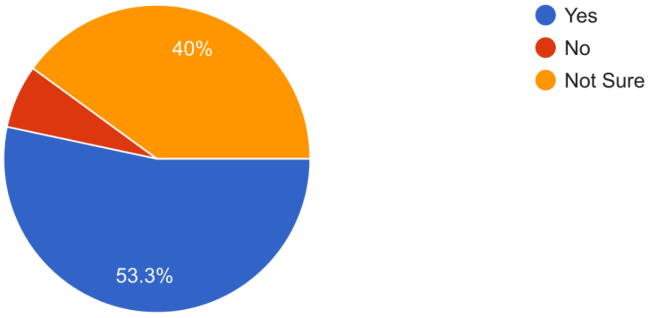
15 responses



Question 5:

In the 8 starts did you think the system called the line accurately?

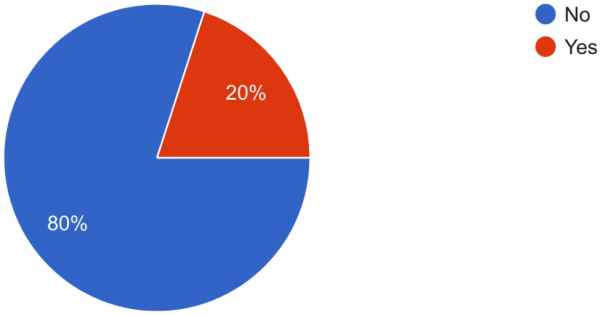
15 responses



Question 6:

Did you have any technical issues with your unit?

15 responses



If you had issues with your unit, please describe them:

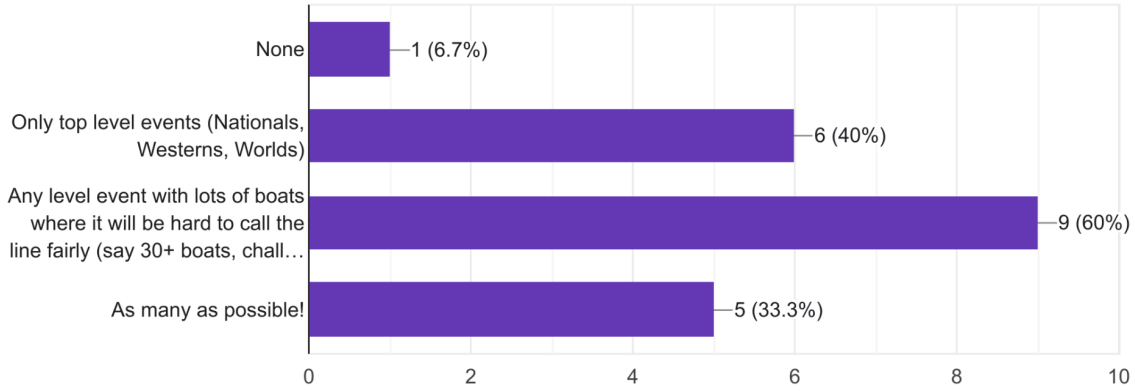
1. I think there is a delay to clear yourself. The time I was over I dipped WELL below the line. Sadly, I was fouled by Port tack boats that just decided to send it on port. (Race 3, the big lefty start/beat) Peter on the inside at the pin, Enrique sandwiched with Evan being the boat that I had to avoid contact with by tacking. I initially tried to dip below the line then, but I had to avoid contact with them. When I finally was able to tack and drive around and then dip, I felt like I really had to go below the line more than normal. As I kind of waited for a second for it to register, Green
2. Indicator lights not working. Battery status only showed empty even when charged.
3. Timer didn't start on one of the races, didn't even know we were in sequence until the whole fleet was spinning up and I asked somebody. Was told to restart it, which fair enough did work, but only like 20 seconds after go. I understand now to restart the unit closer to the committee boat the first time. It's no worries, I had a crew who'd never sailed dinghies before so its not like I was pushing the line on any of these. Great regatta, fun to try them out!

4. Countdown did not start even within close range of RC, had to restart it a few times and press random buttons to get it to connect. However we initially started the unit well away from the RC so seems to just be a connection delay?

Question 7:

If this or similar system were to be approved by the class, what types of events would you like to see it used (check any)?

