



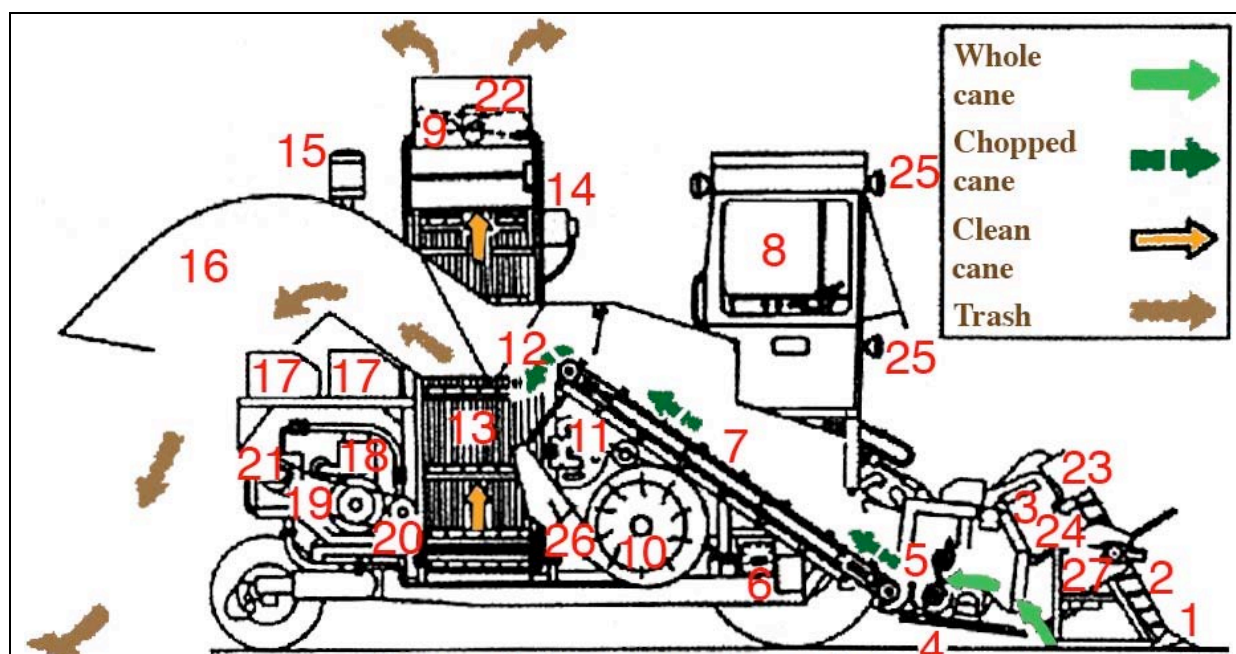
## Mechanical Sugar Cane Harvesters

Sugar cane is a tall grass with a thick stalk which was manually harvested by a cane cutter with a knife and transported to a nearby mill.

During the 1950s, the sugar industry boomed and dramatic changes were taking place within Queensland. In 1954, bulk handling of raw sugar was introduced into Australia replacing bagged sugar and mechanical cane harvesters gradually began to replace manual labour in the fields. By the late 1960s, more than 85% of Australian sugar crops were mechanically harvested. In 1979, Australia achieved 100% conversion to mechanical cane harvesting. [Queensland Sugar Ltd]

Mechanical cane harvesters were developed in a number of countries over the years but Austoft in Australia was one of the first to market a viable harvester and went on to build an export market. Austoft is no longer an Australian company and its harvesters are now made in Brazil by Case IH.

While whole stick systems still exist, a more typical harvester tops the cane stalk, chops the stalk into 25-30 cm *billets*, separates the billets from the remaining leaves and other trash, and delivers them into a bin or in-field transporter for delivery to a nearby rail line or mill.



Sectional view of cane harvester

Adapted from Langton, MI (2004). *Methods and Techniques of Sugarcane Harvesting*, Pietermaritzburg: University of KwaZulu-Natal, p 32; from Blackburn, F (1984). *Sugar-cane*, Essex, UK: Longman Group Ltd.

