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# REMOTE VIDEO UNIT FOR MONITORING SELF-MUSTERING TRAPS

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## INTRODUCTION

The Remote Video Unit (RVU) is a self-contained, stand-alone unit designed to provide information on the interaction and behaviour patterns of sheep, cattle, feral goats and kangaroos using water points fitted with self-mustering trap gates. It was developed to reduce the labour required to monitor the trap site and evaluate factors affecting the movement of animals through these gates. Modifications to these gates can then be made accordingly.

## DESIGN

The unit is solar powered by three 75 watt solar panels, which provide power to four 130 amp hour batteries for storage. The batteries are connected in series as the entire system operates from 12 volts DC. A 24 hour Time Lapse Video Cassette Recorder (VCR) is used which is capable of monitoring a site without the need to change cassettes or reactivate the unit for long periods of time. The VCR is activated by either one of two Passive Infra-Red (PIR) detectors. The detectors are mounted such that their detection zone covers our area of interest. When an animal comes into the area of interest the detectors activate the VCR which records the animal's activities. The high resolution monochrome Charge Coupled Device (CCD) camera is fitted with an auto iris, wide angle lens of 4.5 mm and will operate in both extremely low visible light situations (0.02 lux at F0.75) and with Infra-Red (IR) light. When coupled with IR lights, the unit is able to monitor animal activity even on the darkest of nights.

The sensitive electrical equipment is housed within a dust and water proof insulated cabinet. Solar panels, batteries and the cabinet are mounted on a frame which is in turn mounted on a tandem trailer, giving the unit mobility. Details of the frame design, wiring diagrams, components and costs are available from the authors.

The recorded material is reviewed on a video monitor to determine any behavioural patterns of interest. Using a second VCR, this material can be edited onto professional quality S-VHS high resolution tapes, to create a master file of significant events or interactions. This has proved very useful in our extension programs.

## PROBLEMS/CONCERNS

Despite the VCR and monitor being housed inside the insulated box, with the unit located in full sunlight extreme heat was a potential problem. The temperature was on average 4°C cooler within the cabinet than outside and appeared to keep within the safe operating range of the equipment. The CCD camera is housed in a camera housing which is of an IP 66 rating. This means that the camera and lens are totally protected against dust and water. The batteries are held in a battery tray and are covered with two layers of shade cloth to prevent UV deterioration of the batteries. The voltage regulator is housed in a removable box mounted to the side of the battery tray for easy access and connection.

## POTENTIAL USES

The potential uses and flexibility of the RVU are diverse. Possible uses include animal behaviour studies, grazing pressure monitoring/studies, nest monitoring, burrow monitoring, bait station monitoring and biodiversity studies.