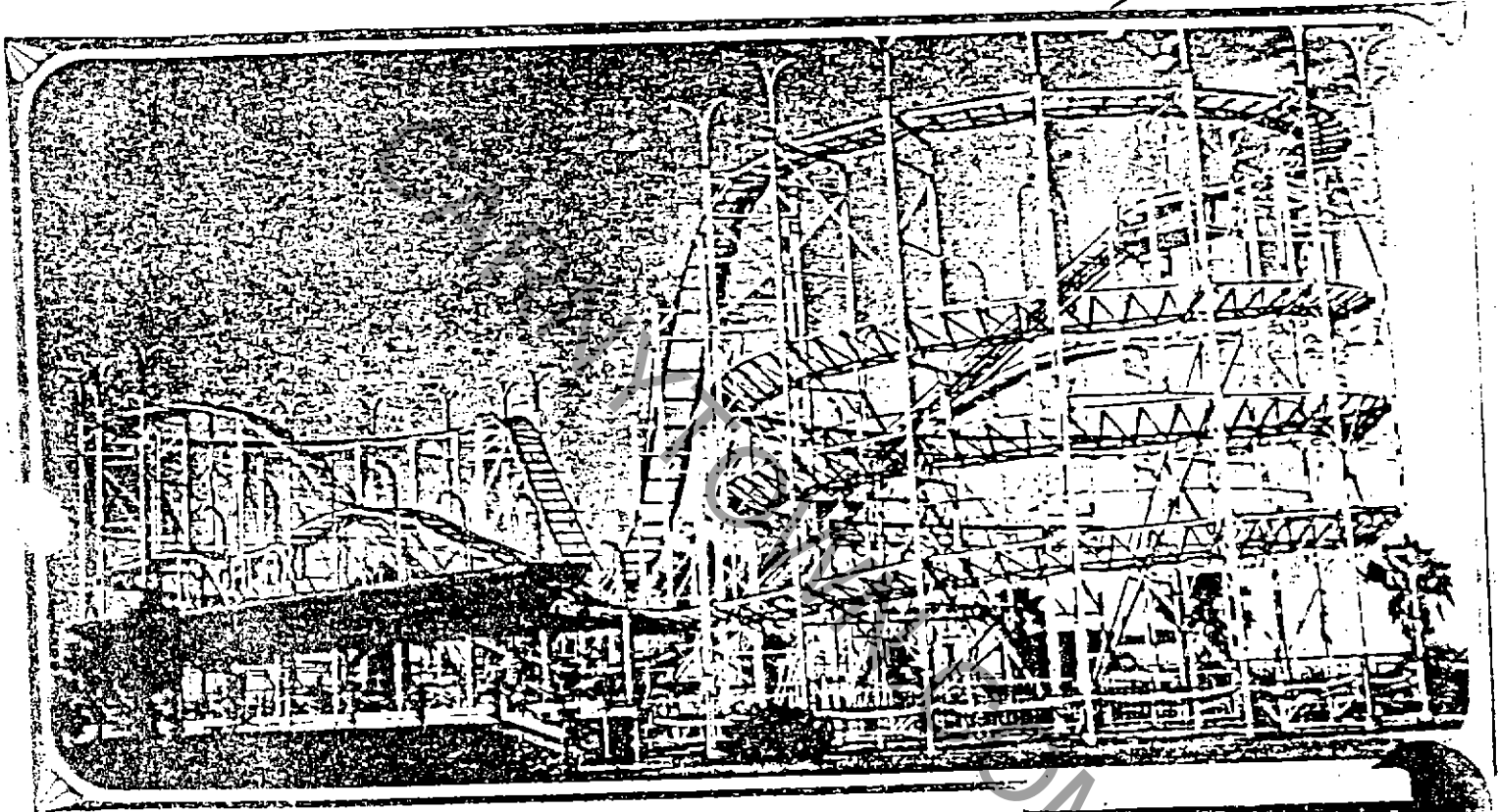


SDC
"Roller Coaster"
Non Kiddie

ROLLERCOASTER
Use and maintenance



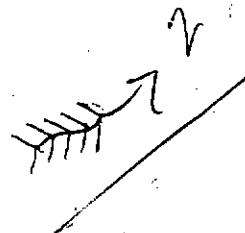
The information and illustrations in this catalogue are not binding.

S.D.C. s.r.l. reserves the right to modify the equipment at any moment and without advance warning, whenever technical or commercial necessities so require.

INTRODUCTION

This use and maintenance catalogue has been prepared by S.D.C. in order to facilitate the management of the equipment and give hints on several special operations thanks to which the amusement will offer maximum efficiency with the least waste of physical and economic energy.

Before carrying out any operation, we strongly recommend that this manual be carefully read as this will ensure the correct and rational accomplishment of every intervention.





DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH
GOV W AVERELL HARRIMAN
STATE OFFICE BUILDING CAMPUS
ALBANY, N. Y. 12240

PREPARE
IN
DUPLICATE

STATEMENT OF LOAD TEST
FOR PASSENGER CARRYING AMUSEMENT DEVICE

1 TYPE OF AMUSEMENT DEVICE AND NAME DEVICE IS KNOWN BY <u>Roller Coaster - Mark I</u>	
2 NAME AND ADDRESS OF OWNER OF THE DEVICE <u>CONKLIN Shows, Inc. P.O. Box 16367 West Palm Beach FL 33416-6367</u>	
3 IDENTIFICATION NUMBER <u>0366</u>	4. DEVICE MANUFACTURER'S NAME AND ADDRESS <u>S D C - Italy</u>
5 NORMAL MAXIMUM SPEED <u>40 MPH</u>	
E CARRYING CAPACITY	
A NUMBER OF PERSONS <u>4/CAR</u>	B WEIGHT <u>600/CAR</u>

7 STATEMENT OF PERSON MAKING TEST

On 5/20/92 the undersigned conducted a load test of the amusement device described above, and such device satisfactorily withstood the test prescribed in Code Rule 45, without failure in any material respect.

