



MASCHINENFABRIK

OPERATING INSTRUCTIONS

for the

"PIRATE" BOAT SWING

MFG: HUSS-HEINER, WILHIEM,
CO.
NAME: PIRATE SHIP
TYPE: NON-KIDDIE

I.	General References	pages 1 - 5
	1. Contents	
	2. Acceptance Certificate	
	3. Responsibility of Managers and Operators	
II.	Erection and Dismantling	pages 6 - 10
III.	Regulations for Daily Operation	pages 11 - 12
IV.	Maintenance and Lubrication	pages 13 - 16
	A) Cables	
	B) 75-kW Electric Motor	
	C) Reduction gear	
	D) Frictional wheels	
	E) Bearings	
	F) Hydraulic system	
	F1) Swing-bolt hydraulics	
	F1.1 Oil tank	
	F1.2 Magnetic needle	
	F1.3 Hydraulic pump	
	F1.4 Hydraulic motor	
	F1.5 Lift cylinders	
	F1.6 Hoses	
	F1.7 Diaphragm-type accumulator	
	F1.8 Winter operation	
	F2) Hydraulics for railing interlock	
	F3) Hydraulics for erection	
V.	Safety Regulations for "PIRATE BOAT SWING"	pages 17 - 19
VI.	Maintenance Instructions for Fiberglass Surfaces	page 20
VII.	Drawing	
	No. 1-8.00 Amusement Swing	page 21
	No. 1.8.01 Cylinder operation valve	page 22
	No. 1-8.02 Crank and Cylinder	page 23
	No. 1-8.03 Shockwave valve unit	page 24
	No. 3-8.05 Hydraulic plan for railing, interlock device	page 25
	No. 1-8.C Hub bearing	page 26
	No. 1-8.D Floor with supports	page 27
	No.G2-8.16.E Hydraulic plan	page 28
	No.B1-8.18.B1.1 Transport Frame for Suspension	page 29
	No. 1-19741 Plan of erection	page 30



MASCHINENFABRIK

VIII. Instructions of the Manufacturers	
Trailer axle, Sauer Company	page 31
Operating Instructions, Linde Company	page 32-
Spare Parts List for "Linde" PV 186 T	page 33
Spare Parts List for "Linde" PR 35 T	page 34
Spare Parts List for "Linde" BMF 105 T	page 35
Operating instructions for geared motor, SEW Company	page 36
IX. Electrical System Plans, Hartig Company	page 37 - 46

CARNYTOWN.COM



MASCHINENFABRIK

ÜBERNAHMEPROTOKOLL
ACCEPTANCE CERTIFICATE

für
for

Rundfahrgeschäft
"PIRATE"
Amusement Ride

Auftrag-Nr.:

Order No.:

Die ordnungsgemäße, vollständige Aufstellung, Übergabe und Einweisung ist gemäß Kaufvertrag vom an den Käufer/ oder dessen Stellvertreter, Fa. erfolgt am

The proper, complete erection, handing-over and introduction of the buyer/ or his representative to the operation of the ride in accordance with the sales contract of has taken place on

Die Betriebs- und Wartungsanleitung sowie die gesonderten Hinweistafeln wurde übergeben/zugesandt und erklärt. Jeder Besitzer dieses Fahrgeschäftes ist verpflichtet, sich beim Herstellerwerk einweisen zu lassen und sich die neueste Fassung der Betriebs- und Wartungsanleitung aushändigen zu lassen.

The Operating and Maintenance Instructions as well as the separately given informative signs have been handed over/sent and explained. Every owner of this ride is obliged to obtain introduction to the operation from the manufacturer and to have the Operating and Maintenance Instructions - latest edition - handed over to him.

Bremen,

Hersteller
Manufacturer

Käufer
Buyer



MASCHINENFABRIK

4

RESPONSIBILITY OF MANAGERS AND OPERATORS

The following remarks are a compulsory condition for the safe operation of the ride:

1. In all cases the manager is ultimately responsible for the safety of passengers during operation of the ride.
2. Selection of operators must correspond to the demands made on them regarding operation of the ride.
3. The operator must devote his undivided attention to the operation of the ride.
4. He must be acquainted with the functioning of the ride, its safety devices, emergency devices, operating instructions and regulations, and ensure the safety of passengers and safe running of the ride.
5. He must have complete and safe control over the unloaded ride before he operates it with passengers.
6. If a malfunctioning occurs operation must cease immediately.
7. Malfunctioning may often be detected by a change in noise during operation. If this occurs, one should look for the cause and, if necessary, get in touch with experts to find the reason for any malfunctioning.
8. The operator must insist on maintenance work being carried out, as it is described in detail in the operating instructions. If he does not, he is obliged to cease operation.
9. Before initiation the operator has to check the ride on its perfect working condition by performing the ordered controls and the trial runs.
10. The carrying parts as well as the motor driven parts are to be checked on perfect working condition before each initiation. Damaged parts are to be substituted by perfect ones. Furthermore it has to be observed that the ride is in safe upright position during erection and dismounting. After erection all parts have to be orderly connected and all connecting parts and necessary anchorages have to be mounted in a safe way.
11. The complete operating instructions provided by the manufacturer have to be kept at hand in the operator's stand so that the operator can have a look at them at any time. Upon loss, the manufacturer has to be immediately requested to provide a new copy of the complete operating instructions.
12. During repair and maintenance works, the ride must be currentless, i.e. the main switch in the switch cabinet must be switched off. Should it be necessary to carry out maintenance work while the ride is in operation, an additional person to control the switch board is required.