- |                                   |  |
|-----------------------------------|--|
| 1 Divider points                  | 15 Engine air cleaner  |
| 2 Rotary dividers                 | 16 Harvester rear hood   |
| 3 Guide bar                       | 17 Hydraulic oil tanks   |
| 4 Cutting discs                   | 18 Engine  |
| 5 Chopper drums                   | 19 Ground drive hydraulic pump   |
| 6 Ground drive hydraulic motors   | 20 Hydraulic lift pump   |
| 7 Main elevator                   | 21 Hydraulic pump for rotating dividers, side cutter                   |
| 8 Driver's cab                    | 22 Oil motor for axial blower  |
| 9 Axial-type cleaning fan         | 23 Oil motor for side cutter   |
| 10 Cleaning fan                   | 25 Working (night) lights  |
| 11 Main drive                     | 26 Hydraulic pump for cross elevator axial blower (secondary cleaning) |
| 12 Rear deflector                 | 27 Side cutters  |
| 13 Cross elevator                 |  |
| 14 Cross elevator hydraulic motor |  |



© Greg Stephenson

# CH3500 Sugarcane Harvester

Crop Divider Design Improves Feeding and Reduces Crop Damage.

Larger, Quieter, Enhanced Rear Visibility, Tilting Cab.

More Efficient Engine and Hydraulic System.



Address: 244 Highway 3266 Thibodaux, Louisiana 70301-1602 USA  
 Phone: 985-447-7285 Fax: 985-447-5735 Email: Cameco@JohnDeere.com



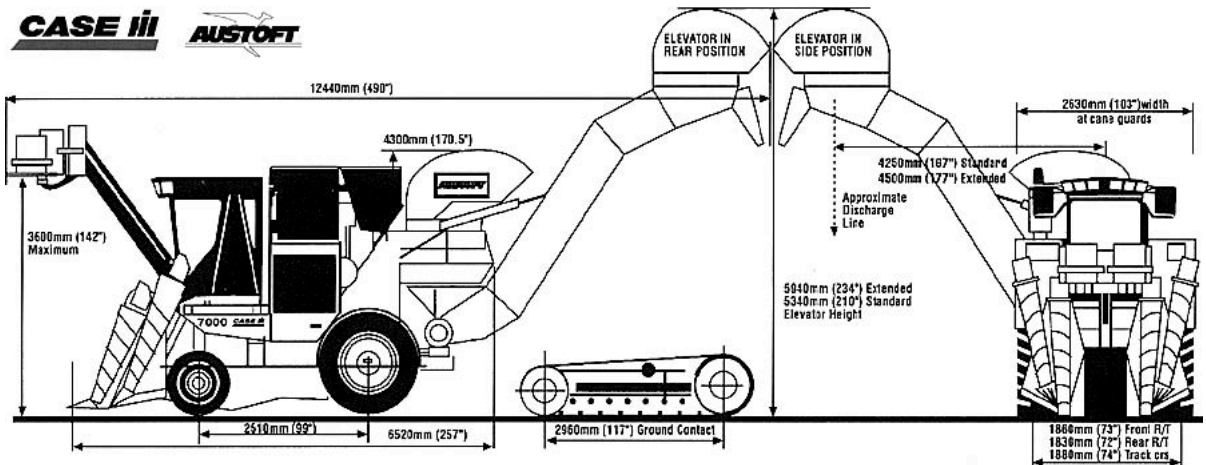
Machines Simon tractor mounted harvester, previous page. This may be a wholestick harvester, however details were unclear from the manufacturer's web site.

However, the photographs clearly show the transport rollers which separate the rows and pull the cane into the cutter, then lift it for handling.

The Austoft 7700 shown here is similar to the drawing below but is an older model and may have slightly different dimensions. One obvious difference among harvesters is the type of topper mechanism, varying from toothed blade to whip.



*Case IH – Austoft 7700 tracked sugar cane harvester photographed when for sale in Mackay, 2003*





## Case IH - Austoft 7000 Sugar Cane Harvester

**Roller**

**Topper**

### Notes

The Case IH-Austoft 7000 front wheels are 14.5/60 x 18 x 12 ply, the rear are 23.1 x 26 x 14 ply. Standard equipment includes air conditioned cab and road/safety lighting.