- a. Signature and title [Signature] RIDE SUPERVISOR
- b. Firm name and address CONKLIN SHOWS INC
WEST PALM BEACH - FLA. 33468
- c. Check appropriate box or boxes applying to signer
- Manufacturer of device
 - Insurance Carrier
 - Professional Engineer
 - OWNER

NOTE TO TESTER: Did a New York State Department of Labor Inspector witness the test described above?

No

Yes - Signature of Inspector

Juan R. Gonzalez

Date 5/21/92

*Forward original of this statement to the Program Manager, Industry Inspection Bureau, Division of Safety and Health, at the address above, and the duplicate to the owner of the device for his permanent record of test

DOSH-88 (2-89)

SEE REVERSE FOR EXTRACTS FROM INDUSTRIAL CODE RULE 45

ATTN: ROGER THOMPSON

4-15-1996 3:30PM

FROM CONKLIN SHOWS ROAD 3052291493

TO 913052291493 P.02

NY-02-1996 13:12 FROM NYS DUL/PESH

DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH
GOV W. AVERELL HARRIMAN
STATE OFFICE BUILDING CAMPUS
ALBANY, N.Y. 12240



PREPARE
IN
DUPLICATE

STATEMENT OF LOAD TEST
FOR PASSENGER CARRYING AMUSEMENT DEVICE

1 TYPE OF AMUSEMENT DEVICE AND NAME DEVICE IS KNOWN BY

Roller Coaster - Mack I

2 NAME AND ADDRESS OF OWNER OF THE DEVICE

Conklin Shows, Inc. P.O. Box 16367 West Lake Beach, Fl. 33416-6367

3 IDENTIFICATION NUMBER

0366

4 DEVICE MANUFACTURER'S NAME AND ADDRESS

SDC - ITALY

5 NORMAL MAXIMUM SPEED

40 MPH

6 CARRYING CAPACITY

A NUMBER OF PERSONS

4/CR

B WEIGHT

600/CR

7 STATEMENT OF PERSON MAKING TEST

On 5/20/92 the undersigned conducted a load test of the amusement device described above, and such device satisfactorily withstood the test prescribed in Code Rule 45, without failure in any material respect.

a. Signature and title

[Signature] Plant Supervisor

b. Firm name and address

Conklin Shows Inc
West Lake Beach, Fl. 33416

c. Check appropriate box or boxes applying to signer

- Manufacturer of device
- Insurance Carrier
- Professional Engineer
- OWNER

NOTE TO TESTER: Did a New York State Department of Labor Inspector witness the test described above?

No

Yes - Signature of Inspector

[Signature] Date 5/21/92

*Forward original of this statement to the Program Manager, Industry Inspection Bureau, Division of Safety and Health, at the address above, and the duplicate to the owner of the device for his permanent record of test

DOSH-88 (2-79)

SEE REVERSE FOR EXTRACTS FROM INDUSTRIAL CODE RULE 45

ATTN: ROGER THOMPSON

GENERAL FEATURES

The amusement mainly consists of a METAL LATTICE STRUCTURE which supports a TRACK on which run eight 4-place CARS..

A car departure and arrival STATION.

A system of CAR-PUSH units for movement and ascent to the highest point (Tab. 3).

A BRAKING system (Tab. 4).

A BRAKE OPERATION system (Tab. 6-7).

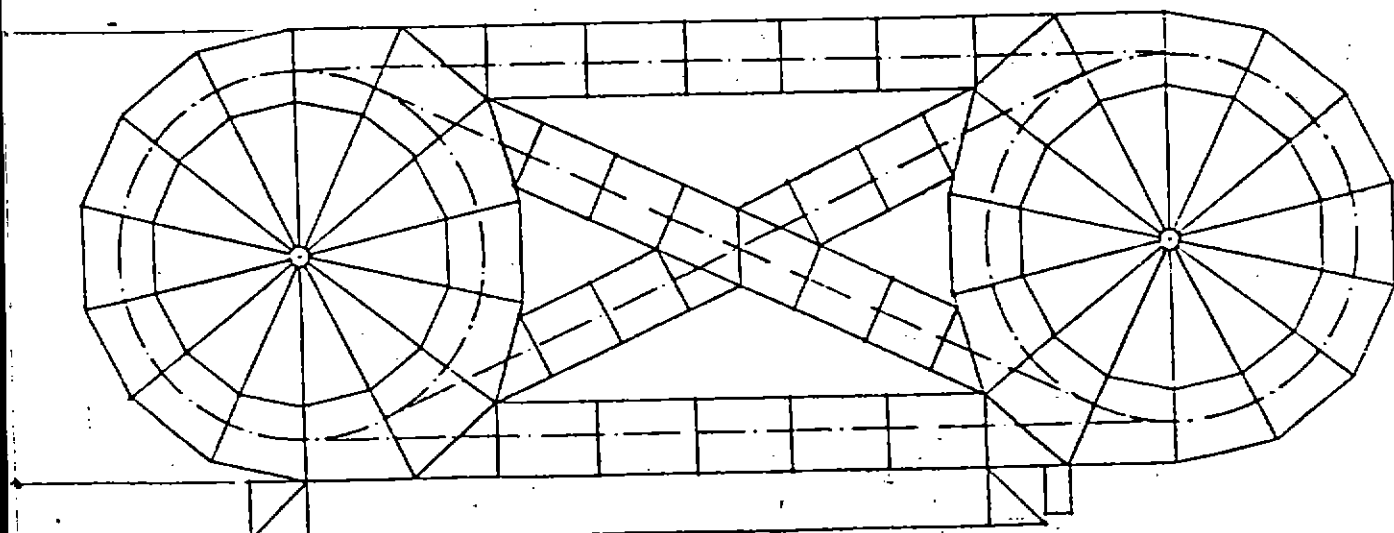
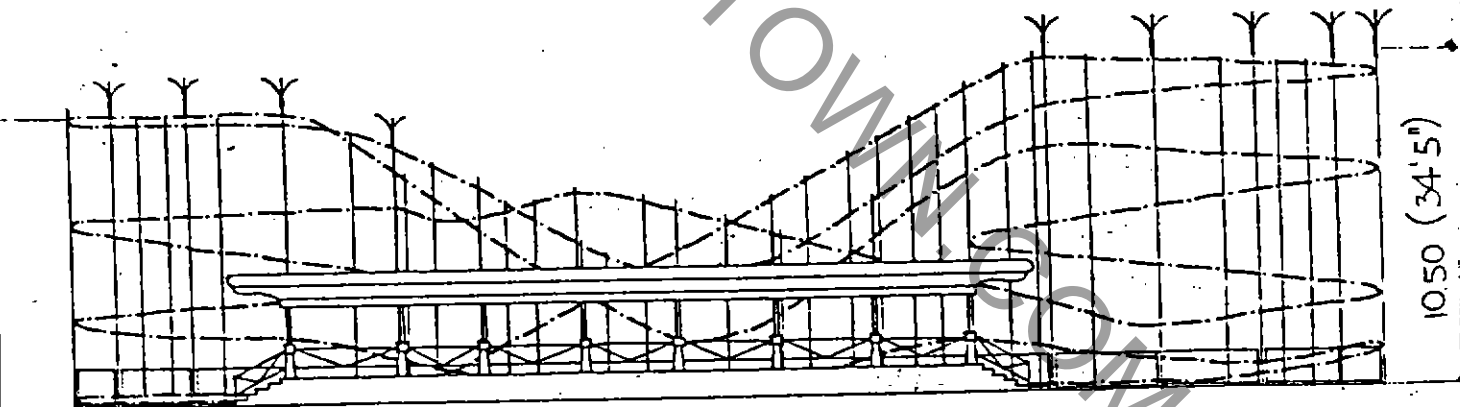
An ADDITIONAL SAFETY BRAKING SYSTEM (Tab. 7 fig. 2).