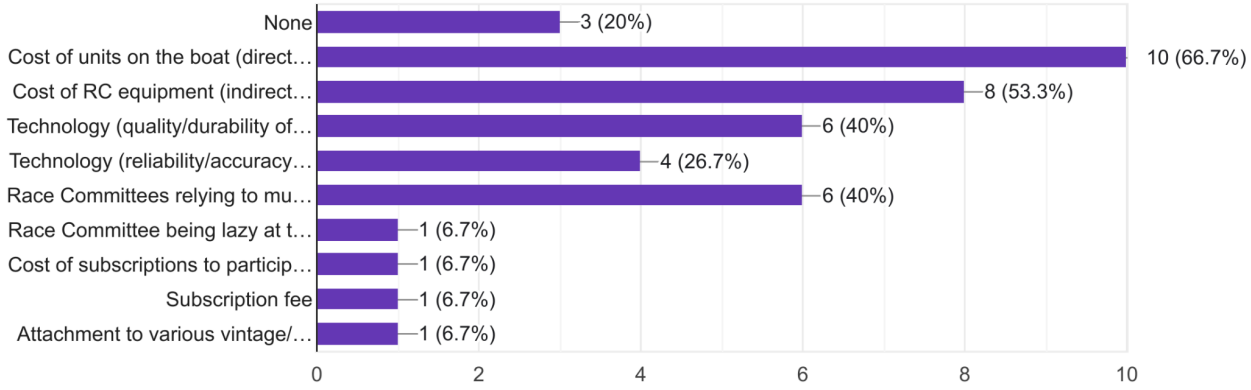
15 responses



Question 8:

What are the main concerns with using such a system in the future (check all that apply):

15 responses



If Other, please specify:

1. RC - flags and horns were not used during the Bacardi, as the RC was leaning upon the Vakaros device. It is unclear (as this was the first trial) whether this is typical of a RC using Vakaros, or whether this practice was only our RC. Also, it was unclear if RC was also calling the line for OCS

boats, as a secondary measure. It is unclear (as this was the first trial) whether this is typical of a RC using Vakaros, or whether this practice was only our RC.
2. Possible warranty issues. Vakaros is working with me. Outcome TBD.
3. Learning curve for RC to use. Change in technology down the road and what it would mean to have to upgrade. I can also see that there might be some who struggle with the technology and wouldn't feel comfortable.
4. Subscription fee that won't allow you to sail a fully owned racing boat.... because you didn't pay the subscription fee... for a product you already paid a lot for and only carries a 2 year warranty. Probably just a snipe / dinghy take, but once you split the initial cost over three years, tack on a subscription.
5. In other fleets I've used the device the line was not accurate but I did not experience that this weekend (granted we also started very very conservatively most races)

Question 9:

Please provide any other feedback, for or against or any other comments. For example, did you think it changed the game? If so, how?

1. I feel the combination of the technology being nascent, expensive, and anti-competitive in the sense that the class will need to opt for a single vendor is very problematic. And really who I think gets hurt by the class mandating such an expense is U30. If there were multiple vendors who could all interoperate, giving us optionality and competition, I would feel better about it. And as long as the technology is nascent we can let bigger, richer classes invest in improvement.
2. The introduction of technologies like Vakaros and Robomarks has not significantly improved racing, while considerably increasing costs. The true value of the Snipe fleet lies in its accessibility, similar to college sailing, and the overall quality of racing, which has contributed to its continued growth, especially in the U30 division. The main issue that Vakaros claims to address could be more effectively resolved through class rule changes, such as allowing for an earlier black flag. For those seeking more expensive fleets with Race Sense available during races, there are plenty of other options that provide that experience.
3. It was strange to not see signals or flags from the committee boat and rely fully on the equipment. It was nice to know if you were over early or not and be able to correct immediately.
4. More racing in a shorter time. Less frustration at general recalls. Less OCS results and less "U" and black flags. (Ernesto should love that!)
5. I thought it went very smoothly and there was no "pushing" of the line. Everyone was forced to try and start on the actual line rather than just stay up with the boats around them regardless of where the actual line was because there is no "hiding". This is much more fair.
6. The use of the device made racing very easy for sailors, and the Organizing Authority was able to limit the technological parameters that could be used (no pinging, no distance to line, etc.). Everyone had access to the same tools!
7. Having the Vakaros system levels the playing field, takes pressure off of the race committee from having to catch all boats that are over, and improves the overall flow of racing by having automated time. MUST HAVE
8. Even with possible distance errors the system is MUCH more reliable than a line spotter.
9. Starts definitely went smoothly. I think one consideration if we have the system is we also should pair it with radios so the RC can notify us if they see us on their end or not. Radio use was not something asked about in this survey but was also something different from usual we did at the Bacardi regatta. It would also be nice to have flags and horns in case of device failure. In the

Bacardi SIs there was a stipulation that if the device failed a boat would be scored DNS without grounds for redress and I'm not a fan of being forced to use a new tech that might fail and then be punished for it failing.

Question 10:

If additional performance data such as track, speed etc for all competitors were made available after the event to everyone, would you be in favor of publishing it?

15 responses