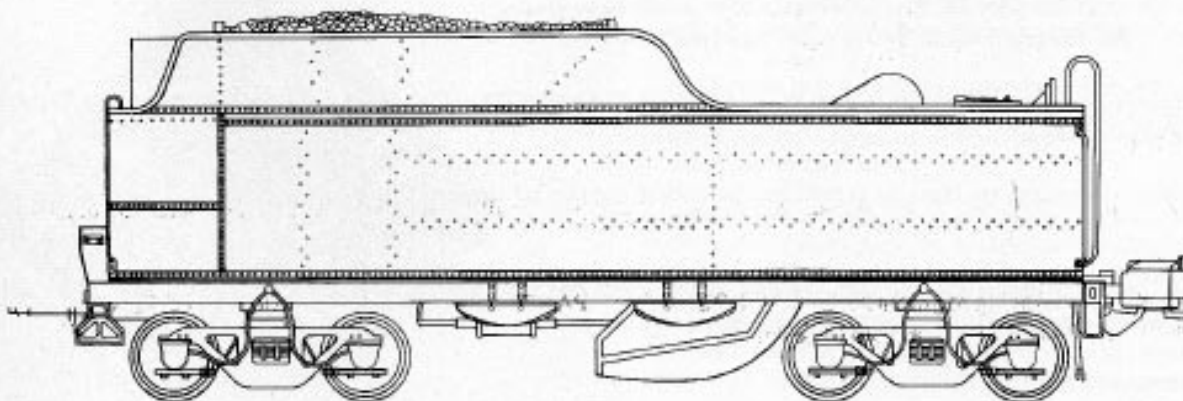


# LONG TENDER

INSTRUCTION MANUAL

ART 21800-01



For Use with Tenders for Earlier Model Pacific's Made Before 2003

## ARISTO-CRAFT TRAINS

REV. 080194

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## INTRODUCTION

Dear Model Railroader:

This Steam Locomotive LONG TENDER is, without a doubt, the most highly detailed #1 Gauge 1/29th Scale Tender available. Suitable for both INDOOR and OUTDOOR operation, it accurately portrays a North American prototype Steam Locomotive Tender, based upon our research and on documented Official Blueprints referenced to standard Association of American Railroads (AAR) recommended practice.

Should you have any questions about operation, proper usage, or maintenance required on this LONG TENDER or any other ARISTO-CRAFT-TRAINS Model railroad product, please contact us at the following address:

Aristo-Craft Trains Phone: 973-351-9800  
698 South 21st St Fax: 973-351-9700  
Irvington, NJ 07111 email: aristo@mindspring.com

Our phone lines are open from 10:00 AM to 5:00 PM (EASTERN STANDARD TIME) Monday through Friday

The following instructions are intended to help you understand and operate all the features built into this Steam Locomotive LONG TENDER.

Please note, due to packaging requirements, the ART-21400 Series PACIFIC with ART-21800 Series LONG TENDER ... while sold as a 21400 Series 2-piece SET ... are boxed separately.

Good Railroading!!!!

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## HISTORY

This ARISTO-CRAFT-TRAINS model railroad LONG TENDER is an accurate representation of a Steam Locomotive Tenders built by the Baldwin Locomotive Works (Philadelphia, PA) in 1927 as the B&O/ Baltimore & Ohio Railroad's 'President' Class Pacific 4-6-2 Steam Locomotives.

An example of this type LONG TENDER (with PACIFIC 4-6-2 Steam Locomotive attached) is currently on display at the B&O Railroad Museum in Baltimore, MD USA.



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## FEATURES:

Operating KNUCKLE COUPLER – Rear  
Fully Sprung Trucks with BLACK Metal Wheels  
Solid BRASS Grab Railings  
Fully Underbody Detail  
Realistic Coal Load  
Prototypical Painting and Lettering.  
Electronic 'Steam Sounds' WITH BELL

## WHEELS:

1. The LONG TENDER BLACK Metal wheels are designed for constant electrical power pickup through an electrical connection at each METAL Wheel. Specially BLACK-plated to insure good electrical conductivity, corrosion resistance, and extended wear, the METAL wheels will give normal service during usage of the LONG TENDER.

1A. However, over a period of time, these wheels may require cleaning. Dirty wheels will cause sporadic electrical pickup and possibly electrical flashover which may cause discoloring on affected surfaces of wheel and/or brass track.

A good indication of dirty wheels is flickering lights or non-functioning sound unit. To clean properly, remove LONG TENDER from any electrical contact and turn upside down exposing Metal wheels. Using ART-29601 SMOKE FLUID/TRACK CLEANER is recommended for application to METAL wheel surface with clean/soft fabric (rag). DO NOT USE ABRASIVE because resulting metallic particles may enter Locomotive electric motor/gearing and cause operational problems.