MASCHINENFABRIK

5

13. When carrying out repairs involving welding work it is essential to make sure that the welding current does not flow through bearings or other sensitive parts; in other words, the ground electrode must always be fitted close to the point of welding.

Welding repairs may only be carried out by properly approved specialist companies.

CARNYTOWN.COM



MASCHINENFABRIK

6

II. ERECTION AND DISMANTLING

1. Level the standing positions for the 4 support blocks (1) and (2) as per Drawing No. 1-19741. The height of the standing positions of (1) and (2) is equal to the highest ground level.
2. Drive the frontage (3) to the planned central point.
3. Swing away the mud guard from the front axle.
4. By means of the 4 hydraulic cylinders (4), raise the frontage, so that both rear bolts can be removed from the rear chassis, then remove the rear bolt from the front chassis.
5. Let down the lower edge of the frontage until it is 2 inch (50 mm) above the standing positions of the supporting blocks and support.
6. Fasten on the supporting blocks with bracings and connection brackets and support. Note the right angled positioning of the connecting brackets with respect to each other as per Drawing No. 1-19741.
7. Mount the stabilizers (5) on the bracket, support fully the plates (6), 50 x 50 inch (1250x1250 mm).
8. Assemble the lower half of the post mounting (7) according to Drawing No. 1-19741.
9. Bolt the posts (8) to the supporting blocks (2) and place on the post mounting (7).
10. Screw the upper halves of the posts (9) to the post (8). The nuts (10) should be tightened to 295 ft lb (400 Nm) using a torque wrench, and should be secured with locking pins. See Drawing 1-8.00, detail " Y ".
11. Mount the upper half of the post mounting (7).
12. Bolt the posts (11) to the support blocks (1) and place on the post mounting.
13. Screw the upper halves of the posts (12) to the posts (11). The nuts (10) should be tightened to 295 ft lb (400 Nm) using a torque wrench, and should be secured with locking pins.
14. Bolt the short tie bars (13) to the posts (11).
15. Bolt the cross head (14) to the short tie bars (13) and spacing bars (15).
16. Bolt the cross head (14) to the long tie bars (16).



MASCHINENFABRIK

7

17. Mount the erection cylinder (17) between the support bracket and the cross head (14).
The cylinder should first only be attached to the cross head.
18. Connect the hydraulic hoses to the erection cylinder (17) and then bolt on the bottom of the cylinder.
19. Using the erection cylinder (17) raise the posts (11) and (12) slightly.
20. Clean away any paint and dirt from the sliding parts of the 4 post heads and grease liberally, do the same to the 4 post cups on the hub.
21. Using the crane girder slide the hub (18) onto both posts (12). The connection between post (12) and hub (18) is made using the laminated spring (19) and the M24, bolts (20). Extend the laminated spring (19) to its limit, then loosen off the hex nut by two turns. Lock the safety nut and secure with locking pins. (See Drawing No. 1-8.00, detail " X ")
22. Turn the holder (21) for the suspensions (22) and (23) on the hub (18) so that the latter points vertically downwards.
23. Bolt the erection crane (24) to the hub.
24. Erect the erection scaffolds (25) and (26).
25. Mount the lighting box (27) onto the erection scaffolding (26).
26. Mount the cable ducts onto the posts (11) and (12).
27. Insert the electric cable and connect the plugs.
28. Mount the locking pins to secure the electric cables.
29. Erect the frame (28) for the name board (29) on the front posts. Note the assembly instructions on Drawing No. 1-8.00.
30. Mount the lighting strips on the front post (11).
31. Using the erection cylinders (17) raise the hub enough, so that the holder (21) for the suspension (22) is over the bow, and can be rotated to the position for holding the suspension.
32. Remove the bolt (30) between the transport frame and suspensions (22) and (23).
33. Slide the suspension forwards and bolt to the holder (22).
34. Raise the hub slightly.
35. Remove the upper plastic roller (31).
36. Slide the suspension (23) forwards and bolt to the holder.



