two and tacked. Where fruit is stacked on slopes a small trench is necessary to turn the water.

In districts where heavy frosts are likely and freezing injury may occur it is not advisable to leave apples stacked in the orchard in late autumn. Such injury to fruit occurred in the 1949 season in Central Otago.

Transport to Shed

Nothing is gained by speedy transport to the shed if it means jolting and bruising. Cases should not be dumped on to the truck or trailer, as the apples are still unpacked and will bruise much more easily than later when they are packed and pocketed correctly. If the roadway through the orchard becomes hard and bumpy, a stroke with the discs every few days will improve it and lessen the chance of damage to fruit.

Grading

Much of the bruising which occurs is done while feeding the fruit through the grading machine, and to help to avoid this a sack tacked to the back top edge of the hopper is useful. Place the case of fruit on the shelf which runs along the back of most fruit-grader hoppers, draw the sack back over the case, hold the sack firmly to it and roll the case forward as though hinged on to the hopper. The case is now upside down and is carefully lifted from the fruit. Overloading the belts and bins is another source of bruising and it is not a time-saving factor. Also it is important to keep the bins clean and free from any refuse that will bruise and mark the fruit.

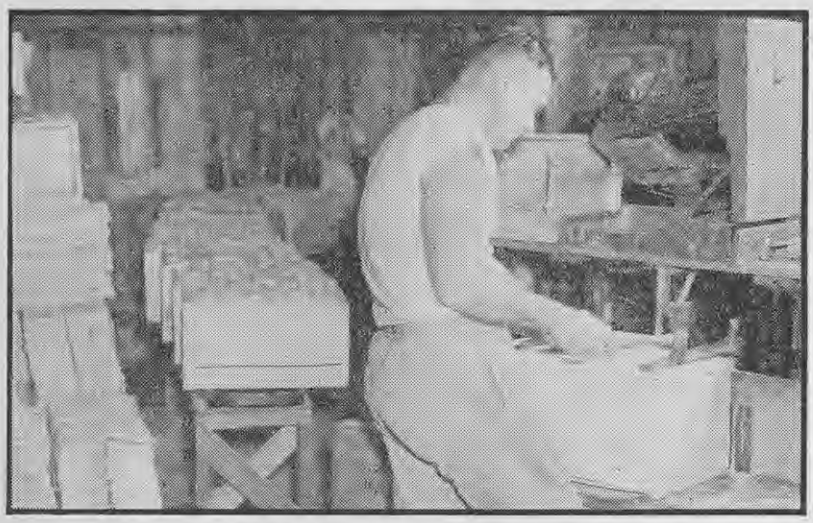
Packing

Cases should never be packed solely from fruit at the top of the bin, as some apples may have been at the bottom all day and become badly bruised and marked. Packing should always be done from the front of the bin, taking the apples right to the bottom of the bin, thus ensuring that each fruit is packed as nearly as possible in the order in which it arrives in the bin, so that it is exposed to bruising for the shortest possible time.

Packers with longer fingernails cut and mark apples considerably, and this should be avoided.

Cheek-to-cheek packing with the stems pointing to one end of the case, except the last apples in the layer which should have the calyces to the end, is the only way to achieve the uniformity of pockets so vitally necessary to a good firm pack. Packing in this way is no slower. The eyes select the apple and the hand picks it up and throws it into the paper so that the stem points away from the packer. With a little practice this is done automatically.

Slack packs and packs which are too high cause bruising, and for this reason a little time spent adjusting the grading machine until it sizes as perfectly as possible is a good insurance against these packing defects. Machines that grade by weight require careful watching, as the weight of fruit often varies in pickings from different parts of the orchard.



[*National Publicity Studios photo.*

Nails must be driven in straight, otherwise they may protrude either on the outside or inside of the case, making it dangerous to handle or damaging the fruit.

The packer should know when the first layer is packed whether the pack will come up to the correct height. The following details should be a guide:—

Apples with a diameter of 3in. are packed 100 count 3-2 across, 4-4 lengthwise, with 5 layers. Twenty fruits are placed in the bottom layer, with large pockets and packed fairly slack. The 113 pack has apples 2⅞in. in diameter and is packed 3-2, 5-4, 5 layers. Twenty-three fruits are placed in the bottom layer and the pockets are smaller and the pack a little tighter. This procedure may be followed down through the 3-2 packs, maintaining the correct height with 5 layers by tightening and reducing pockets as the size of the fruit decreases. This also applies to 3-3 or 2-2 packs; a tightening of pack and pocket from the large apples to the smaller. A good illustration of this tightening procedure is seen in the difference between 48 count 2-2, 3-3, 4 layers and 96 count 2-2, 6-6, 4 layers. Twice the number of apples are packed into the 96 count, maintaining the correct height, with the same number of layers as in the 48 count.

Packers should have a thorough knowledge of the grading regulations so that a check is kept on the standard of fruit coming from the grading table.

Lidding Press

Severe damage may occur to fruit on the lidding press unless the pack is crowned correctly. Badly packed apples can be bruised, crushed, and even cut in half in the nailing-up process, and the shed foreman must insist that the packers consolidate the pack by pressing the ends of each layer down with the flat of the hand. The pack should finish with the end rows nearly flush with the top of the case and rising to a crown in the centre.

In fitting the lid the foot lever should be pressed down slowly, otherwise much bruising may occur, particularly when the thick-bottomed case is used.

Nailing

Cleats should be soaked in a barrel or tub to eliminate splitting when nailing. Cleats that are cracked or split will part on the way to market; lids then come off and fruit is damaged or lost. Nails must be driven in straight, otherwise they may protrude either on the outside or the inside of the case. In neither position will the lid be held firmly and in addition such nails either make the cases dangerous to handle or damage the fruit inside.

Stacking Packed Cases

Packed cases should not be stacked more than 7 high, and where thick-bottomed cases are used this is often too high. With the bottom and sides of a case the same thickness, the pressure of the lidding press will find the weakest board, often causing a bulge in the side. It is impossible to stack such cases without exposing them to pressure, and the solution to this problem is the use of the thin-bottomed case.

Importance of Appearance

In the sale of any commodity appearance is of primary importance, and therefore cases must be clean and as attractive as possible. Labelling, wire strapping, and branding must be done neatly to give the package a finished appearance, which is often a good indication that care also has been exercised in handling the contents.