The 7700 radiator (side view, page 3) is 39" wide. The dimensions on the Case IH drawing apply to both 7000 and 7700 models, although there may be some differences between a new 7000 and the older 7700 shown here.

### Acknowledgments

The Queensland Sugar Ltd quote was retrieved 26 Oct 03, <http://www.queenslandssugar.com/page.cfm?pageid=169>.

The sectional drawing (page 1) was adapted from Langton, MI (2004). *Methods and Techniques of Sugarcane Harvesting*, Pietermaritzburg: University of KwaZulu-Natal, p 32; from Blackburn, F (1984). *Sugar-cane*, Essex, UK: Longman Group Ltd.

The Austoft harvester with in tractor-hauled field transporter photo (page 2) is © Greg Stephenson.

The CH3500 Sugarcane Harvester images (page 2) are from a Cameco (A John Deere Company) brochure downloaded 26 Oct 03, <http://www.camecosugar.com/>.

The tractor-mounted harvester images (page 2) are from the Machines Simon web site, retrieved 26 Oct 03. <http://www.machines-simon.com/cane.htm>.

The Case IH drawing (page 3) is from a c 2000 Case IH-Austoft brochure, obtained Oct 2003.

The Austoft 7000 and 7700 harvester photos (pages 3, 4 and 5) were taken at Mackay in Oct 03, © Lynn Zelmer.

The Massey 305 was last produced in the mid-1980s; photographs (page 5) c 1990, © Lynn Zelmer.

The cover illustration (page 6) comes from Kerr and Blyth, described below.

### Selected Resources

Austoft, **The Short Sweet Story of Sugar**, Media One Australia, Bundaberg, Qld, c 2000, A video version of one of the interactive displays at Fairymead House Museum in Bundaberg. Describes the planting, harvesting, transporting and milling of sugar cane; ~12 min.

Kerr, Bill, **They're All Half Crazy: 100 years of mechanical cane harvesting**, Canegrowers, Brisbane, QLD, 1995. Traces mechanisation from 1888 to present, includes rare footage of Kanakas cutting cane as well as harvesters; 22 min

Kerr, Bill, and Blyth, Ken [Comp], **They're All Half Crazy: 100 years of mechanised cane harvesting**, Canegrowers, Brisbane, 1993. Book to accompany video of similar title.