MASCHINENFABRIK

37. Connect the electric plugs, suspension/hub.

WARNING !

When erecting the post no-one should stay within the area of the swing. The raising of the post is controlled from outside, i.e. outside the base frame.

38. Raise the hub sufficiently and at the same lower the cables (32).

WARNING !

Both erecting cylinders must be extended uniformly so that the posts are always parallel.

39. Mount the adjustment bar (33) between the posts (8) and adjust the spacing at the post heads to 126 inch (3200 mm). The connecting bracket between the support blocks (2) must be hung in place for this operation.

40. Mount the cable holders on the posts (8) and (9) and install the cables.

41. Install the lighting strips on the front post (8).

42. Using the erection crane (24), raise the posts (8) and (9) until they are under the post holder.

43. Using the erection cylinder (17) lower the hub sufficiently, so that the posts slide into the holder, at the same time correspondingly adjust the cables.

44. The connection between post (9) and hub (18) is made using the laminated spring (19) and the M24 bolts (20). In order to bolt them together, the erection cylinders (17) are driven together sufficiently so that the bottom brackets are lifted a little clear of the central support block. Do not drive the erection cylinders (17) apart again, this happens automatically. Extend the laminated spring (19) to its limit, then loosen off the hex nut by two turns. Lock the safety nut and secure with locking pins.

45. Loosen the cable from the front post (9) and swing the erection crane (24) 90° to the front, then secure.

46. If a rear panel is to be installed the adjustment bar (33) must be removed.

47. By inserting the bolts from the exterior, bolt both the short suspension members (34) to the stern of the ship.

48. Insert the cross bar (35).

49. Attach the hawser to the suspension (23).

50. Tighten the hawser slightly and remove the erection triangles (36).



MASCHINENFABRIK

9

51. Swing the suspension (23) to the centre of the ship.
52. Pull the suspension (23) until it can be bolted to the short suspension members. Insert the bolts from the exterior. For this operation the front frontage must be lifted from the support by means of the two hydraulic cylinders (4) .
53. Install the tension rods (37) and tighten the turn buckles by hand as far as possible and secure against loosening with a locknut.
54. Using the two rear hydraulic cylinders (4) lift the rear frontage from the support and after inserting the bolts from the exterior, bolt the suspension (22) to the ship .
55. Remove the erection roller guide and rollers.
56. Remove the 4 transport bolts between the frontage and the ship panelling (bow and stern).
57. Swing the bar and stern upwards and bolt together.
58. Remove the 4 plates (38) from the ships anchorage to the frontage and the transport pipes (39) .
59. Re-place the frontage (3) on the support areas.
60. Align the ship by means of the alignment plates which are mounted in the bow and stern sides of the frontage. Correct the support areas of the frontage if necessary.
61. Attach the bolts (40) together with spaces (41) to the ship suspension as per Drawing No. 1-8.00, section A-A. Tighten nuts (42) by using a torque wrench set to 148 ft lb (200 Nm) and lock, retighten tension rods (37) and lock.
62. Connect the electric cable.
63. Erect the stern superstructure (43) and mast with crows nest (44) and sail.
64. Erect the name board frame (29) , attach the name plate, and using the erection crane (24) raise bolts and secure.

WARNING !

All bolts should be secured with locking pins !

Floor

65. Lay out the floor support and frame as per Drawing No. 1-8.D, support bolt and secure with locking pins.
66. Mount the rie rod for the rear panel support as per Drawing No. 1-8.D.
67. Install the floor covering and railings.



MASCHINENFABRIK

Rear panel

68. Bolt the rear panel post (45) and the connecting stays (46) to the floor supports in the right order and at the same time suspend the cross beams in position. In the centre of the rear panel suspend the cross stay.
69. By means of the cross stay align the rear panel posts until they are exactly vertical.
70. Hang the facade sheeting.

Dismantling is carried out exactly in the reverse order. In this case care should be taken to loosen all electric cables at the correct time.

Before dismantling, the bolts M24x180 also provided, are to be used to force off the hub from the post.

W A R N I N G !

Prior to putting the ride into operation, check for correct phase sequence resp. direction of rotation of the electric motors.
Watch the indicator lamps !