## TRUCK BEARINGS

2. The truck/wheel set sideframes are molded of a thermal plastic which reproduces all details and, for durability, a special BRASS bushing has been inserted into each journal box end. These BRASS bushings are designed to operate properly WITHOUT additional lubrication.

2A. However, you MAY lubricate, if desired, using either dry lubricant of powdered graphite or an oil-based and electrically conductive liquid lubricant (ART-29602 LUBRICANT-CONDUCTIVE).

2B. It is not necessary to dis-assemble the LONG TENDER truck/wheel sets to properly lubricate. Turn LOCOMOTIVE upside down and apply lubrication to axle ends at truck/wheel set sideframes.

## COUPLER:

3. Loop-style coupler is enclosed as a spare accessory. The operating knuckle coupler (not included w/PACIFIC 4-6-2 STEAM LOCOMOTIVE), ART-29200, used on all ARISTO-CRAFT TRAINS products is based upon the AAR style knuckle used on all major North American Railroads.

3A. **NOTE:** However, the knuckle coupler MAY NOT operate automatically when attempting to couple ARISTO-CRAFT TRAINS products to certain knuckle couplers used by other model railroad manufacturers. Couplers may have to be joined by manually coupling the knuckle on each railcar end in a closed position by lifting one end coupler and inserting the closed knuckle onto the ARISTO-CRAFT TRAINS knuckle coupler.

3B. This knuckle coupler can be uncoupled automatically by using an LGB\* designed uncoupling device. The coupler may also be operated manually by pressing upward on the small tab below each coupler assembly. The coupler can be pushed away to any side if you wish the Locomotive w/Tender not to couple automatically when railcars come together. However, DO NOT attempt to operate in train without the couplers properly aligned and fully coupled to opposite railcar. Otherwise, railcars may derail on curves or switch tracks. Should you prefer to use the Loop-style coupler on LONG TENDER, this conversion can be made easily and quickly by unscrewing the single screw that holds the AAR knuckle coupler to the LONG TENDER truck arm and attaching the Loop-style coupler using the same screw. Both style couplers are attached to truck arm at a swivel base. When operating PACIFIC 4-6-2 Steam Locomotive w/tender, this enables coupler(s) to articulate when encountering curves or switches.

**3C. NOTE:** Operation of PACIFIC 4-6-2 Steam Locomotive w/LONG TENDER on CURVE TRACK of 4 ft. diameter (ART-11100/ART-30100) or certain Switchtracks (ART-11200 series) is NOT RECOMMENDED.

3D. Knuckle couplers will center automatically while Locomotive w/Tender is in motion. Manual centering is accomplished by exerting light outward pressure on knuckle/Loop at articulated joint and returning to center.

## PULSE WIDTH CONTROL/P.W.C.:

4. All ARISTO-CRAFT TRAINS locomotives, tenders, and operating railcars are designed to operate at proper capacity ONLY with ARISTO-CRAFT TRAINS Power Supply Units featuring "Pulse Width Control" (P.W.C.).

\*LGB is a trademark of the E.P. Lehman Company, Germany.

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4A. P.W.C. allows a continuous voltage to flow to the motor and accessories (when switches are ON) such as headlight, interior lighting, smoke unit, and diesel or tender 'Electronic Sounds' during operation REGARDLESS of the speed OR direction of locomotive, tender, and/or railcars. In addition, the motor is supplied (when switch is ON) with a continuous voltage to allow smooth starting and stopping.

4B. DO NOT CONFUSE PULSE WIDTH CONTROL with Pulse Power, a feature provided by some other (non-ARISTO-CRAFT TRAINS) power packs. It may seem that when operating with Pulse Power, the features on ARISTO-CRAFT TRAINS products are operating properly, but, in fact they ARE NOT. Sufficient voltage may not be available to activate the unit(s) and underload/overload damage to components may result.

4C. Also, the TRAIN POWER PACK 7000 - 3.5 AMP FOR G AND HO previously manufactured by Polk's Modelcraft Hobbies under the Aristocraft Tradename DOES NOT HAVE P.W.C. To properly operate your #1 Gauge ARISTO-CRAFT TRAINS with P.W.C., use ARISTO-CRAFT TRAINS ART-5400 (1.8 AMP) or ART-5450 (3.5 AMP) Power Supply Units.

