

Heat Ranger Ltd
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July 2014 update #7

Progress Heat Ranger Production

Cromwell, we are on site, albeit a day later than we had hoped. Actually it got a little difficult to tell which day was which this last week. We had booked Mainfreight for Tuesday afternoon to load up at Wyma to take Mark2 to 45 South Cherry Orchard, but we had been a little optimistic about time frames and we had to drop back a day. Rhys Ransby, Mainfreight's owner driver was able to be quite philosophical and we eventually ran the machine at the factory with a crowd of supportive onlookers and then loaded up by 8.30 pm on Wednesday 3rd July. After picking up the rest of his load at 11.30 pm at the Christchurch Depot, Rhys headed out with his curtainside trailer full of Heat Ranger, temperature monitoring masts and two pallets for LPG gas. In the front was his fascinated passenger sitting alongside in the cockpit of the 700kW International with more dials and lights than I could count. These truck cabs are fantastic and with a bottle of orange juice quietly set to turn into a slushy over the next 6 hours we headed south west towards the Lindis Pass with reports of likely road closures from snow and ice. With a couple of stops to check the baby and tighten the strops we got to the Pass and while the snow had been cleared from the road, it was icy enough on the downhill side to have Rhys keeping the pedal away from the metal to keep below 20 kph. A bit of a new experience for me and an opportunity to appreciate the care he was taking of our precious cargo.

5a.m. saw us pull into Cromwell Mainfreight depot to unload the truck and have a quick cup before heading off with the trailer for another 5 minutes to start unloading at 45 South with Manager Jim Blanche and



deputy Brent Hislop on the job. Jim took just took a moment to bring back his latent forklift skills and in no time we had the truck unloaded. Bruce Koller arrived and we were soon enjoying eggs for breakfast at one of the Cromwell cafes, before starting the serious job of putting the two halves together again. Sun's up and we have 7 hours to have everything assembled and tested before we have people arriving at 3 p.m. to see Heat Ranger in Action. A tall order really as we were flat out assembling and disassembling as we found that a number of parts did not quite line up as a result of

the cross country trek. We did get there but we were not unscathed and had no time to run through our normal commissioning routine, let alone get our masts out into the orchard area. Fortunately the team at 45 South pitched in and helped, with masts and come 2.55p.m. the orchard tractor was carrying Heat Ranger out onto the orchard site. It looked a little like a hobbit beside Gandolf, but it did the job. We ran

the machine and were able to correct odd fault messages that appeared on the screen as it started to go through its various cycles.

Trade events

We all have experienced start up syndrome with equipment rushed out of the workshop to meet demo deadlines and we had our share. People were very understanding and knew that that is a game changer. By 4.30 the sun had gone and the socks were proving that they were not thick enough, so off to the motel for the luxury of a 15 minute bath, takeaways and then back into the cold air to check the masts and the signals from the base station to Harvest where Tyler was on the job and set up our 45 South site which you can no log into directly to Harvestalarms.com Access Live data, Region Otago, Sub-Region Heat Ranger 2, and Unit Tower A.



Temperatures were dropping and by 8p.m. it was obvious that sleep was not an option, so back out on site and we were able to start Heat Ranger at 9 p.m. and ran it for 2 hours when the PTO speed had a mind of its own and gradually crept above our fan limit setting of 1350rpm. The controls then shut the machine down as they are supposed to do. The process for reset did not like my finger pressure and so Carl Benton In Hamilton dialled in and made some software adjustments which kept him out of bed until 2.a.m. His advantage was that he was not standing out in the frost.

Friday Dawns

We were able to complete the field commissioning and we had more visitors at 3p.m. and Heat Ranger was able to go through its paces, but with no frost likely we concluded that the Cromwell Brew house with a warm fire and good food and a TV set to watch the Chiefs overcome the Hurricanes was a better place.

Earnscy Weaver is going to run Heat Ranger for the next two frost events for us and check the measurements and performance as an independent observer. At this stage we expect frosts for the mornings of Monday and Tuesday 8th & 9th July

Heat Ranger is sitting in a cherry orchard with trees about 3 – 3.5 m high and we have monitoring temperature masts at 50m centres to 250m.

Anybody in the district is welcome to check it out on site by contacting Earnscy on 0294 485 131. For those a bit further away you can check into the Harvest website.

Gas Supply

At the moment we have two, 4 bottle pallets, on site and we are working with Mainfreight and Elgas to get a replacement supply chain in place. As you can see from the photograph our gas bottle are on specially designed pallets with insulated covers over them and the bottles are heated from the tractor exhaust system so that even under frost conditions we can run 1 pallet at a time and still get the gas we need. We have even had some broiler chicken farmers asking us for our covered pallets to improve their gas efficiency.

Noise

We checked the noise levels on the machine at various distances and they were as follows:

50m from Heat Ranger, 72 decibels

100m from Heat Ranger, 65 decibels

150m from Heat Ranger, 59 decibels

200m from Heat Ranger, 54 decibels

*The Marlborough Regional Plan says
2.2 Conditions for Permitted Activities.*

2.2.11 Noise

Wind Machines for Frost Control

Noise levels measured at 200 metres from the wind machine shall not exceed 60 dBA

Clearly Heat ranger is quieter than any other fan and does not trigger a requirement for a resource consent.

Thanks

We would like to thank the team members at Reflex and Wyma in Christchurch for their efforts to get the machine built and ready to run, the key sub contractors and suppliers, both in Christchurch and in Hamilton who continue to be enthusiastic and supportive regardless of the challenges we ask of them.

We would also like to thank Rhys Ransby for taking such great care in moving from Christchurch to Cromwell in tricky conditions and the staff and management of 45 South who have made us so welcome and for whom nothing has been too much trouble.

You are all part of a project that will change the climate risk for horticultural crops both in New Zealand and round the world. We appreciate your support and your faith in what we are trying to achieve.

Thankyou



Fred Phillips

Project Manager

7/7/14