MASCHINENFABRIK

11

III. REGULATIONS FOR DAILY OPERATION

A) Daily start-up procedure is as follows:

1. Check the oil lever, i.e. the oil level gauge on the side of the oil tank must be filled to the centre.
2. In cold weather, close the valve on the ventilation tank near the 75-kW-drive motor.
3. Switch on the main electric switch.
4. Switch on the hydraulics and allow to run unloaded for approx. 10 min. In cold weather, operate the hydraulic system for approx. 1 hour without load, i.e. only the main drive should turn.
At extremely low temperatures additional measures are necessary - see maintenance instruction - F 1.8 winter operation.
5. The bearings in the hub section of the swing frame must be greased approx. once a week using ESSO multi-purpose grease "BEACON.EP.2". 2 x 3 grease nipples are provided for this purpose. While the grease is being pressed in, the boat should be allowed to swing slightly.
6. Check the air pressure of the friction wheel tyre once a week 130 psi (9 bar).
7. Check that all bolts are secured by safety pins.
8. Check that all safety signs are placed in such a manner as to be easily legible.
9. Make at least three complete runs with the empty ship and with all control possibilities. At the same time check the supports.
10. After a proper test run the amusement can be opened to the public.
11. All safety barriers must be closed at all times during the ride !
12. Prior to closing the safety barriers, it is imperative to make sure that all passengers are sitting upright. !

B) Shutting Down:

1. Switch off the control in the control panel and lock the control panel.
2. Switch off the main power switch in the switchgear cabinet and lock the cabinet.
3. In cold weather, re-open, i.e. unscrew the valve on the ventilation tank.



MASCHINENFABRIK

C) Exceptional operational circumstances:C1 Power failure

1. In the event of a power failure the ship can be braked by means of the hand pump (73). Subsequently because of oil-shortage the Hydro-motors could fail.
2. Prior to restarting the handwheel (72) must be turned inwards. After the hydraulics have run for approx. 30 secs., turn the handwheel in the opposite direction.

C2 The railings in the ship do not open

1. Turn the hand valve at the hydraulic unit (58) from the central position by means of a key, the rails can then be moved by hand.

Prior the operation the hand valve must be turned to the central position once more, otherwise the railings are not locked.

IV. MAINTENANCE AND LUBRICATIONA) Cables

1. All cables should be checked before erection and if necessary should be replaced by new cables of at least the same quality.
2. When dismantling and when loading the crane girder (24) take special care to ensure that the cable on the winding drum is not damaged.

B) 75-kW-Electric motor (47)

In the case of dust accumulation the motor should be cleaned with dry, compressed air at suitable intervals in order to remove deposits in the interior and on the ventilation openings. The 2 grease nipples should be kept clean. Lubrication should be carried out every 2000 running hours with ESSO multi-purpose grease "BEACON EP 2".

C) Reduction gear (48)

ESSO gear oil GP 90 HYPOID (SAE 90) should be used for the reduction gear. Necessary charge approx.

20 floz (0,6 ltrs) for gearing made by Sauer Company,

34 floz (1,0 ltrs) for gearing made by Puls Company .

First oil change after approx. 50 running hours, then every 1000 running hours. For filler and drain plugs see Drawing No. 1-8.00.

D) Friction wheels (49)

Michelin tyres 8.25 - 15 X PR 18 inflated to 130 psi (9 bar). When the thread depth is approx. 0,12 inch (3 mm) the tyres should be replaced. The fixing nuts of the rim should be checked for a firm seating at suitable intervals. The torque wrench provided should be used for this purpose. The individual nuts should be first loosened then tightened again to 317 ft lb (430 Nm).

E) Bearings

The hub bearings should be lubricated every approx. 30 running hours with ESSO multi-purpose grease "BEACON EP 2"
2 x 3 grease nipples (50) are provided for this purpose. When lubricating, the boat-swing should swing a little.

F) Hydraulic systems

The most important requirement for trouble free operation is a clean hydraulic system.



The presence of dirt in the hydraulic system causes a more rapid power drop at the pumps and shortens the service of all parts. Control operation can also be blocked as a result of dirt.

ESSO NUTO H68 (SAE 20) hydraulic oil is used for all hydraulic systems.

Always check there is enough oil. After a long shut down period (max. two months) as well as after an oil change, any air pockets which have built up, must be removed. For this purpose several vent points are provided.

F1) Boat-Swing hydraulics

F1.1 Oil Tank (51)

The hydraulic system contains in total approx. 8,8 ft³ (250 liters) of ESSO NUTO H68 (SAE 20) hydraulic oil. The first oil level check is after 50 running hours. Filter the oil and if necessary change. Further oil changes every 1500 running hours.

The oil tank should always be filled with new oil via a clean filter of filter porosity of at least 0,002 inch = 40 µm.

F1.1 a Filter

After the first 2 weeks of operation, check items No. (52) and (53) for accumulated dirt and clean as necessary. Repeat at suitable intervals.

F1.2 Magnetic needle

The magnetic needle is located in return flow filter No. (51) and must be cleaned daily during the first 2 weeks. Repeat at suitable intervals.

F1.3 Pump for the rotation unit (54)

Variable displacement, axial piston pump from Linde Co, Type PV 186 TG. The mounted easy change filter should be changed at suitable intervals, at least every oil change.