4D. If it is not possible to operate your #1 Gauge 1/29 Scale ARISTO-CRAFT TRAINS products with our P.W.C. equipped Power Supply, do not worry. Our Electrical Engineers have developed the ART-5401 CONTROL PACK ADAPTOR which can be easily attached to your present power supply, UP TO 5 AMPS, of another manufacturer and will allow PULSE WIDTH CONTROL to be applied to your Indoor/Outdoor model railroad. The ART-5401 CONTROL PACK ADAPTOR is now available, see your ARISTO-CRAFT TRAINS A.A.R. Full-Service Hobby shop/dealer.

5D. The 9 VOLT ALKALINE or 9 VOLT NCD ReChargeable BATTERY is NOT AVAILABLE from ARISTO-CRAFT TRAINS. Contact your nearest Full-Service Hobby Shop or Radio/Control Model Airplane-Race Car Dealer for this item.

**SERVICE NOTES:**

6. All parts contained in the LONG TENDER are available for replacement or repair by contacting ARISTO-CRAFT TRAINS. If you have any questions, please refer to INTRODUCTION for method of contacting ARISTO-CRAFT TRAINS Customer Service.

**MINIMUM TRACK RADIUS:**

7. The PACIFIC 4-6-2 Steam Locomotive w/LONG TENDER will operate properly on minimum of ART-11500/ART-30110 MEDIUM CURVE TRACK. However, operation using ART-11800/ART-30120 XWIDE CURVE TRACK is recommended for maximum train length and pulling power. Use of ART-5450 3.5 AMP Power Supply is also suggested.

7A **NOTE:** Factory testing had PACIFIC 4-6-2 Steam Locomotive w/ LONG TENDER pulling 40 freight railcars or 6 Standard Heavyweight Passenger railcars on level ART-11800 XWIDE CURVE TRACK..

**CONNECTING LONG TENDER to PACIFIC LOCOMOTIVE**

8. Place PACIFIC LOCOMOTIVE upright on flat surface with Metal Drawbar over rear truck and extending vertically from underneath CAB (towards customer in 6 o'clock position).

8A. TAKE LONG TENDER with Metal Drawbar Connector attached and position parallel but to right of LOCOMOTIVE (in 3 o'clock position), aligning the tip of Drawbar Connector under opening on LOCOMOTIVE Metal Drawbar.

8B. Slide upwards into opening and then rotate LONG TENDER to

**ELECTRONIC 'STEAM SOUNDS' WITH BELL:  
(Available on LONG TENDER, ART-21800 Series)**

5. The LONG TENDER is equipped at factory with an electrical sound unit, mounted inside tender shell. Speaker sound is emitted through opening in tender underbody. The sound unit is activated automatically by electrical pickup through the tender truck/wheel sets and is synchronized to the current-draw of the steam locomotive. Whenever access is made to tender underbody, caution should be taken regarding electrical wire connections from truck/wheel set pickup to sound unit.

5A. Control of the 'STEAM SOUNDS' WITH BELL is by ON-OFF/Volume Knob located on underframe of LONG TENDER.

5B. **NOTE:** Remove foam insert protecting the roller-cam and pickup before operation. Be careful not to displace pickup. Some-times during shipment, the pickup may be forced upward by roller cam movement and when placed on track, LONG TENDER 'STEAM SOUNDS' will not operate properly. Turn LONG TENDER upside down and with finger, gently press down on pickup until pickup touches roller cam. Pickup will 'spring back' with tension, but is now close enough to 'read' movement of roller-cam.

5C. **NOTE:** (Revised 04-01-91) The LONG TENDER can also be operated using a 9 VOLT NCD ReChargeable BATTERY (NOT INCLUDED), inserted into snap-plug inside tender body, to allow the 'STEAM SOUNDS' WITH BELL to function at slow speeds when a P.W.C. ARISTO-CRAFT POWER SUPPLY IS NOT USED. When using the P.W.C. ARISTO-CRAFT POWER SUPPLY, it is not necessary to remove, if previously inserted, the 9 VOLT BATTERY. The use of a standard ALKALINE 9 VOLT BATTERY is NOT RECOMMENDED since it will not re-charge properly and frequent replacement of this type battery after extended usage/time is required.

same vertical position (towards customer in 6 o'clock position) from LOCOMOTIVE CAB. It is not necessary to force or modify any connections, if positioned properly all pieces will fit easily.

8C. To operate, lift upwards on LOCOMOTIVE CAB ROOF so Metal Drawbar with TENDER attached will clear rear truck of LOCOMOTIVE. Take connected LONG TENDER and move to proper/in-line rear position behind LOCOMOTIVE. You may now operate normally.