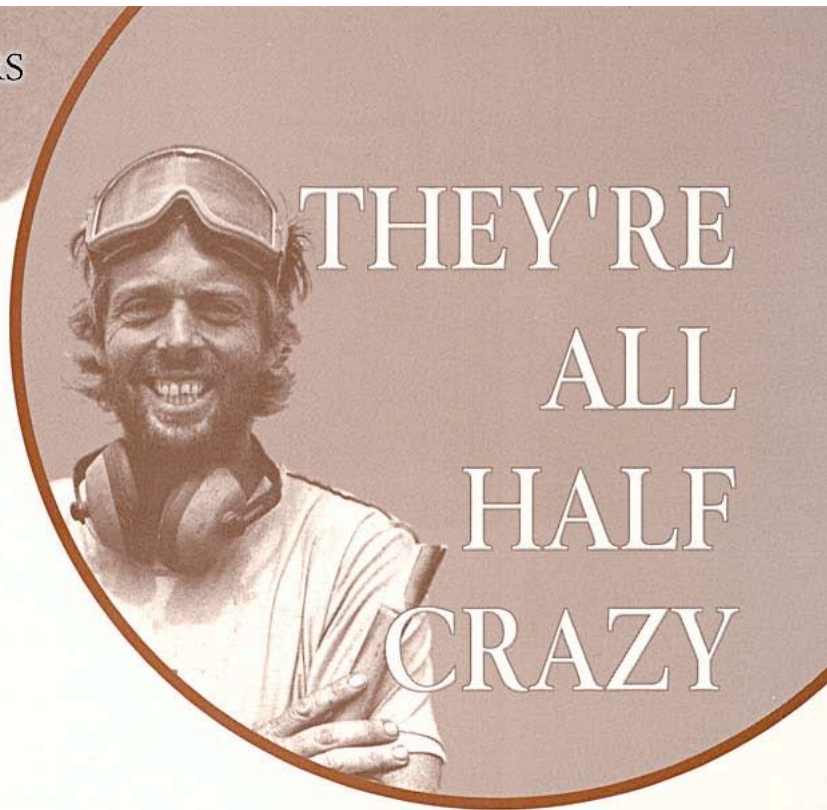


*Massey 305*





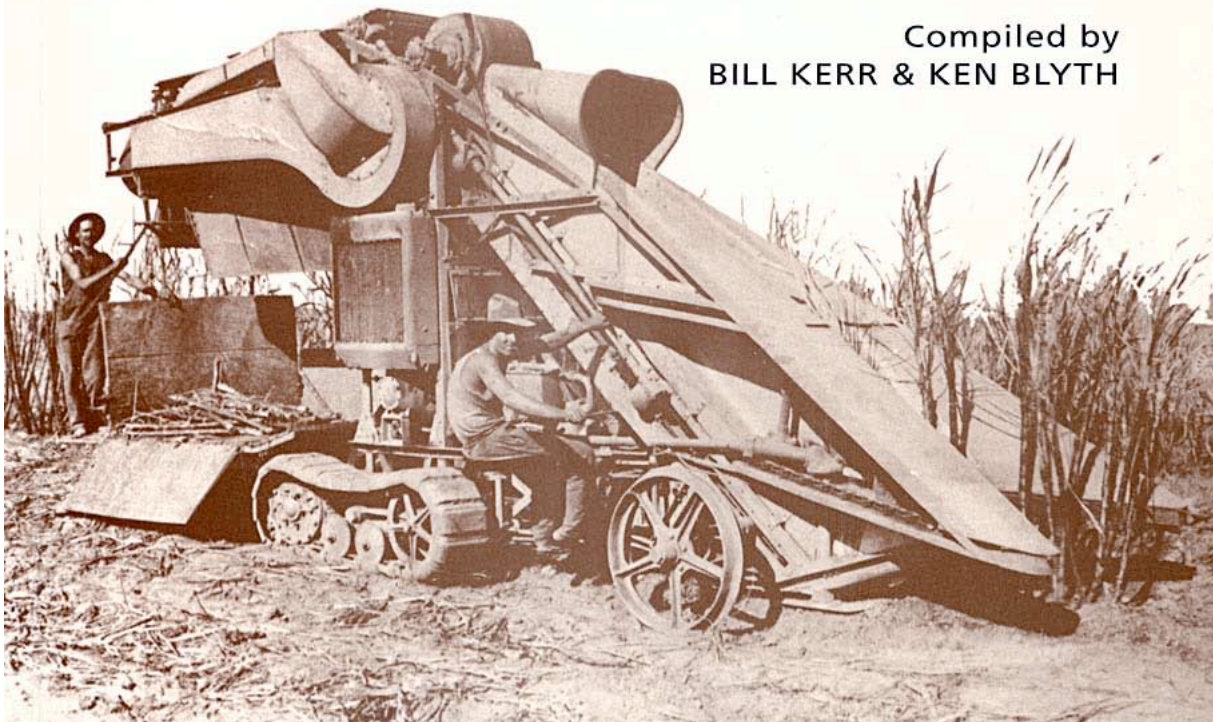
CANEGROWERS



# THEY'RE ALL HALF CRAZY

## 100 YEARS OF MECHANICAL CANE HARVESTING

Compiled by  
BILL KERR & KEN BLYTH



This cover image for the book **They're All Half Crazy: 100 years of mechanical cane harvesting** shows a 1920s era Falkiner harvester. Falkiner machines apparently were 'mechanical successes but financial flops'. [Kerr & Blyth, 1993, p 1]

Harvester information, whether historical or current, is not readily available to the casual researcher, thus this book, using historical files from, and published by, *Canegrowers* is a 'must have' for anyone interested in mechanisation in the Queensland cane fields.