Pump for swing unit (55)

Axial piston regulation pump, Linde Co., Type PR 35 TS.

F1.4 Hydraulic fixed displacement motor (56)

The axial piston motors of Linde Co., Type BMF 105 are flange mounted directly on the reduction gear.

F1.5 Lift cylinders (57)

Two ventilation screws are provided on each lifting cylinder.



Fl.6 Hoses

All hoses have been given reference numbers, which should always be quoted when re-ordering. When changing and connecting a hose, check that it lies in a satisfactory manner (Hoses should only be bent in one plane !).

Fl.7 Diaphragm-type accumulator

This must be exchanged after approx. 1000 hours of operation.

Fl.8. Winter Operation

1. The small deaeration tank next to the 75 kW drive motor must be kept closed during operation and open during standstill. The tank is closed when the throttle valve at the top edge is closed.
Upon non-observation it may occur that the hydraulic pumps draw air out of this tank in cold weather, i.e. when the oil is thick. This can be seen in the transparent tubes. The hydraulic pumps will then make screaming noises which must be prevented for the sake of a long working life.
2. Before starting the first swinging operation, the hydraulic installation should run at standstill for approx. 1 hour. This means, only the 75 kW drive motor is running. A small control oil pump integrated into the big pump pumps over approx. 30 liters of oil per minute, thus producing the necessary warming.
3. During cold weather it may happen that during the braking process the change-over of the cranks starts with some delay. At the righthand side of the oil tank there is the crank control block with 2 mounted solenoids. Beneath the front solenoid there is a response retarding plate, 3 cm wide, with throttle Allen screws mounted vertically at the top and at the bottom (upper screw for bow crank, lower screw for stern crank). By unscrewing this Allen screw the response time is reduced. By exaggerating the reduction of the response time the cranks will change shocklike. In this case, the throttle valves must be somewhat screwed in. This can also become necessary during very warm weather.
A shocklike operation will, of course, have negative effects on the working life.

F2) Hydraulics for the railing interlock device

The hydraulic unit (58) with the oil tank is located in the stern of the ship.

The system contains in total approx. 1,4 ft³ (40 liters) ESSO NUTO H68 (SAE 20) hydraulic oil.

Filling the oil tank:

Open the filler plug. Fill with ESSO NUTO H68 (SAE 20) hydraulic oil from a clean vessel until the oil tank is full to the brim. Switch on the motor and raise the railing interlock by emergency hand activation of the solenoid valve.

Exhaust the cylinders. Press several times on the valve until the air is removed from the piping. Insert the test key into the groove of the equalization pot. In this position, fill the tank to the brim once more. Close the filler cap. Remove the test key and place it in its holder. When the cylinders are activated by the solenoid valve the tappet of the equalization pot moves. In the retracted position the tappet head should have approx. 0,4 inch (10 mm) clearance from the stop. Should it come into contact during operation the filling procedure should be repeated.

F3) hydraulics for erection

The hydraulic unit (59) with the oil tank is located at the end of the vehicle. The system contains a total of approx. 2,8 ft³ (80 liters) of ESSO NUTO H68 (SAE 20) hydraulic oil.



MASCHINENFABRIK

17

SAFETY REGULATIONS

for

AMUSEMENT SWING "PIRATE"

1. The equipment must be erected so that a sufficient distance is maintained away from houses, trees, electrical cables etc. min. 20 inch (0,5 m) in all positions of the swing so that passengers are not endangered .
2. The ride must only be erected on soil of sufficiently good bearing quality.
A permissible ground pressure of min. 29 lb/in² (20 N/cm²) is necessary . The centre structure, platforms, steps and floors must be supported in accordance with the specifications in Plan No. 1-8 D.
For the stationary model, the foundation must be designed for the bearing loads specified in the load analysis bzw. drawing.
3. In order to attain sufficient pre-tensioning, the following "M"_a torque values are necessary for the under-mentioned bolt connections. The bolts must be lightly greased when pre-tensioning.
 - a) M20 bolts, quality 8.8, to connect the lower diagonal brace of the suspension to the ship: M_a = 148 ft lb (200 Nm)
 - b) M24 bolts, quality 5.6, to connect the strut sockets to the axle: M_a = 170 ft lb (230 Nm)
 - c) M24 bolts, quality 8.8, at the flange connection of the struts (strut butts) M_a = 295 ft lb (400 Nm)After certain periods of operation, it is necessary to check the pretensioning. In any parts of the ride are found to have settled with time, these checks must be carried out more frequently.
4. The spring assemblies at the connection of the struts to the strut sockets (see Plan No. 1-8 "Amusement Swing") must be pre-tensioned by 0,13 inch (3,4 mm) by means of M24 bolts, quality 8.8.
5. All connections must be secured against accidental opening.
6. The control stand should be positioned so that embarkation and disembarkation of the passengers as well as opening and closing of the safety bars can easily be observed.
7. The following technical specifications must be observed for the drive wheels D = 32,9 inch (836 mm):
 - a) tyre pressure: 130 psi (9 bar)
 - b) minimum depth of tread: 0,12 inch (3 mm)