**ASSEMBLY INSTRUCTIONS:**

9. No assembly required, all LONG TENDERS come Ready-to-Run.

10. PARTS LISTING FOR ART-21800 Series LONG TENDER, all railroad names and Undecorated.

PART #	DESCRIPTION	COST
21800-01	LOCOMOTIVE Instruction Manual	\$ 1.00
218xx-02	Tender Body Shell	25.95
21800-03	Underframe w/o Trucks/Sound Unit/Detail	2.00
21800-04	METAL Drawbar Connector for LONG TENDER	1.00
21800-22	BRASS Grabrailing-front	2.00
21800-23	BRASS Grabrailing-rear	3.00
218xx-25	Side Step - front (Plastic)	1.00
218xx-26	Side Step - rear (Plastic)	1.00
218xx-27	BRASS plastic ladder-rear	6.95
218xx-44	Spoker Assembly-top (round)	2.00
218xx-41	Water Tank Cover	3.00
21800-45	Water Scoop Assembly (underneath)	9.95
21800-50	Coal Load	5.00
29108	TRUCK w/metal wheels (pair) w/o Coupler	34.95
29200	AAR Knuckle Coupler (pair)	7.95
29403	Assorted Screw Set	4.98
29602	Lubricant-Conductive	1.00

Refer to Exploded Parts Diagram/Parts Price List for Parts information.

10. Additional parts available, contact ARISTO-CRAFT TRAINS Customer Service for complete part listing and availability.

xx - refers to last two digits of railroad name LONG TENDER when part is painted to match, i.e. ART-21801-02 would refer to Tender Body Shell for PENNSYLVANIA PASSENGER Long Tender. When part is same for all LONG TENDERS, 00 would replace the xx used in part(s) listing.

10A. **NOTE:** When ordering replacement parts or repair request, please refer to the proper ART 5 or 7 digit part number shown above.

\*\*\*Unpainted/black plastic PART(S) will be automatically substituted if the Painted-to-match PART(S) ordered not available.\*\*\*

In addition to COST shown above, please enclose ...  
\$3.50 shipping/handling\* if PART Order less than \$10.00 or  
\$5.00 shipping/handling\* if PART Order \$10.00 and above.

\*This is for PART Order only, not WARRANTY Order.  
\*\*\*NO C.O.D. shipping on parts, prepaid or Charge Card ONLY\*\*\*

#### LIMITED WARRANTY

11. Your new ARISTO-CRAFT TRAINS product is warranted for 180 days from DATE OF PURCHASE against defects in workmanship and/or materials. Proof of purchase MAY be required by ARISTO-CRAFT TRAINS.

11B. This warranty is VOID and does not apply to any product and/or parts and components which have been improperly installed by purchaser/owner, abused or damaged in any way through improper operation such as train derailment, modified, or repaired by unauthorized service centers and/or non-factory authorized technicians.

#### SERVICE:

12. Should your ARISTO-CRAFT TRAINS model railroad product require warranty service, be sure to take the following steps to assure proper servicing:

12A. Return product with foam insert in ORIGINAL Black Box, AND pack product carefully in (another) corrugated cardboard box, FULLY INSURED and PREPAID. ARISTO-CRAFT TRAINS will not be responsible for any damage or loss incurred during return for servicing

12B. DO NOT SHIP PRODUCT ONLY in Black ARISTO-CRAFT TRAINS box with shipping label. This WILL NOT protect product during shipping and CUSTOMER is liable for damage to product.

12C. Include a brief but thorough explanation of the problem(s) and the servicing that may be required.

12D. Be sure to include your name, street address, city, state (or province), country (if outside U.S.A.), and postal zip code along with daytime phone number, including Area Code, so that you may be contacted if it becomes necessary. All identification MUST be both - INSIDE package, contained in letter and - OUTSIDE package, on shipping container.

12E. Include proper payment for shipping/handling -  
Call for proper shipping/handling if outside continental US  
Locomotive or Complete Train Set \$20.00 US  
Accessories, switch-track  
Individual freight/passenger  
railcars, or tender \$10.00 US  
- with check (written on your USA Bank Account)/Money Order

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payable in US Dollars(\$) to: Polk's Hobbies. Please **DO NOT SEND CASH**. If your returned item is out of warranty, you will be contacted with proper amount of repair costs before repairs are started.

\*\*\*C.O.D. shipping NOT included, additional cost.\*\*\*

12F. Ship your item(s) to:

Aristo-Craft Trains Phone: 973-351-9800  
698 South 21st St Fax: 973-351-9700  
Irvington, NJ 07111 email: aristo@mindspring.com

12G. Immediate written confirmation of receipt of returned item(s) will be sent along with estimated repair time by ARISTO-CRAFT TRAINS Service/Repair Department.



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