

‘HILLALONG STATION’ - AN INNOVATIVE SHEARING SHED FITOUT

Bill Chandler and his family have been at Hillalong Station, Barcardine since 1963. Covering almost 16,000ha, Hillalong usually runs 8,000 Merino sheep and 500 breeding cows. The Chandlers shear every 10 months and after decades of service, the shearing shed was beyond repair by the end of 2017 with termites having decimated most of the timbers in the old shed.

So, after shearing in December that year, the Chandlers demolished their old shed and set to work designing and building a new shed in time for the next shearing in September 2018.

To avoid the issues they had had with termites in the old shed, Bill opted for a steel framed, clear span shed as the main structure, measuring 17m by 28m.

The old shed had a straight board which the Chandlers found to be inefficient for shearers, shed hands and woolhandlers as all would need to walk greater distances over the course of a day but the inefficiencies didn't stop there. Shedding up was difficult as the design of the yards did not encourage the movement of sheep, particularly because the great contrast of light and dark shadows at the shed opening. Penning up was also cumbersome as sheep were reluctant to move towards the noise and movement on the board due to back fill pens.

The shed also only held 120 sheep with no undercover storage which is a fraction of what would be needed for a day's shearing – not ideal when there are 8,000 sheep to be shorn every 10 months.

After undertaking some research on shed design, Bill was keen to adopt a horseshoe, raised shearing board with six stands. Budget constraints and discussions with the shed builder resulted in a rationalised layout with a 90 degree angle separating two banks of three stands to make a six stand shed.

The new shed allows 400 woolly sheep to be stored in the pens and an additional 300 sheep stored at the front of the shed.



Figure 8: shows the in-shed yards, slide/swing gates and boarded catching pen fence panels.

Penning up has been made easy through the incorporation of laneways for shed hands to use when moving sheep on the grated area. This eliminates the need to walk through pens of sheep and has significantly reduced the time required to pen up and fill the catching pens. Offset gates that open flush against the panel further enhances penning up.

The catching pen is sloped up away from the board with a rise of 200mm over a run of 2740mm, which makes catching, rolling and dragging the sheep easier for the shearer. The catching pen doors are equal in size, made of a 3-ply timber and have a 'push-pull' mechanism so they can open in either direction.

The let-go chutes as seen in Figure 10, are 750mm wide, sit close to the shearing stands and are recessed into the board by 150mm with a 100mm vertical drop in the chute before the slope tappers out. This helps sheep to move down into the chute, into laneways under the grating and then into the count out pens. Also to note from Figure 9 and 10 is that the chute does not create a trip hazard sloping back into the catching pen, with it being boarded of above fence height.



Figure 9: the timber slats in the catching pens run towards the board, parallel to the drag path. Where they are running against the flow of sheep in the rest of the back pens to reduce vision/light from underneath as sheep are penned up.



Figure 10: let go chute and shearer storage. The storage has a raised edge on the board side to stop falling objects and has a timber surface to reduce vibrations and wear on the shearer's tools (rubber could also be used).

The right-angle design of the board means the stands are closer to the wool table, reducing the distance walked by wool handlers and the raised board eliminates the need to bend over and pick fleeces up off the floor. This has also reduced the number of shed hands that are needed at shearing by one, reducing the cost per head to shear a sheep.

The concrete wool room floor covers 110 m² and extends to



Figure 11: right angle board design, with a raised rail to reduce the fall hazard. Note the electric shearing plant are covered while not in use.

the shearing board. This can be used to store equipment when shearing is not underway. Mobile wool bins are used to store pieces, stains and bellies while the main line is packed into the press from the wool table.



Figure 12: showing the concrete wool room floor and the stairs which are fixed to the raised board with a handrail.

Wherever possible, steel was used to prevent termite damage, seen in the structural support in Figure 14. Prefabricated steel sheep yard rails were cut down to suit the pen design. Timber was used for the board and grating as this is quieter, more comfortable for shearers, shed hands and sheep to walk and stand on and is resistant to corrosion.

This shed was erected in 2009 with the internal fit-out of the pens, shearing board and wool room completed over 21 days in 2018. Since being finished, the shed has been used twice for shearing.

When designing a shearing shed it is advisable to seek input from your shearing contractor and shed staff about what works well and what improvements could be made to make the shed work more efficiently and safely.



Figure 13: wool room and re-cycled portable wool bins on wheels. Ample natural light and the large ceiling 'white' light over the wool table. External light can change throughout a day and between days, strong white light can provide a constant lighting for classing.



Figure 14: steel structural beams and covered count out pens.

“The builder used to be a shearer, so he knows how sheep think and he used this knowledge to help design a shed that fits with their behaviour and the requirements of shed staff,” said Bill.

“This was clear during the first shearing, as it was so much easier to fill the shed and pen up. There are more curves and changes in direction which the sheep tend to naturally move around compared to a straighter flow or layout,” said Bill.

The fill and catching pens hold approximately the same number of sheep and there is additional room around the fill pens to hold sheep if needed.

“I strongly recommend that producers seek as many quotes as possible to make sure they get the right person to build their shed at a fair price,” said Bill.

The Chandlers approach to fitting out this shed, highlights the need to be flexible in shed design, to look around at what is out there and to allow for environmental and financial considerations. For the Chandlers this included thinking about rainfall patterns, aspect and preventing termite damage. Incorporating thought about animal behaviour is important to improve efficiency and the working environment for shearers, shed hands and woolhandlers.



WOOL.COM

To the extent permitted by law, Australian Wool Innovation Ltd excludes all liability for loss or damage arising from the use of, or reliance on, the information contained in this document. ©2020 Australian Wool Innovation Ltd. All rights reserved. Australian Wool Innovation Ltd gratefully acknowledges the funds provided by the Australian government to support research, development and marketing of Australian wool. GD3487