A "RACK" type safety system along the ascending tracks in order to prevent the cars from backing (Tab. 14).

An electric panel distributing LIGHT AND MOTIVE POWER (Tab. 24).

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OVERALL DIMENSIONS
DIMENSIONS D'ENCOMBREMENT

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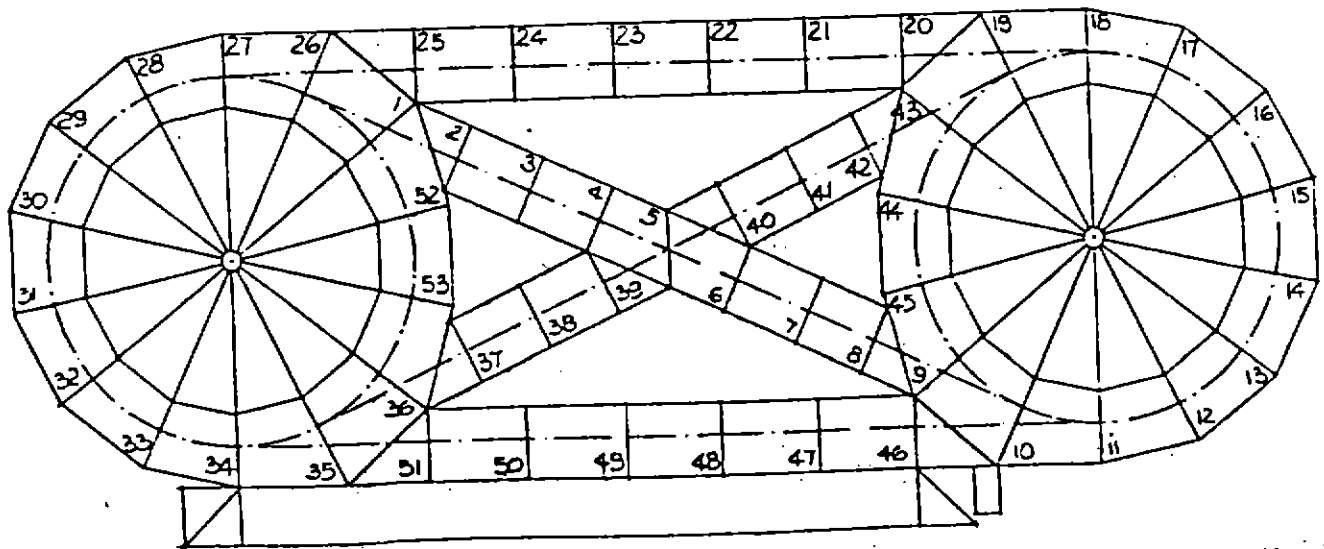
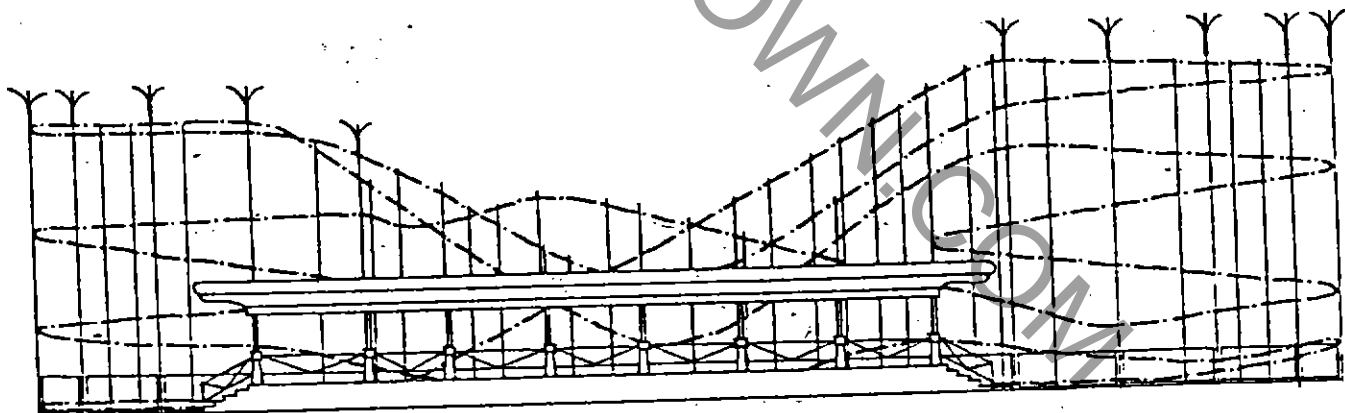


