



## Can officials identify the difference of the “Caul” (Pealess) and Traditional Whistle?

COVID-19 has forced society to change: arrows on the floor, masks on your face, and 2 meters of distance from people with whom you do not live. Hand hygiene has become a very well discussed topic. Hockey has added “Points of Focus” to reduce the time players spend in proximity to each other. Dressing rooms have occupancy restrictions.

In the referee world, the NHL trialed the Fox 40 “Caul” whistle (black whistle to the right) during the Summer 2020 playoffs. According to Fox 40, the Caul has numerous benefits including a low profile, low weight, no pea to get stuck, and a similar decibel to a traditional whistle<sup>1</sup>. You can watch a brief video about the Caul on YouTube.<sup>2</sup>



The YouTube video is from 2013, therefore the Caul was not created for COVID-19. However, there is some suggestion that the Caul could be effective at reducing saliva (and germs) released into the air when blown compared to the traditional whistle with a pea (silver whistle to the right is a traditional whistle).

In theory this may be the case for two reasons. First, the Caul has an opening on the sides rather than the top; so moisture is shot to the side rather than up which may reduce the time the official’s saliva is in the air. Second, the Caul does not have a pea flipping around; therefore, there is less saliva being thrown.<sup>3</sup>

Another important question for officials is: how different will I sound on the ice if I use the Caul whistle? Officials want to blend into the game; if they have a different whistle from their peers, they may be noticed. The current research looks at this question.

### What was done?

On September 19<sup>th</sup> & 27<sup>th</sup>, 2020, 47 level 1 & 2 officials attended in-person certification clinics at Bell-MTS-Iceplex’s restaurant starting at 8:30am. The experimenter explained the vaguely research, asked the officials to close their eyes, and blew the Caul and the traditional whistle one time each<sup>4</sup>. The officials then answered 4 questions:

- 1) Which whistle sounds normal? Whistle 1 or Whistle 2?
- 2) Which whistle do you prefer the sound of? Whistle 1 or whistle 2?
- 3) Which whistle is the Caul? Whistle 1 or Whistle 2?

<sup>1</sup> Caul whistle is about 110 db and a traditional whistle is 120 db.

<sup>2</sup> <https://www.youtube.com/watch?v=ae78ckQMRhE>

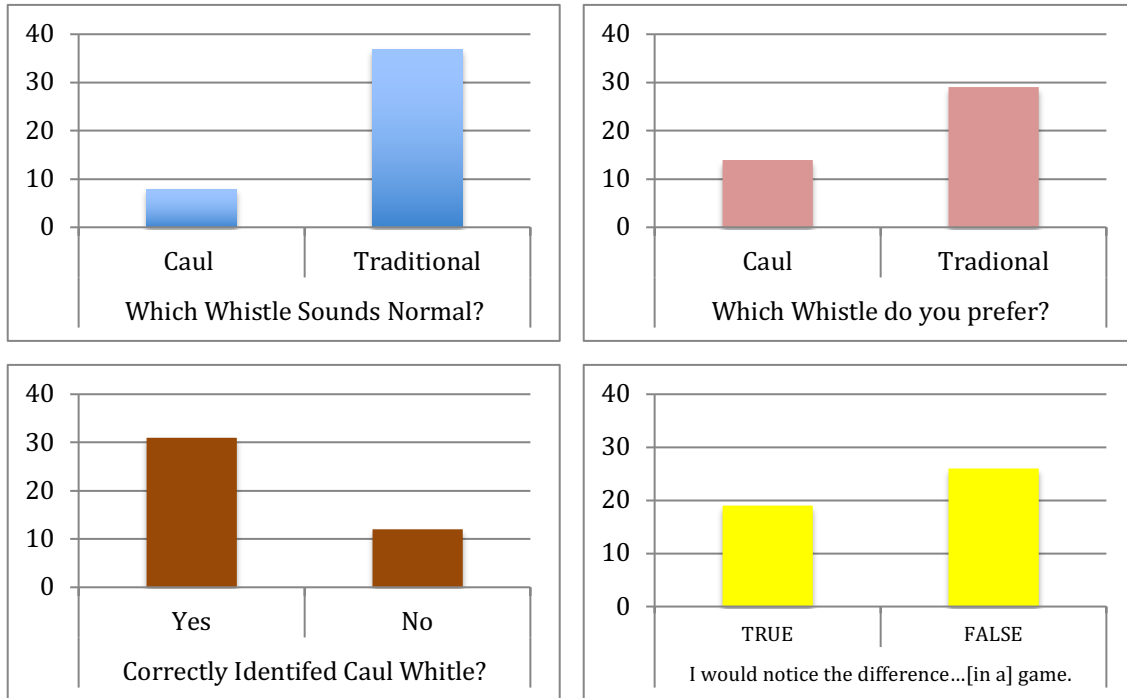
<sup>3</sup> As of October 2020, there is no data supported proof for this paragraph.

<sup>4</sup> On September 19<sup>th</sup>, the traditional whistle was blown first. On September 27<sup>th</sup>, the Caul was blown first.

- 4) True or False. I would notice the difference if I was at a hockey game and not 100% focused on the whistle.

### Results

Here are four graphs to illustrate the results of each question:



Further analysis divided the data in years of experience and found that officials with 0 or 1 year of experience were:

- more likely to say the Caul sounded normal (23% for 0-1 years of experience and 12% of 2+ years),
- more likely to prefer the Caul (52% of 0-1 year officials versus 12% of 2+),
- more likely to incorrectly identify the whistle (44% of 0-1 year officials were incorrect compared to 12% of 2+ year).
- Less confident that they could tell the difference during a game (34% of 0-1 year officials said "True" to the statement "I would notice the difference...[in a] game" compared to 53% of 2+ year officials).

### What does this data suggest?

The data suggests that in a controlled environment, such a quiet and empty restaurant at 8:30am on a weekend, level 1 and 2 officials identify a traditional whistle as normal (blue graph), as preferred (pink), and can correctly identify the traditional and Caul whistle (brown). However, the officials were more likely to believe they would not notice the difference during a game (yellow).

The difference between officials with 0-1 years and 2+ years of experience suggest that officials with more experience will respond differently to the Caul whistle. Their experience as officials increases their familiarity with a traditional whistle, which effects responses to all four questions.

Finally, the question this research sought to answer was “how well can I blend into the game using the Caul whistle?” The answer may be “you may be able to belnd in” for three reasons.

- First, officials with 0-1 years of experience are more similar to regular fans than officials with 2+ years of experience. The less experienced officials were only correct in identifying the whistles 44% of the time, which is similar to the odds of flipping a coin and getting “heads” (50%). Therefore, the 0-1 year officials may have been guessing.
- Second, about one-third of 0-1 year officials said they would be able to tell the difference in game. Therefore, it could be the case that fans are unlikely to notice the difference between the Caul and the traditional whistle.
- Questions 1-3, which suggest the officials could tell the difference, all occurred with the officials focused on the whistle’s sound. In a real game, that focus is divided to a range of events beside the sound of the whistle. Therefore, the Caul may be similar enough to a traditional whistle to blend in.

### **Limitations to this Research**

All research has limitations; here are three limitations of the current research:

1. Officials were all level 1 or 2s with 0-5 years of experience. What about level 3+ or officials with more years of experience?
2. Blowing a whistle in a restaurant is not equal to blowing a whistle in an arena.
3. The Caul and traditional whistles were compared. How would the Caul and traditional whistle compare to a pealess whistle used in other sports?