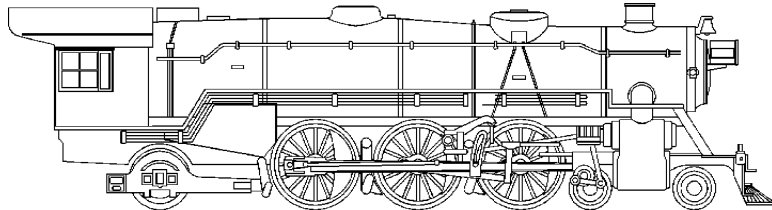
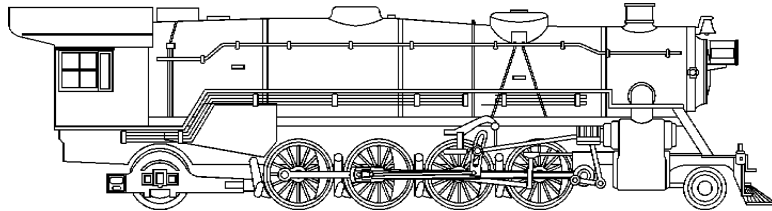


#1	1:29
Gauge	SCALE

MIKADO 2-8-2 and PACIFIC 4-6-2 STEAM LOCOMOTIVE

INSTRUCTION MANUAL

ART-21500 - 01



ARISTO-CRAFT TRAINS

090203 NEW

ARISTO-CRAFT TRAINS

Dear Model Railroader,

The 2-8-2 Mikado and 4-6-4 Pacific Steam Locomotives are highly detailed #1 Gauge 1/29th scale units and are suitable for both indoor and outdoor operation. They have been designed and manufactured to our usual high specifications.

Should you have any questions regarding operation, proper usage or maintenance required on this or any other Aristo-Craft product, please do not hesitate to contact us at the following address:

ARISTO-CRAFT TRAINS / Polk's Modelcraft Hobbies, Inc.

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Tel: (973) 351-9800 Fax: (973) 351-9700

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Our customer service department phones are open from 10:00 AM to 5:00 PM Eastern time, Monday through Friday.

Visit our website: www.aristocraft.com

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HISTORY

The Mikado 2-8-2 steam locomotive was one of the most common of the steam locomotives built and used in the United States and Canada. It was a workhorse, a locomotive that could do it all. Primarily used in freight operations, it was occasionally employed in passenger service, right up to the end of steam operations. Large and small railroads operated Mikados due to their extreme versatility. Some seemed to be light and delicate, treading on small rail, others were plodding behemoths. It depended on the job that needed to be accomplished.

During the age of the Iron Horse, the era of steam, almost 10,000 Mikados were built. The Pennsylvania Railroad alone possessed over 550 of these locomotives.

When the U.S.A. became involved in World War I, the United States Railroad Administration decided to standardize the design and manufacture of locomotives in order to save time and materials. This gave birth to what is known as the USRA Mikado. Over 800 light and heavy USRA Mikados were erected by the 3 major locomotive builders: The American Locomotive Company, Baldwin and Lima.

Some railroads used the boiler, cab and other components from existing Pacific locomotives in order to save time and money in the construction of new Mikados.

The Pacific 4-6-2 steam locomotive evolved around the world as a heavy passenger engine. Especially embraced in the United States and Canada, it was developed because trains were becoming longer and heavier and the 4-6-0 Ten Wheelers could



not cope with the new equipment. It was apparent that a larger fire box was needed in order to produce more steam in the boiler to pull bigger trains. In order to overcome this deficiency, a trailing truck was added to the locomotive to support the larger firebox, and the Pacific 4-6-2 was born. Primarily a passenger engine, it was also used by some railroads for fast freight.

Railroads from East to West operated the Pacific. All of the three major locomotive builders, Alco, Baldwin and Lima built Pacifics for their client railroads. The prototypes for our Pacifics are products of the Baldwin Locomotive Works, in 1927. They were erected for the Baltimore & Ohio Railroad as their “President” class of heavy passenger locomotives.

FEATURES

These locomotives have the following features, which make them look and operate in a superior manner:

Can Motor with Built In Cooling Fan

All Drive Wheels Gear Driven

Patented Ball Bearing Equipped *Prime Mover* Gearboxes

Operating Classification Lights

Cast Metal Jointed Side Rods

MU Plugs for Multiple Locomotives & Battery Hookup

Thermal Switch to protect Against Excessively High Temperatures

Prime Mover Smoke System

Operating Front Headlight

Flywheels for Better Locomotive Performance

Cast Metal Drive Wheels

Moveable Cab Side Windows

Boiler and Cab Detail

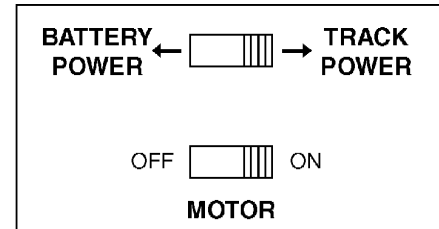
Heavy Weight for Superior Pulling Power

Gear Cases Allow Lateral and Vertical Movement of the Wheels so that they follow rough and uneven track

POWER SWITCHES

The four power switches are located in the cab of the locomotive, two on the floor and two on the boiler back head.