23.65 (77'7")

10.50 (34'5")

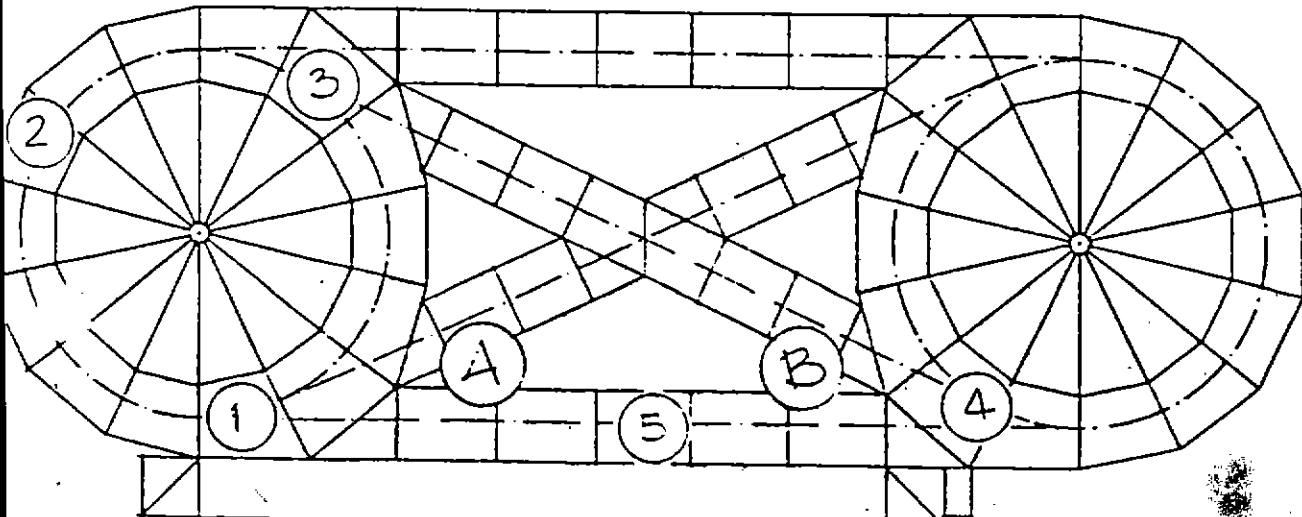
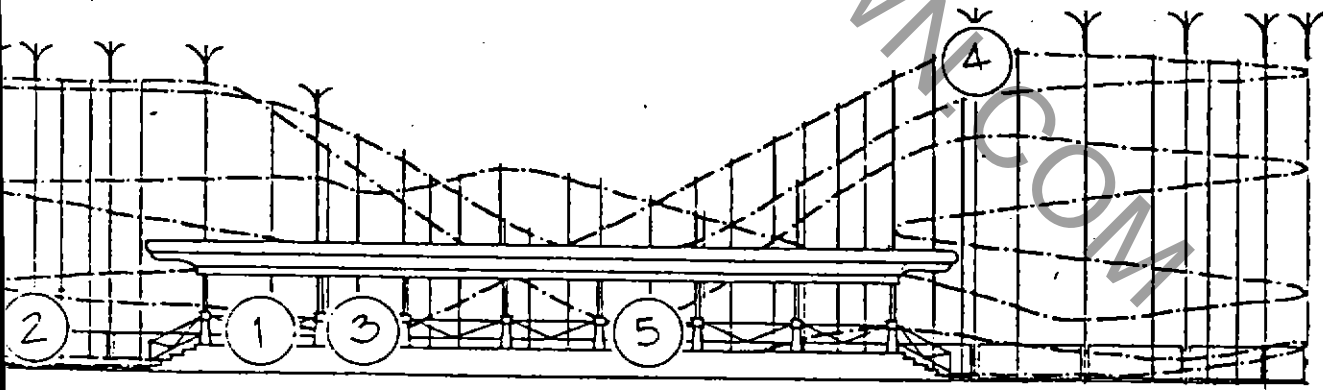
POSIZIONE "CAVALLE"
"JACKSTANDS" POSITION
POSITION "CHEVALETTES"