8. The equipment is not designed for snow loads. Should it be erected during the snowy season, any snow must be removed immediately.
9. The swing is designed for a maximum load of 54 adults, calculated at 165 lb (75 kg) per person; 3 children of less than approx. 10 years old and of a height of less than 4,5 ft (137 cm) may ride in place of two adult.
10. Leaning out of the ship, smoking and taking animals, umbrellas, sticks or other unwieldy or sharp objects onto the ship is prohibited.
11. Children under 8 years and of a height of less than 4,5 ft (137 cm) may ride only when seated together with adults on one bench.
Drunken people must not be allowed onto the ride.
12. The conditions as under 10 and 11 must be clearly displayed on notice boards.
13. The drive may only be switched on when,
 - a) all passengers are seated on the benches
 - b) all safety bars have been closed
 - c) no passengers are on the embarkation and disembarkation platform
14. The supervisory personnel must ensure that no passengers step onto the embarkation platform until the ship is stationary.
15. The equipment must be inspected daily before commencement of operation to ensure that it is in perfect condition. Particular attention must be paid to the position of the ship in relation to the embarkation and disembarkation platforms and to any subsidence of the supporting blocks or individual supports.
16. The equipment must be checked continuously during operation, with particular regard to the supporting blocks and to the supports; any faults must be remedied immediately.
17. The pressure relief valve for the safety bars must be left at its present setting (435 psi = 30 bar).
18. All data adjusted and logged by the manufacturer are not allowed to change. An acceptance certificate is available, if required.



19. The site must be levelled to ensure stability of the equipment and, as far as necessary, unhindered access.
20. The operator of the equipment or his deputy must instruct the employees with regard to careful treatment of the individual components during erection and dismantling, loading, unloading and transportation.
He must supervise, and if necessary, direct the work.
21. The underbushings (supports) between the ground and the foundation construction must be kept low, and must be constructed so that they are immobile and stable.
Underbushings of stacked squared wood etc. must, if necessary, be secured with ground bracing or stays; possible flooding or washing away of the soil from below must be also taken into account as a precautionary measure.
22. The operation safety of the amusement ride must be checked daily before starting operation. The main connections, moving and mechanical components must also be observed during operation; any faults which arise must be immediately corrected.
If necessary, operation must be stopped.
Repairs which could endanger passengers or operating personnel are not permissible during operation.
23. Sitting or standing on railings, swaying to the music and rhythmic stamping on the platforms must not be permitted. If necessary, the music should be stopped and the machinery switched off.

2225
165
54
860
825
54888910
165
270
24



MASCHINENFABRIK

VI.Maintenance Instructions for Fiberglass Surfaces

We use only first-class materials to produce the surface finish of our fiberglass components. Although these require very little maintenance, they cannot do entirely without maintenance. To retain the brilliant surface gloss for a long time we recommend you to:

1. Clean the surfaces at least every 14 days with clear water and then polish with a leather cloth.
2. Never rub dust or dirt off the surfaces when dry.
3. Clean the surfaces with a solution of water and household washing-up liquid or similar as required but at the latest every 3 months; after drying, apply a good automobile wax and polish with a soft cloth.
4. If you use a high-pressure steam jet, never work with chemicals which are more aggressive than soapy water.
5. If you use a high-pressure steam jet with chemicals which comply with Point 4, wax and polish the surfaces again afterwards.
6. Stubborn spots and stains can be swiftly removed with moist acetone cloths; keep the contact-time with acetone to a minimum.
Immediately after working with acetone or cleaning benzine, wash the surface well with clear water and then wax and polish.

HUSS

SERVICE LETTER PI-01
ISSUED BY HUSS MASCHINENFABRIK
OCTOBER 13, 1981

RE: Oil change in Pirate Ride

Oil change should be carried out in accordance with the manual, after every 1500 hrs. of operation, up to a maximum of six months.

The most important requirement for trouble free operation is a clean hydraulic system.

The presence of dirt in the hydraulic system causes a more rapid power drop at the pumps and shortens the service of all parts. Control operation can also be blocked as a result of dirt.

ESSO NUTO H68 (SEA 20) hydraulic oil is used for all hydraulic systems.

HUSS

SERVICE LETTER PI-02
ISSUED BY HUSS MASCHINENFABRIK
AUGUST 13, 1981

REGISTERED

RE: Skip's Keel of Pirate Boat

We have discovered cracks in the under girdle plate of the Keels of certain Pirate Boats which have been in operation more than three years. The rub wheels run against this girdle plate during the swinging action of the Boat.