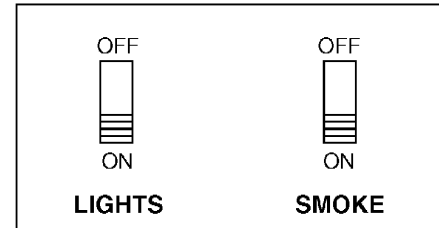
The bottom slide switch on the boiler back head is the motor switch. Left position is “off”, right position is “on”. The top slide switch on the boiler back head is the Track/Battery Power Selector Switch. Left position is Battery Power Pickup, the right position is Track Power Pickup.
*See the drawing.



CAB BACKHEAD SWITCHES

The slide switch on the left side of the cab floor controls the lights. The slide switch on the right side of the cab floor controls the smoke unit. On both of these switches, the forward position (towards boiler) is “off”, the rear position (away from boiler) is “on”.

See the drawing.



CAB FLOOR SWITCHES

*NOTE: Some locomotives may have the Battery/Track Switch wired in reverse of what is shown. Battery Power on the right position and Track Power on the left position.

MODULAR PLUGS

There are two modular plugs at the rear of the locomotive. The larger of the two is used for battery operation, if desired (see the section on battery power below). The smaller of the two plugs is a power pick up plug. The rear truck of the tender has electrical pick up and this plug transmits power to the locomotive. This tender pick up is in addition to the electrical pick up on the locomotive and helps to keep constant power to the motors over short sections of dead or dirty track.

BATTERY OPERATION

This locomotive has been equipped to operate either from track power or battery power. If battery operation is desired, keep the motor switch in the “on” (right) position and connect the modular plugs at the rear of the tender to the battery car. Be sure that the modular plugs between engine and tender are connected. **During battery operation, it is best if there is no track power. Disconnect power pickups from the locomotive’s tender truck(s) to ensure no track power can possibly effect the operation of the locomotive if battery power is to be used. Any power to the track during battery operation may result in damage to the equipment.**

If battery power is utilized, we recommend the use of Crest Electronics batteries, and battery charging systems. If other batteries are utilized, the total voltage must be between 18 and 24 and the total amperage should be at least 3.

SMOKE GENERATOR

The *Prime Mover* smoke generator unit is located beneath the smoke stack, which is situated on the top of the boiler in the front of the locomotive. Before filling the smoke fluid reservoir, turn the smoke switch to the “off” (forward) position. The filling hole is in the center of the smoke stack. Using Crest smoke fluid, CRE-29601, fill the reservoir with at least 25, but no more than 50 drops of the smoke fluid.

This *Prime Mover* smoke generator contains an automatic cut-off circuit that will prevent the unit from burning out if it becomes too hot or if it runs out of smoke fluid. Should the unit shut itself off, move the smoke unit switch to the “off” (forward) position, allow the unit to cool for a few minutes and refill with smoke fluid (if necessary). Move the smoke unit switch to the “on” (rear) position and restart.

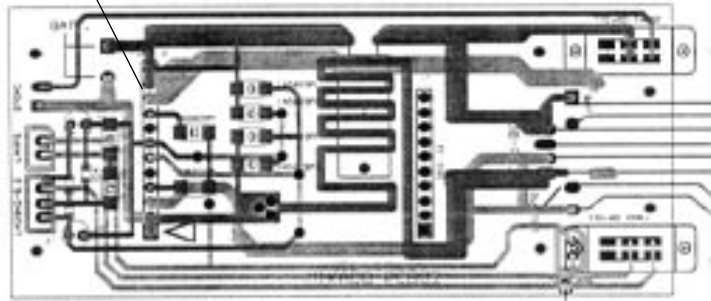
CAUTION

Do not turn the locomotive upside down or on its side when the smoke fluid reservoir contains smoke fluid. Any remaining fluid may leak out of the locomotive. The fluid may be hot enough to cause injury.