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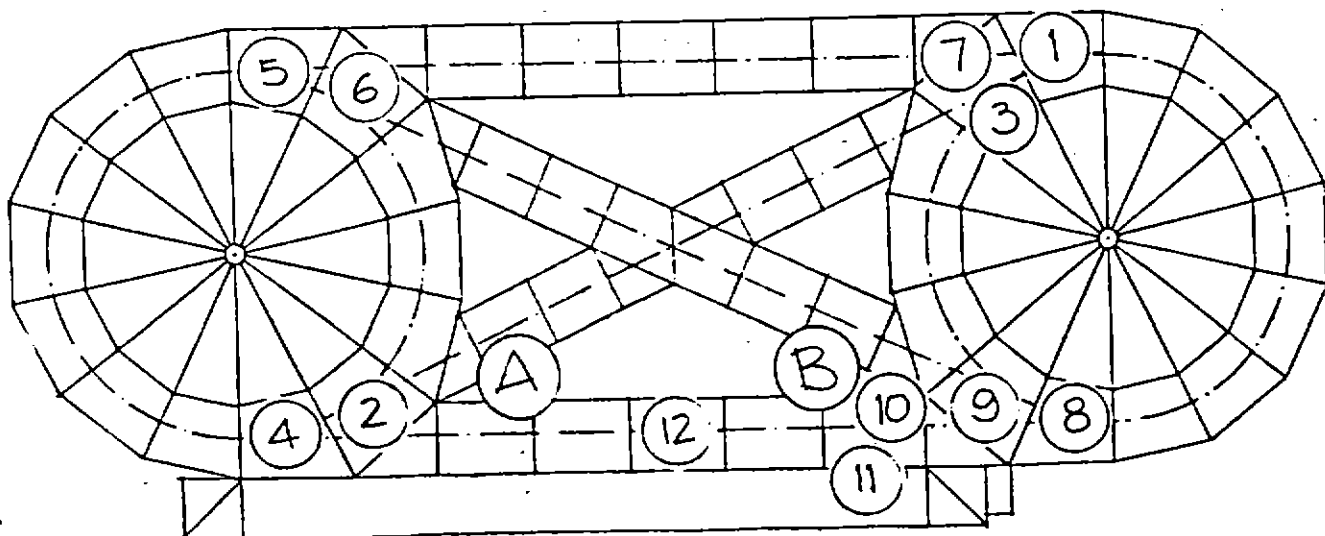
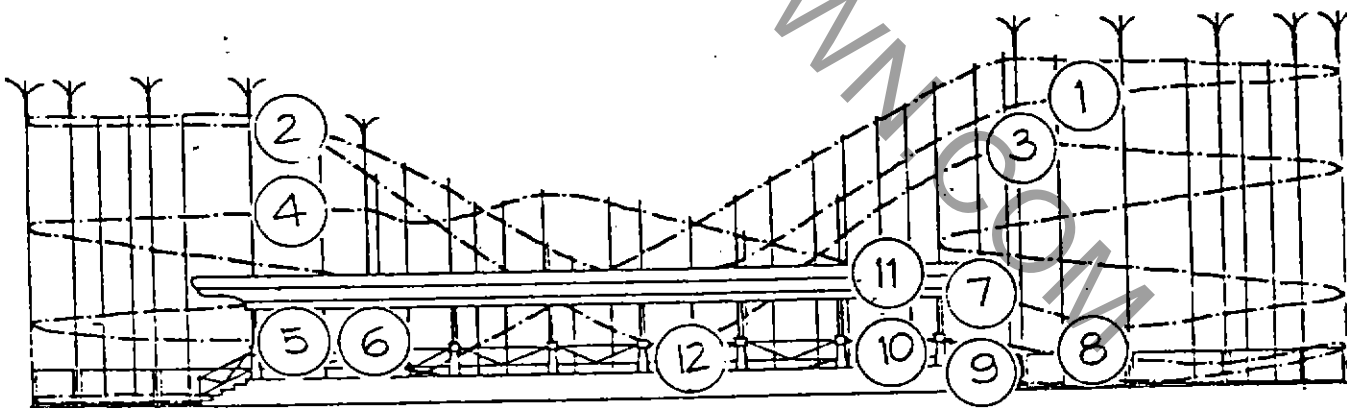
DISLOCAZIONE GRUPPI SPINGIVETTURA E COMANDI
CAR-PUSH AND CONTROL UNITS POSITION
DEPLACEMENT GROUPES POUSSE-VOITURE ET COMMANDES

