

CIRA Engineering Technical Memo

Receiver Shelter Stations

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1 Introduction

Hot weather at the MRO caused MWA receivers and their air conditioners to seriously struggle. Often, the ASC temperature rose above acceptable levels and the receiver software shutdown the digital crate to prevent damage. Depending on which receiver was shutdown, this caused significant parts of the MWA to be unavailable. In 2015 we experimented with purchasing small canvas shelters to shield the receiver from the sun such that the air conditioner was able to cope.

2 Shelter Stations

Two types of shelter stations are used at the MRO. The first which covers a single receiver is known as a "Ute" and is 3.35m x 1.6m x 1.9m (LxWxH) in size. The second, covering some of our dual receiver pads is called "Le Petit" and is 5.1m x 2.77m x 2.3m (LxWxH) in size. The canvas is made from 300gsm woven coated polymer for the Ute shelters, and 410gsm PVC for the Le Petit. As of this writing (August 2016) the shelters have been up for approximately 10 months and appear to be surviving well.

One slight concern is the shelter canvas tearing itself apart whilst flapping in the wind. The end flaps of the shelter are not tied down and flap loosely. In the time the shelters have been installed, this has caused the surface level dust to be eroded, however the canvas does not show any signs of damage. One exception is the shelter on Receiver 8, which was purchased in 2015 and is made of a different material (unsure). This canvas displays small tearing along the end flaps where they rub on the elastic rope baubles that tie the canvas to the steel frame. These baubles are not present in the other shelters and it appears the tears will not move past the double sewn line on the flaps.

3 Conclusion

Since installation of the shelter stations, only a single receiver has suffered shutdowns due to the heat. It is suspected that this occurs due to small variations in the air conditioner efficiency between receivers.

4 Pictures