

# Modelling Cane Railways

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Cuban Bogie  
Cane Wagons

CaneSIG: <http://www.zelmeroz.com/canesig>

## Cuban Bogie Cane Wagons

### Introduction

Cuban sugar mills operated railways operated on a range of gauges, thus had a wide variety of both purchased and homemade equipment.

This Handbook article complements *Handbook 19: Large Scale Cane Wagons* and *Handbook 26: Cuban Sugar Cane Loader* which Jim Petropulos built for his 1:20.3 garden layout (15 mm = 1'), and hopefully adds enough detail for a modeller to build a 'good enough' representation in any scale.



Unpainted 1:20.3 two compartment bogie cane wagon built in brass by Jim Petropulos of Los Angeles. See *Handbook 19* for details.

Various *Car Builders Cyclopedias* provide photos and some dimensions for US-sourced bogie wagons as used in Cuba. Some were unloaded by side or end discharge, others by chain lift. While originally they may have had semi-open sides and manually loaded with wholestick cane laid longitudinally, billet loading requires either solid sides or wire mesh.

### Havana Museum Bogie Wagon Dimensions

| Gauge                    | Standard | 3' Narrow |
|--------------------------|----------|-----------|
| Length                   | ~37' 7"  | ~27' 2"   |
| Width                    | 9'       | 83.5"     |
| Body height              | 95"      | ~93"      |
| Rail top to body bottom  | 29"      | ~21"      |
| Wheel dia                | ~30"     | ~2'       |
| Bogie wheelbase          | 62"      | 51"       |
| Body end to bogie centre | ~5'      | ~5'       |

*Cyclopedia* photos of *Gregg* and *Magor* wagons are reproduced in *Handbook 19*, along with both 1:20.3

model and prototype photos; showing how variations exist between builders and rail gauges.



Ruben Martinez Villena Mill, Cuba: sugar cane wagon mesh, February 2003. Claus Kleinhapl photographer



Pepito Tey Mill, Cuba: damaged sugar cane wagon (end view), February 2003. Note solid metal end and side release mechanism. Claus Kleinhapl photographer.





La Zafra On30 side dump cane wagon, construction materials unknown but result is very similar to Cuba Libre wagon below.  
<http://narrow-gauge.org/en/Zafra/>

### Acknowledgements

Thanks to Chris Hart for his measurements (above) of two bogie cane wagons in a Havana museum c 2004. As he says "Bear in mind of course that not all the wagons in the industry are of the same size. These are just two that were at the museum and which would be pretty typical."

Most railfans concentrate on Cuba's US sourced steam locomotives when taking photographs on the Cuban cane railways. My special thanks to Claus Kleinhapl for his modeller-oriented photos.



Cane wagon on flat car-type underframe, On30 display layout *Cuba Libre* at the 2003 Australian Narrow Gauge Convention, Sydney. Ray Walter and Claus Kleinhapl modellers, Gerry Hopkins photographer.



Gregorio Arlee Manalich Mill, Cuba: 2 ft 6 inch gauge sugar cane wagon, February 2003. Note how much longer this wagon looks than the models immediately above, however a wagon this long might not get around On30 curves. Claus Kleinhapl photographer.





Side dumping cane wagons on La Zafra Cuban On30 modular layout built by French modellers Bernard Junk and Jack Trèves with the help of Detlev Horn, c 2000. <http://narrow-gauge.org/en/Zafra/>



Obdulio Morales Mill, Cuba: sugar cane wagon, February 2003. Claus Kleinhapl photographer.