CARNYTOWN.COM

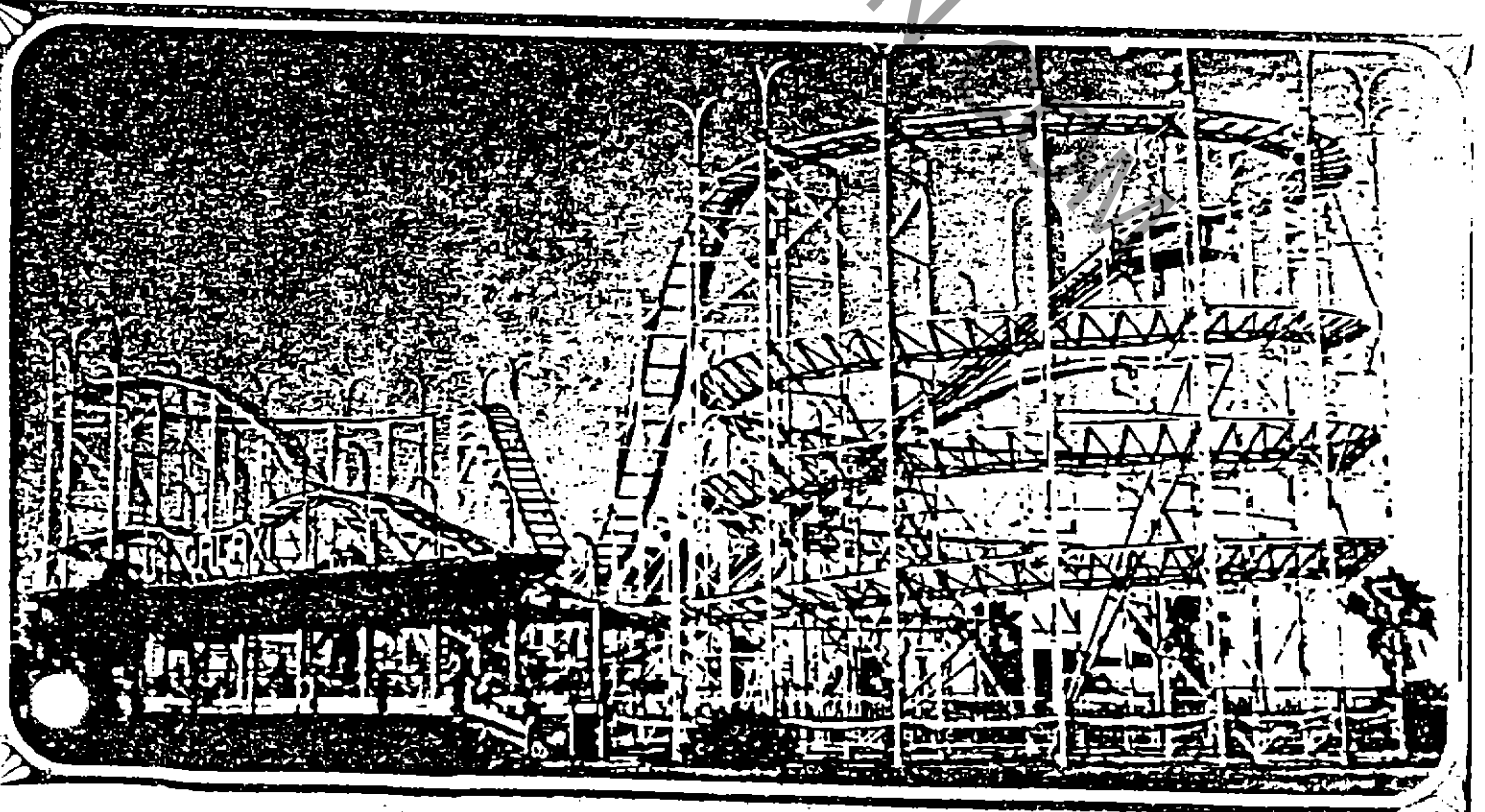


DISLOCAZIONE FRENI E COMANDI
BRAKE AND CONTROL BOARD POSITION
DEPLACEMENT FREINS ET COMMANDES

CARNYTOWN.COM



CARNY TOWN



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FOREWORD FOR OPERATION

2 operators are necessary for operation.

The first, in position A (Tab. 3-4) operates the levers that control:

- car starting
- control of brake 1-2-3-4-5-6-7
- brake adjustment
- safety shackle closing

The second, in position B (Tab. 3-4) operates the controls that act on:

- the brakes 8-9-10
- brake 12 automatically connected to car-push unit No. 5
- the additional safety braking system (Tab. 7 fig. 2)
- the hand-operated lever operating brake 10

SPECIFIC TASKS OF THE OPERATORS

TASKS OF THE POSITION "A" OPERATOR

- 1) Switch on the main switch on the electric distribution panel and start the compressor via the switch (Tab. 24).
- 2) Start the geared motor which in turn, will operate the chain and driving wheel, using the switch.
- 3) Start the geared motor using the switch.
- 4) Operate the geared motor input switch.
- 5) Using the pressure gauge pertaining to the brake control block 19 (Tab. 6), check that the pressure on the brake circuit is that suitable for operation (6-9 atm).

(The above mentioned operations should be accomplished once when the amusement is started).
- 6) Close the car safety shackles (Tab. 22).
- 7) Operate the car drive unit.
- 8) Conduct the brake control unit at the start (Tab. 6).

TASKS OF THE POSITION "B" OPERATOR

- 1) Operate the manual lever controlling brake No. 10.
- 2) Operate the lever which disengages brake No. 12 and contemporaneously operate geared motor unit No. 5.
- 3) Conduct the brake control unit at the arrival (Tab. 7 - fig. 1) and the emergency brake control unit (Tab. 7 - fig. 2).

OPERATIONAL DESCRIPTION

The passengers get into the cars (minimum 3 maximum 4) in zone A (Tab. 3-4).

The operator allows the SAFETY SHACKLE (Tab. 22) to descend and this locks the passengers in the car in a seated position.

Lever 18 Tab. 6 of control "A" will start the CAR-PUSH GEAR-ED MOTOR UNIT No. 1 (Tab. 3) which will initially drive the car.

This unit (see detail Tab. 8 fig. 1) consists of an electric motor, worm screw reduction unit, pin and wheel.

It operates via the tyre directly on the wooden beam 9 (Tab. 15) under the chassis.

A slight track slope will accompany the car until it reaches the CAR-PUSH UNIT No. 2 (Tab. 3) which differs from the previous unit only by the greater number of revolutions.

This unit operates continuously and enables the car to reach the....

ASCENT START UNIT No. 3 (Tab. 3).

This unit (see detail Tab. 10) consists of a PINION SHAFT, WHEEL SHAFT, WHEEL AND CHAIN.

Via this last, it couples TOOTH 11 (Tab. 15) under the chassis; acting again on the BEAM, the tyre 9 (Tab. 15) facilitates this operation.

The car then ascends until it reaches the top, attaining and overcoming the highest point while still being coupled.

Only a few decimeters beyond, where the descent part has already started, will the chain leave the car which continues running due to the force of gravity.

The above mentioned chain is operated by a CHAIN DRIVE UNIT No. 4 (Tab. 3) consisting (see detail Tab. 11) of an electric two-speed motor (enabling the use of two coupled cars), a reduction unit, pinion with flexible coupling.

- The higher speed is utilized with the single car
- The lower speed is utilized with the coupled cars

From this moment onwards (until arrival in the station), the car has no need for propulsion; it does, however, need the BRAKING AND STOPPING SYSTEM (Tab. 4) both in order to adjust the speed and to stop if required.

There are different types of brake (Tab. 12): the first (Tab. 12 fig. 1) operates as an emergency device, locking the car on the brake itself if necessary.

(It is always open, has a pneumatic cylinder to close it and two springs to reopen it once used).

Brakes 1-2-3 situated in points 1-2-3 of Tab. 14 are of this type.

The second type of brake (Tab. 12 fig. 2) operates normally as a slowing brake thanks to the springs which more or less firmly clamp the jaws between which blade 16 (Tab. 18) fixed to the car passes, but they can also be closed via the two levers of control system "A" which will consequently stop the car on the brake itself.

According to its position, this type of brake is identified by numbers 4-5-6-7 and is situated in points 4-5-6-7 of Tab. 14.

The Spring and plungers are initially set in the S.D.C. workshops; it is, however, possible to vary the intensity by operating in the way described in the relative chapter (INSTRUCTIONS FOR BRAKE USE AND ADJUSTMENT).

The third type of brake (Tab. 12 fig. 3) is structurally identical to the previously mentioned type and is operated from control position "B".

It is situated in the arrival station and is identified by numbers 8-9-10-12 of Tab. 14.

This sequence of three brakes normally closed by the springs alone, is regulated so that the car will stop as smoothly as possible.

It is, therefore, a "progressive closing" from brake No. 8 to No. 10 which enables the car to stop on the last.

In this case, the plunger serves to open this brake.

Besides by the lever in control unit "B", brake No. 10 is also opened by a manual mechanical lever beside the operator.

If the car should stop on No. 8 or No. 9, other two levers of control unit "B" operate on the relative opening cylinders. Once the brake has opened, the car will slowly proceed thanks to a slight track slope, until it reaches the CAR-PUSH GEARED MOTOR UNIT No. 5 (Tab. 3) positioned just before the BRAKE No. 12.