It is, therefore, absolutely necessary for you to carefully inspect your rides immediately for any such cracks.

In the event cracks are present, they must be immediately smoothed and welded by a competent firm. Optimal repair of the cracks, however, can only be accomplished at our factory.

All customers, even those who do not discover such cracks, are requested hereby to contact us immediately for an appointment for such repair.

We request our customers to take due regard to their duty of care and possible liability to prevent injury to persons and property.

It is understood that we cannot assume any liability not covered by our warranty.

*This service letter applies to serial numbers up to #40983.

HUSS

SERVICE LETTER PI-03
ISSUED BY HUSS MASCHINENFABRIK
AUGUST 1981

RE: Pirate - Flywheel

We would like to inform you that there is a special modification kit available for your specific Pirate boat ride. Along with other parts this kit contains two gear boxes, two flywheels, two wheel hubs and a gear motor fitting to the hydraulic pump.

This modification is dedicated to offer to our customers the possibility to assimilate the hydraulic motors layout of a older Pirate ship to that of the correct production line.

SERVICE LETTER
PI-05



MASCHINENFABRIK

Huss Maschinenfabrik GmbH & Co. KG - Postfach 110206, D-2800 Bremen

Stresenmannstr. 56 - Telex 245180 huss d
☎ (04 21) 499000 - Telefax 4 99 00 40

Ihre Zeichen/Nachricht

Unser Zeichen

Telefon-Durchwahl / Kommission / Tag

11.09.89

RE: Pirate-E #

Dear Customer:

As an amendment to our safety regulations sent to you on July 22, 1989, we would like to explain that the height recommendation is based on european experience.

Our recommendation and your experience is important, but it is still up to the State Inspector to make the final decision as to the height restriction on your particular ride.

HUSS MASCHINENFABRIK
GmbH & Co.KG



MASCHINENFABRIK

**RETURN RECEIPT
REQUESTED**

SAFETY REGULATIONS

for

AMUSEMENT SWING "PIRATE"

1. The equipment must be erected so that a sufficient distance is maintained away from houses, trees, electrical cables etc. min. 20 inch (0,5 m) in all positions of the swing so that passengers are not endangered .
 2. The ride must only be erected on soil of sufficiently good bearing quality.
A permissible ground pressure of min. 29 lb/in² (20 N/cm²) is necessary . The centre structure, platforms, steps and floors must be supported in accordance with the specifications in Plan No. 1-8 D.
For the stationary model, the foundation must be designed for the bearing loads specified in the load analysis bzw. drawing.
 3. In order to attain sufficient pre-tensioning, the following "M"_a torque values are necessary for the under-mentioned bolt connections. The bolts must be lightly greased when pre-tensioning.
 - a) M20 bolts, quality 8.8, to connect the lower diagonal brace of the suspension to the ship: M_a = 148 ft lb (200 Nm)
 - b) M24 bolts, quality 5.6, to connect the strut sockets to the axle: M_a = 170 ft lb (230 Nm)
 - c) M24 bolts, quality 8.8, at the flange connection of the struts (strut butts) M_a = 295 ft lb (400 Nm)
- After certain periods of operation, it is necessary to check the pretensioning. In any parts of the ride are found to have settled with time, these checks must be carried out more frequently.
4. The spring assemblies at the connection of the struts to the strut sockets (see Plan No. 1-8 "Amusement Swing") must be pre-tensioned by 0,13 inch (3,4 mm) by means of M24 bolts, quality 8.8.
 5. All connections must be secured against accidental opening.
 6. The control stand should be positioned so that embarkation and disembarkation of the passengers as well as opening and closing of the safety bars can easily be observed.
 7. The following technical specifications must be observed for the drive wheels D = 32,9 inch (836 mm):
 - a) tyre pressure: 130 psi (9 bar)
 - b) minimum depth of tread: 0,12 inch (3 mm)



MASCHINENFABRIK

8. The equipment is not designed for snow loads. Should it be erected during the snowy season, any snow must be removed immediately.
9. The swing is designed for a maximum load of 54 adults, calculated at 165 lb (75 kg) per person;
3 children of less than approx. 10 years old and of a height of less than 4,5 ft (137 cm) may ride in place of two adult.
10. Leaning out of the ship, smoking and taking animals, umbrellas, sticks or other unwieldy or sharp objects onto the ship is prohibited.
11. Children under 8 years and of a height of less than 4,5 ft (137 cm) may ride only when seated together with adults on one bench.
Drunken people must not be allowed onto the ride.
12. The conditions as under 10 and 11 must be clearly displayed on notice boards.
13. The drive may only be switched on when.
 - a) all passengers are seated on the benches
 - b) all safety bars have been closed
 - c) no passengers are on the embarkation and disembarkation platform
14. The supervisory personnel must ensure that no passengers step onto the embarkation platform until the ship is stationary.
15. The equipment must be inspected daily before commencement of operation to ensure that it is in perfect condition.
Particular attention must be paid to the position of the ship in relation to the embarkation and disembarkation platforms and to any subsidence of the supporting blocks or individual supports.
16. The equipment must be checked continuously during operation, with particular regard to the supporting blocks and to the supports; any faults must be remedied immediately.
17. The pressure relief valve for the safety bars must be left at its present setting (435 psi = 30 bar).
18. All data adjusted and logged by the manufacturer are not allowed to change. An acceptance certificate is available, if required.



