

SURF SKI SEARCH TECHNIQUES

INTRODUCTION

On Sunday 20 January, a group of surf ski experts spent the day with the NSRI in Simonstown assessing the various safety equipment carried by surf ski paddlers as well as an orientation around the search and rescue of these individuals.

I was responsible for performing a range of tests from the helicopter to provide any input from the aerial search for a missing paddler.

Conditions were perfect – 30kt southeaster with many small breaking waves creating white capping conditions.

We tested the following aspects:

- COLOUR DIFFERENCE OF SKI'S
- COLOUR DIFFERENCE OF CLOTHING
- DISTANCE TO VISUAL REFERENCE
- OPTIMAL SEARCH HEIGHT
- OPTIMAL SEARCH ANGLE WITH RESPECT TO SUN
- VISIBILITY OF PADDLER ON/OFF SKI
- VISIBILITY OF THERMAL REFLECTIVE BLANKET
- VISIBILITY OF RED PENCIL FLARE
- COMMUNICATIONS FROM SKI TO HELICOPTER VIA CELLPHONE
- COMMUNICATIONS FROM SKI TO HELICOPTER VIA PORTABLE RADIO

Our findings were as follows:

COLOUR DIFFERENCE OF SKI'S

(Sample: 3 ski's. 1 completely red ski. 2 completely white skis.)

- Brightly coloured skis make it much easier for an airborne search.
- We noticed the red ski from approximately 500m away. The white ski's only became apparent once we located the red ski and as we arrived in the area above the skis. The white ski was almost invisible at most angles with us often searching for the second white ski whilst it was directly below us even when we were 200ft above it. We only tested red and white ski's. The white skis with red ends would probably make little difference as the most visible section is the middle section where it is broadest. By making the ski different colours, you would remove the visual impact of one large constant colour, thereby making it harder to see. The entire ski makes a distinctive difference to the white chop. Any break of this would remove that visual impact.

COLOUR DIFFERENCE OF CLOTHING

(Sample: 1 hi viz clothing, 1 med viz clothing, 1 normal viz clothing)

- Brightly coloured clothing made no difference for visibility from the air. This would make a larger difference from the sea. From the heli, we just noticed a speck on the ski.
- This would only be important if the person was in the water separated from the ski.

DISTANCE TO VISUAL REFERENCE

- We approached the search area at 400ft. Visibility was clear.
- Red ski visible from 600m
- White skis visible from 300m

OPTIMAL SEARCH HEIGHT

- 400ft and below steadily decreased the range from which we could see the skis.
- 700 - 900ft appeared the best altitude. It allowed the targets to be differentiated from the white caps due to the size of the targets.
- Any targets more than 200m left or right off flight course would probably be missed at any altitude. Parallel search legs recommended 100m apart.

OPTIMAL SEARCH ANGLE WITH RESPECT TO SUN

- The skis were clearly visible through approx 300 degrees.
- The obvious gap was the direct sun arc.
- Skis facing the heli were always invisible.
- Searching “up-sun” of the skis provided the best visibility with more “flashes” and visibility.

VISIBILITY OF PADDLER ON/OFF SKI

- Little difference was noted from the air whether the person was on or off his ski.
- When the person was in the water, there was a minor improvement in the size of the target visible.

VISIBILITY OF THERMAL REFLECTIVE BLANKET

- The silver “space” blanket was very effective. The paddler lay alongside his ski with the blanket draped over the hull, open.
- As the paddler opened it, it gave glints of light and attracted your eye to the ski immediately.

VISIBILITY OF RED PENCIL FLARE

- The red pencil flare was extremely visible and noticeable.
- It was bright enough to catch your attention
- The smoke left a good indicator for a long time after the flare was out.
- Concerns are:
 - It was over extremely quickly. Unless you were looking in the general area at the time, you would not see it.
 - It was below the horizon and the land made a difficult backdrop

COMMUNICATIONS FROM SKI TO HELICOPTER VIA CELLPHONE

- It was impossible to communicate via cellphone to the paddler.
- Wind on his phone made his voice inaudible
- Noise from the helicopter made it difficult to hear
- Helicopters with intercom connections would be better suited to hear these communications.
- Phonetic spelling did not improve the communications.

COMMUNICATIONS FROM SKI TO HELICOPTER VIA PORTABLE RADIO

- The paddler had a waterproof portable radio. This was highly effective. The particular helicopter had a radio communication problem, but in a real situation, the communications would be invaluable.
- A selected channel needs to be agreed upon for paddlers to monitor such as Ch71 for the yachts etc.

CONCLUSION

This was an invaluable exercise which will certainly assist us in formulating a more educated approach to searches involving surf-ski's. It is also invaluable to assess the various safety measures. A special thanks to Rob, Gordon and Wayne for their time and effort with the ski's, the Vodacom Rescue Helicopter crew and to Darren Zimmerman and his crew from Stn10 for their arranging this event as well as their warm hospitality.

I welcome any comments or input into these findings.

A comprehensive report with conclusions from Darren Zimmerman (NSRI), Rob Mousley (paddlers comments) and this report will be tabled and presented for distribution to all stations as well as paddlers via Rob Mousley's communication network with the paddlers so we can all learn from it.