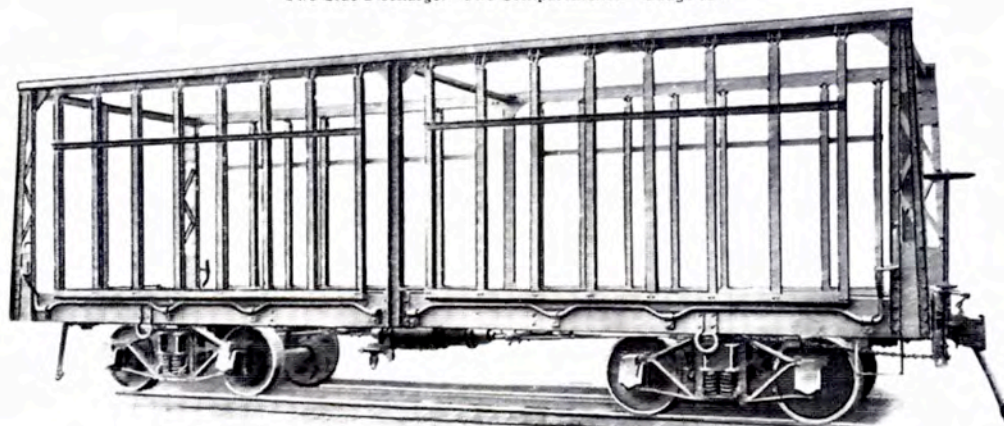
Pepito Tey Mill, Cuba: end (above) and side detail (below), February 2003. Claus Kleinhapl photographer.





### 15-TON CANE CAR

Two-Side Discharge. Two Compartments. Gauge 36".



CODE WORD ZANUF

**GENERAL**

Gauge of track, 3 feet 0 inches. (0.914 Meters)  
 Length measured over end sills, 25 feet 6 inches. (7.772 M.)  
 Width measured over side sills, 7 feet 0 inches. (2.134 M.)  
 Height from top of track rails to center of coupler drawbar, 2 feet 1/2 inches. (0.623 M.)  
 Height from top of track rails to top of floor, 3 feet 1/2 inches. (0.927 M.)  
 Distance between centers of trucks or bogies, 16 feet 0 inches. (4.877 M.)

**DRAFT GEAR**

Couplers, automatic, having drawbar shank 4 inches by 4 inches (0.102 M. by 0.102 M.), 3/4-inch (0.019 M.) size.  
 Draft gear, tail strap type with twin spring.

**UNDERFRAME**

Center sill (one) of 12-inch (0.305 M.) rolled steel I-beam, weighing 31.5 pounds per foot.  
 Side sills (two) of 10-inch (0.254 M.) rolled steel channel, weighing 20.0 pounds per foot.  
 End sills (two) of 10-inch (0.254 M.) rolled steel channel, weighing 20.0 pounds per foot.

**FLOOR**

Floor of 1 1/2-inch (0.038 M.) yellow pine lumber.

**SUPERSTRUCTURE**

Type: Discharging two sides, two compartments. Steel frame, no lining. Corner posts of steel lattice. Top belt rail "Z" bar. Side stakes and door members I-beams. Door fastenings, individual locking bars.  
 Size of compartments, 11 feet 8 inches (3.556 M.) long, height of sides, 5 feet 11 1/2 inches. (1.816 M.)

**TRUCKS**

Type: Standard diamond arch bar.  
 Wheel base, 4 feet 2 inches. (1.270 M.)  
 Wheels, Standard North American type of cast gray iron with chill hardened treads. Double plate type.  
 Diameter of wheels, 24 inches. (0.610 M.)  
 Axles, 3 1/4-inch (0.095 M.) round steel.  
 Journal size, 3 inches by 6 inches. (0.076 M. by 0.152 M.)  
 Journal boxes, complete with torsion spring lids.  
 Arch bars, 3 inches by 7 1/4 inches (0.076 M. by 0.022 M.), top. 3 inches by 7 1/4 inches (0.076 M. by 0.022 M.), bottom. 3 inches by 3 1/2 inches (0.076 M. by 0.009 M.), tie bar.  
 Bolsters, steel, 7-inch (0.178 M.) I-beams, 15.3 pound section.  
 Spring plank, steel, 10-inch (0.254 M.) channel, 15.3 pound section.

**BRAKES**

American Westinghouse automatic air and hand brakes applying to all wheels.

General specifications of a 15-ton, 2-compartment, two-side-discharge steel cane car built to 3-foot gauge in 1920 on Lot #P-4457. (Magor graphics, photos, E.S. Kaminski collection)

From Kaminski, Edward S (2000). *The Magor Car Corporation*; Signature Press, p 60.