MASCHINENFABRIK

14

19. The site must be levelled to ensure stability of the equipment and, as far as necessary, unhindered access.
20. The operator of the equipment or his deputy must instruct the employees with regard to careful treatment of the individual components during erection and dismantling, loading, unloading and transportation.
He must supervise, and if necessary, direct the work.
21. The underbushings (supports) between the ground and the foundation construction must be kept low, and must be constructed so that they are immobile and stable.
Underbushings of stacked squared wood etc. must, if necessary, be secured with ground bracing or stays; possible flooding or washing away of the soil from below must be also taken into account as a precautionary measure.
22. The operation safety of the amusement ride must be checked daily before starting operation. The main connections, moving and mechanical components must also be observed during operation; any faults which arise must be immediately corrected.
If necessary, operation must be stopped.
Repairs which could endanger passengers or operating personnel are not permissible during operation.
23. Sitting or standing on railings, swaying to the music and rhythmic stamping on the platforms must not be permitted. If necessary, the music should be stopped and the machinery switched off.



MASCHINENFABRIK
V.

SAFETY REGULATIONS

for

AMUSEMENT SWING "PIRATE"

**RETURN RECEIPT
REQUESTED**

1. The equipment must be erected so that a sufficient distance is maintained away from houses, trees, electrical cables etc. min. 20 inch (0,5 m) in all positions of the swing so that passengers are not endangered .
2. The ride must only be erected on soil of sufficiently good bearing quality.
A permissible ground pressure of min. 29 lb/in² (20 N/cm²) is necessary . The centre structure, platforms, steps and floors must be supported in accordance with the specifications in Plan No. 1-8 D.
For the stationary model, the foundation must be designed for the bearing loads specified in the load analysis bzw. drawing.
3. In order to attain sufficient pre-tensioning, the following "M"_a torque values are necessary for the under-mentioned bolt connections. The bolts must be lightly greased when pre-tensioning.
 - a) M20 bolts, quality 8.8, to connect the lower diagonal brace of the suspension to the ship: M_a = 148 ft lb (200 Nm)
 - b) M24 bolts, quality 5.6, to connect the strut sockets to the axle: M_a = 170 ft lb (230 Nm)
 - c) M24 bolts, quality 8.8, at the flange connection of the struts (strut butts) M_a = 295 ft lb (400 Nm)

After certain periods of operation, it is necessary to check the pretensioning. In any parts of the ride are found to have settled with time, these checks must be carried out more frequently.

4. The spring assemblies at the connection of the struts to the strut sockets (see Plan No. 1-8 "Amusement Swing") must be pre-tensioned by 0,13 inch (3,4 mm) by means of M24 bolts, quality 8.8.
5. All connections must be secured against accidental opening.
6. The control stand should be positioned so that embarkation and disembarkation of the passengers as well as opening and closing of the safety bars can easily be observed.
7. The following technical specifications must be observed for the drive wheels D = 32,9 inch (836 mm):
 - a) tyre pressure: 130 psi (9 bar)
 - b) minimum depth of tread: 0,12 inch (3 mm)



19. The site must be levelled to ensure stability of the equipment and, as far as necessary, unhindered access.
20. The operator of the equipment or his deputy must instruct the employees with regard to careful treatment of the individual components during erection and dismantling, loading, unloading and transportation.
He must supervise, and if necessary, direct the work.
21. The underbushings (supports) between the ground and the foundation construction must be kept low, and must be constructed so that they are immobile and stable.
Underbushings of stacked squared wood etc. must, if necessary, be secured with ground bracing or stays; possible flooding or washing away of the soil from below must be also taken into account as a precautionary measure.
22. The operation safety of the amusement ride must be checked daily before starting operation. The main connections, moving and mechanical components must also be observed during operation; any faults which arise must be immediately corrected.
If necessary, operation must be stopped.
Repairs which could endanger passengers or operating personal are not permissible during operation.
23. Sitting or standing on railings, swaying to the music and rhythmic stamping on the platforms must not be permitted. If necessary, the music should be stopped and the machinery switched off.