These two components act in concomitance and are operated by operator "B" when brake 12 is opened, automatically starting geared motor 5 and allowing the car to proceed forward for a further passenger load.

"RACK" TYPE SAFETY SYSTEM

Besides the braking system designed in order to block the car in case of emergency and to moderate the speed during operation, there is a "RACK" type safety system along each track ascent.

This item prevents the cars from backing downhill is (for various reasons) there is not sufficient inertia to overcome the ascent.

One of these racks (not visible to the operator like the others), has been automatically connected to the previous brake (No. 11) which consequently acts without requiring an intervention from the operator himself (consult the AUTOMATIC BRAKE chapter for more detailed explanations). For safety reasons concerning the distance between the cars, the time between one start and the next must not drop below 18 seconds.

18 seconds is the average time employed by the car to approximately reach half way up the initial ascent: this means that the operator must start a car when the preceding one is exactly in this point.

TYPE AND POSITION OF THE CAR-PUSH UNITS
(see Tab. 3)

UNIT 1 (Geared motor)

On starting, this starts the car.
Has 1400 rpm engine.

UNIT 2 (Geared motor)

Installed half-way between the station and the ascent chain.

It is designed to allow the car to proceed to unit 3. It differs from unit 1 owing to its 2800 rpm engine.

UNIT 3 (Ascent start)

This facilitates the phase during which the car is coupled to the chain.

It does not have its own engine but is driven by the chain of unit 4.

UNIT 4 (Chain drive)

At the top of the ascent. This is the mechanism that operates the chain and, consequently, unit 3.

The two-speed electric motor enables the use of two coupled cars.

- high speed = single car
- low speed = coupled cars

UNIT 5 (Geared motor)

At the station arrival zone just before brake No. 12. It is designed to allow the car to proceed once the passengers have descended.

It is connected and operates after brake 12 has opened and differs from units 1 and 2 owing to its SELF-BRAKING 1400 rpm electric motor.

DESCRIPTION OF THE SELF-BRAKING SYSTEM

The Rollercoaster is equipped with brakes designed both to slow the car along the track and to stop it at its arrival in the station or, in case of emergency, also along the track itself.

These brakes consist of two "L" sections to which a brake lining belt or bronze plate is fixed.

The brake leaf fixed under the car passes between these 2 "L" shaped pieces; by nearing to each other, these "L" shaped pieces tighten the car brake leaf between them, allowing travel to slow or stop according to the exercised pressure.

The nearing of these two "L" shaped pieces is accomplished by pneumatic plungers or springs, according to the type of brake.

The braking system consists of a compressor which sends compressed air to a main control "A" situated in the car start zone and to a secondary control "B" situated at the car arrival zone by which it is possible to control the plungers of each brake via distributor valves.

LAYOUT OF THE BRAKING SYSTEM

BRAKES Nos 1-2-3 (emergency)

Always open. They close in the event of emergency and block the car on the brake itself.

The system consists of a pneumatic plunger to close the brakes and springs to open them.

The brakes are operated by CONTROL UNIT "A".

BRAKES Nos 4-5-6-7 (for slowing and emergency)

Normally half-closed or open to slow or not slow the car; they can be totally closed to block the car via the pneumatic plungers.

The two pneumatic plungers (one to close and one to open) and the two springs are set to sufficiently close for possible slowing.

They can be remote controlled by CONTROL UNIT "A".

BRAKES Nos 8-9-10 (for station arrival)

Normally closed in progression (less No. 8, more No. 10) by the set springs only.

The pneumatic plunger opens them.

They are controlled by CONTROL UNIT "B".

BRAKE No. 11 (Automatic)

Always open. This automatically closes via a pneumatic plunger.

BRAKE No. 12

Always closed by the set springs only. A pneumatic plunger opens them.

The brake is operated by CONTROL UNIT "B".

BRAKES TO BLOCK THE CARS
(used in the event of emergency)
Tab. 12 fig. 1

Brakes Nos 1-2-3 are of this type

Springs 4 are mounted in order to keep the brake in an open position.

The car normally passes freely. Only one plunger 1 is mounted; when necessary, this will block the cars by acting against the springs and closing shoes 8.

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SLOWING AND EMERGENCY BRAKES

(Tab. 12 fig. 2)

Brakes Nos. 4-5-6-7 are of this type.

Springs 4 are mounted so as to keep the brake in the always closed position (shoes 8 neared).

Plunger 1 is mounted as as to help the action of springs 4 and tends to close the shoes, appropriately regulating the work pressure to plunger 1 via the POSITION "A" control levers (each of which controls a brake) in order ti create more or less efficient car braking on the projection of these brakes.

This slowing system is necessary since the initial speed of the car can vary according to the air temperature and humidity (eg. afternoon or evening - fair or rainy weather).

The same plunger 1 can stop the car in the event of an emergency.

It is sufficient, in fact, to use all the available pressure in order to enable the shoes to close completely.

If no type of slowing is required (brake open), it will be possible to use plunger 10 which, acting in contrast to the springs, will completely open the shoes and allow the car to freely pass.

After a certain amount of practice, this speed can be easily adjusted in a very short time (2-3 car passages) and, usually once a day unless there are climatical variations.

SLOWING AND STOP BRAKES IN THE ARRIVAL STATION

(Tab. 12 fig. 3)

Brakes Nos 8-9-10-12 are of this type and are operated by operator "B".

Springs 4 are mounted so as to keep the brake always closed; if operated, plunger 10 overcomes the force of the springs and causes shoes 8 to open, thus enabling the leaf mounted under the car to pass between them.

The arriving car reaches brakes nos 8-9-10 regulated in a gradual way, brake No. 8 which is more open than No. 9 and brake No. 9 which is more open than brake No. 10 will (if perfectly adjusted) stop the car on brake No. 10.

By means of the relative valve, the operator will deliver air to plunger 10 which, by opening the brake shoes, will release the car.

Owing to a slight track slope, this latter will reach brake No. 12 and definitively stop.