DCC OR RADIO CONTROL INSTALLATION

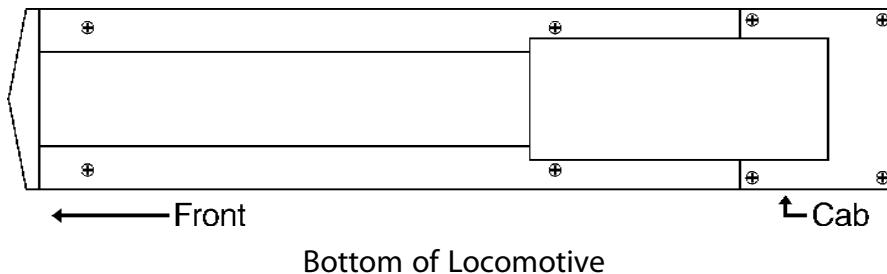
This locomotive is equipped with a DCC port and dummy plug. After purchasing the DCC or radio control system of your choice, be sure to read the instructions carefully. For radio control we recommend the CREST On-Board Train Engineer System. In order to install your DCC or RCC system, the dummy plug must be removed and the DCC or RCC plug inserted in its place. The DCC port is located on the main PC board of the unit. See the diagram of the main PC board for the location of the DCC port. In order to reach this PC board, the top of the boiler and cab must be removed. This is done by removing the 5 screws holding the boiler in place, and the 4 screws holding the cab in place. Turn the locomotive on its back and remove the screws from the bottom. Refer to the diagram on page 10 for the exact location of these screws.

DCC Port



Main PC Board

REMOVING CAB AND BOILER FROM LOCOMOTIVE



To remove the boiler and cab from the locomotive, remove the 4 screws from the underside of the cab, and the 4 screws from the bottom of the boiler, as shown in the drawing above. Also remove 5th screw on top of boiler, located next to the smokestack.

CAUTION

Do not turn the locomotive upside down or on its side when the smoke fluid reservoir contains smoke fluid. The remaining liquid may leak out, and if the locomotive has just been run, the fluid may be hot enough to cause injury.

SOUND INSTALLATION

This locomotive does not have provisions for the installation of a sound system. The tender contains a factory installed speaker and PC board. Purchase the sound system of your choice and install it according to the manufacturers instructions.

WHEELS

The locomotive's drive wheels are metal and are used for the electrical pick up. Over a period of time these wheels may require cleaning. Dirty wheels will cause sporadic electrical pick up which is indicated by flickering lights. In order to properly clean the wheels, remove the locomotive from the track and turn it upside down to expose the wheels. The Crest CRE-29601, Smoke Fluid is also a very good track and wheel cleaner. Apply with a clean, soft rag and wipe the dirt away. **Never use abrasives to clean wheels**, as the resulting metal particles may enter the motor or gearing, causing operational problems.

COUPLERS

An optional knuckle coupler is included in the foam packaging for installation on the front of the locomotive if you wish to double head the units. In order to install the coupler, the pilot must be removed in order to provide clearance for the coupler to work. This coupler is prototypically correct and may be operated manually pressing upward on the small tab below the coupler assembly. Automatic uncoupling may be accomplished by using an LGB* designed uncoupling device. (**LGB is a trademark of the E.P. Lehmann Company, Germany*).

OPERATION

When running by itself or coupled to another locomotive or cars, this locomotive requires a minimum track diameter of 8'. This is a large locomotive and smaller diameter curves may cause derailments and clearance problems. Smaller curves will also cause cars coupled to the locomotive be pulled completely off of the rails.

LIMITED WARRANTY

All ARISTO-CRAFT TRAINS products are under warranty for five (5) years from the date of purchase against defects in workmanship and/or materials. Proof of purchase *may be required* by ARISTO-CRAFT TRAINS.

This warranty is void and does not apply to any product and/or parts and components which have been improperly installed by the purchaser/owner, abused or damaged in any way through improper operation such as but not limited to derailment, repairs or modifications performed by non-authorized service centers or technicians.

SERVICING

Should your ARISTO-CRAFT TRAINS product require warranty service, please return it in the original box, if possible, protected by a proper shipping carton. Send the product fully insured and prepaid. ARISTO-CRAFT TRAINS will not be responsible for any loss or damage incurred during shipping. Be sure to include a brief, but thorough explanation of the problem, together with your name, street address (no Post Office box please), city state or province and country, if outside of the United States. Also include a daytime telephone number so that we may contact you if necessary. Your return address should be clearly marked on the outside of the shipping carton.

Payment for shipping and handling, in U.S. funds, is \$20.00 and should be included. Your check or money order should be made payable to: Polk's Modelcraft Hobbies, Inc. Do not send cash. If your item is not covered by warranty service, you will be contacted and a repair estimate given before any work commences. Warranty covers manufacturer defects, not normal wear and tear.

The shipping address to be used for returns is as follows:

ARISTO-CRAFT TRAINS / Polk's Modelcraft Hobbies, Inc.
Customer Service Department
698 South 21st Street
Irvington, NJ 07111 USA
Tel: (973) 351-9800

Written confirmation of receipt of returned items will be sent with estimated repair time by the ARISTO-CRAFT TRAINS Customer Service Department.