The Magor Car Corporation was a major exporter of American-built cane railway equipment to countries such as Cuba. While this particular wagon may not have gone to Cuba, others like it would have done so. Incidentally Kaminski's book is a valuable resource for both cane railway and more general railway equipment as used in Mexico, Central America, etc.

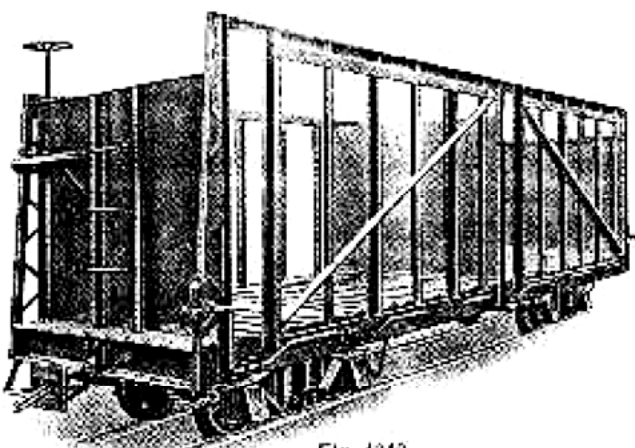


Fig. 4242

Wagon pour canne à sucre à quatre essieux avec parois bascuantes d'un côté et 2-3 compartiments pour déchargement sur ponts-déchargeurs.

Trains de roues: Roues à bandes en acier moulé, câmines en acier S.M. avec baïnes à amortissement et amortisseurs à ressort.

Bogies: Baïnes des traverses et paliers porte-essieux en acier profilé avec ressorts à lames en fil d'acier rond.

Plate-formes: Longerons et poutrelles de face en fer U, poutrelles transversales en acier profilé, cornières soit en fer ou en acier soit en fer plat ou en cornières.

Construction supérieure: Parois de face et médianes en tôles d'acier, parois fixes en cornières et rangers à charnières.

Dispositif de traction et du choc: Tampons à choc à ressorts pour service de 100 C.V.

Frein: Frein à main à queue ou frein sabote pour commande depuis une extrémité du wagon.

Sur demande: Roues avec surfaces de roulement et bandes usinées, tampons à griffes à l'électrique, atelages de sûreté ou freins à air comprimé.

**Mesures principales**

| Capacité en m. | Largeur de voie | Roues | Largueur | Fusées   |          | Entretien | Ecartement des centres de bogie | Nombre des compartiments | Compartiments  |               |               | Longueur mesurée de l'empattement | Hauteur au sol |
|----------------|-----------------|-------|----------|----------|----------|-----------|---------------------------------|--------------------------|----------------|---------------|---------------|-----------------------------------|----------------|
|                |                 |       |          | Diamètre | Longueur |           |                                 |                          | Longueur utile | Largeur utile | Hauteur utile |                                   |                |
| 10 000         | 800             | 450   | 75       | 80       | 105      | 1050      | 3400                            | 2                        | 2740           | 1820          | 1820          | 6400                              | 740            |
| 12 000         | 750             | 500   | 85       | 65       | 125      | 1050      | 4700                            | 2                        | 3350           | 1820          | 1820          | 7950                              | 780            |
| 15 000         | 1000            | 600   | 95       | 75       | 150      | 1250      | 5500                            | 2                        | 3800           | 2000          | 1900          | 8900                              | 830            |
| 18 000         | 1000            | 800   | 105      | 80       | 150      | 1350      | 6000                            | 3                        | 2740           | 2140          | 1900          | 9300                              | 850            |
| 20 000         | 1000            | 800   | 120      | 95       | 175      | 1400      | 7000                            | 3                        | 3050           | 2140          | 1900          | 10250                             | 900            |

Similar German manufactured export 2-3 compartment cane wagon from Ferrostaal AG, Industrie und Feldbahnen 1930 catalogue (Ferrostaal.pdf, 'Materials for portable lines and railways', downloaded from <http://www.bahnindianers-bilderbuecher.de/>).