Once the passengers have descended, the operator will operate the control to open brake No. 12; this will automatically start geared motor unit No. 5 which will push the car into the parking area.

This type of brake is also equipped with a second plunger controlled by the supplementary safety braking section which opens the brake in case of necessity (see chapter on the "SUPPLEMENTARY SAFETY BRAKING SYSTEM").

AUTOMATIC BRAKE
(Tab. 12 fig. 1)

Brake No. 11 is of this type

If the car fails to overcome the bump above the station owing to the weather conditions (poor track sliding capacity), excessive lubrication of wheel bearings or for other reasons, there is a safety system which operates automatically according to requirements.

In the ascent between jackstands 21-25, there is a safety "rack" (Tab. 14).

Instead of being fixed to its support, it is mounted on 2 guides (Tab. 14) which enable it to lightly slide on the track. A spring 7 (Tab. 14) always keeps the rack pointing upwards.

If the car fails to overcome the maximum ascent point and backs downhill, the safety device fixed to the chassis will strike against the teeth of the rack, overcoming the force of the spring and moving the rack downwards.

Owing to projection 3 (Tab. 14), valve 6 opens and operates brake No. 11 while, via micro 5, an acoustic and luminous signal switches on in order to warn the operators "A" and "B" of the inconvenience.

(see chapter on TROUBLESHOOTING AND REMEDIES).

SUPPLEMENTARY SAFETY BRAKING SYSTEM

(Tab. 7 fig. 2)

Concerns brakes nos 8-9-10-12.

If the main braking system should remain without air (eg. breakage of a pipe) it is equally possible to unblock the car from the arrival brakes in the station thanks to a system similar to the main one, but equipped with a completely independent pipe supplied by a self-contained tank equipped with a CHECK VALVE which prevents the air from returning to the main system.

With this reserve and by operating the relative levers, it is possible to disengage the above mentioned brakes and allow the cars to proceed.

This allows the operation of the second plunger 11 (Tab. 12 fig. 3) which was described in the chapter concerning brakes nos 8-9-10-12 (SLOWING AND STOP BRAKES IN THE ARRIVAL STATION).

On receiving air, this overcomes the force of the springs, opens the brake shoes and enables the car to proceed.

The reserve of the tank pertaining to this system is, however, limited (unblocks 4 - 5 cars); besides not allowing any car to start from the station, it is also absolutely necessary to stop the ascent chain.

INSTRUCTIONS FOR BRAKE USE AND ADJUSTMENT
OPERATOR A (Tab. 6)

First check that the pressure of the air in the small tank is between 6 and 9 atm.

For correct brake operation, the pressure must not fall below 6 atm.

The brake control consists of two parts: the closing or emergency part (right) and the opening or slowing part (left).

The closing or emergency part is only used when it is necessary to stop a car on a particular brake, marked with the number corresponding to the distributor, or when there is an emergency. To stop the car on the required brake, just lower the corresponding distributor lever; this will deliver air to the plunger which closes the brake itself.

For the total emergency operation, just lower lever 11; this will automatically close all the brakes in a single movement.

NOTE: When accomplishing the emergency operation, remember to also stop the ascent chain motor.

The opening or slowing part is the most used since when the amusement operates, there will be certain weather conditions (rain, damp, hot, cold, etc.) requiring an intervention to normalize the speed.

Brake No. 4 can be considered as an example.

With the distributor in position D, the brake will be completely open; i.e. there will be air under pressure in the plunger controlling the opening movement (tank pressure).

In this position, the car will freely pass over the brake.

When the distributor is in position E, the brake will be in the slowing position; i.e. the two plungers (for opening and closing) will be without air, but the brake will be kept closed by the springs.

The pressure with which the springs keep the brake closed is set in the S.D.C. workshop during the testing phase.

This setting should only be varied in the event of particular cases or according to the judgement of the installer.

If it should be necessary to increase the slowing power (insufficient spring pressure), lower distributor 12 (Tab. 6) then, using screw 12a of the pressure reducer, adjust the pressure itself to a sufficient value in order to obtain the required slowing (in practice, check this by accomplishing a few trial runs).

With this operation, the air (at the pressure marked on the reducer pressure gauge) passes from the tank to the brake closing plunger via the distributor exhaust which closes the brake itself.

The brake therefore remains closed owing to the pressure of the springs, plus a pressure of the plunger proportional to the factory setting of the pressure gauge.

To relieve additional pressure, lift distributor 12 in order to relieve the brake closing plunger.

Operate in the same way when adjusting brakes Nos 5-6 (lever No. 14 Tab. 6) and brake No. 7 (lever No. 16 Tab. 6).

CHECKS TO BE CARRIED OUT DAILY

CARS

WHEEL CHECK:

Allow the car to pass over the start device (Tab. 9), slightly raise the equalizer (Tab. 20) with a lever and manually turn the now free wheels 36, checking:

- the degree of smooth running (if too "hard" or with too much clearance between taper bearing and pin);
- the clamping of screws 37 which lock the bearings;
- if the plastic (nylon) material used for the wheels is in a perfectly whole condition.

Also check that the safety split pins 40 of nuts 39-43-44 are in a perfect condition.

If necessary, reset the distance between the track and stabilizer wheel 41.

Repeat the same operations for the rear axle.

Check the degree of wear on the safety device 10 (Tab. 15) and the perfect position of tow hook 11 for car ascent.

Check that the wooden beam 9 on which the car-push units act is enbloc with the rest of the chassis.

If the cars travel coupled, check that the connection joint (Tab. 23) is perfectly efficient and the universal joint bolts are accurately clamped.

CAR ASCENT CHAIN

- check the tension
- ascending, check that once the chain starts, all the draft pins are perfectly inserted.

BRAKES

Check:

- that there are no air leaks from the quick couplings.
- that the pipes are in a perfect conditions.

Allowing the car to turn, check that leaf 16 (Tab. 18) enbloc with the car, does not lock on the immediate contact of the brake, but at about 2/3rd of its length (this since the impact of the force of inertia on the public must be as soft as possible).