Overview:

The following pages show examples of using the DALLEE DCv3 sound card in conjunction with different AristoCraft radio receivers. These wiring diagrams show utilization of either the standard DC type sound cards or the "Auto-Whistle" or "Auto-Horn" reed switch type cards. The wiring is the same but the operation is different. The main difference is in the operation of the Whistle/Horn and Bell functions. The standard DCv3 sound card's only play the Whistle/Horn when the input (J4-1, S1) has a request to do so. Therefore, the Whistle/Horn will only play for as long as your function / radio button demands that request. The bell on these units is not latched as well, requiring a latch function on the receiver board. If a latching function output is not available, a constant holding of the "ON" button would have to happen for the bell to play. The "Auto-Whistle" and "Auto-Horn" sound units provide for the playing of a pattern for each activation of the Whistle/Horn input. Therefore, each time you request the Whistle/Horn to play a different pattern will play from the sound card. The length of the button depression on the radio control has nothing to do with the duration of the Whistle/Horn play with these units. The bell also has a latching function, so a latching function input is not desired from the receiver. Thus a push on, push off operation, with a pause between, is requied to operate the Bell on these systems.

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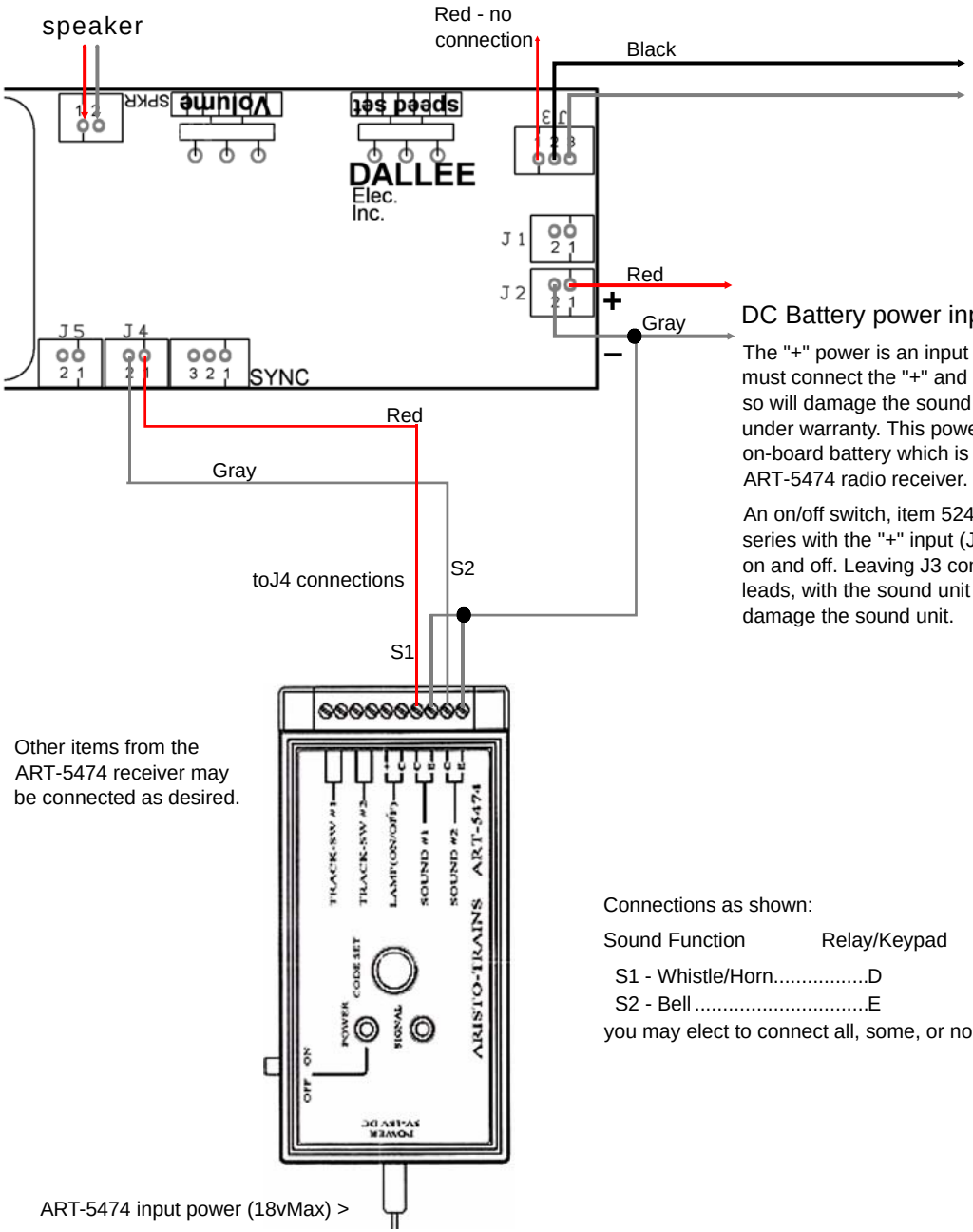
Aristocraft/Crest #ART-5474 receiver installation using battery power.



Diesel sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what speed/RPM to operate the diesel's prime mover.

Steam sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what rate to operate the auto-chuff. If you are using the "SYNC" input, don't connect anything to J3!

DC Battery power input.

The "+" power is an input for the sound system. You must connect the "+" and "-" correctly. Failure to do so will damage the sound unit and is not covered under warranty. This power comes from your on-board battery which is also used to power the ART-5474 radio receiver.

An on/off switch, item 524, can also be installed in series with the "+" input (J2) to turn the sound unit on and off. Leaving J3 connected to the motor leads, with the sound unit turned off, will not damage the sound unit.

Battery Input Power.

Typical input voltage of 7 to 24 volts DC or AC. Absoulute maximum input is 35 volts DC!

Connect to the track input from each truck. If this is an Aristocraft receiver in a non-equipped plug in, then connect to the same wires as the receiver board (wire #1 & #7, blue & yellow)

Battery Power Operators:

Track Input Power, J1, does not connect to anything in this type of installation.

J2 is the DC power input. Remember to keep the polarity correct. Plus to Plus (+) and Minus to Minus (-)! Input voltage of 7 to 24 volts DC or AC. Absolute maximum input is 35 volts DC! Your receiver battery power may be the same power as the sound system and amplifier (if present).

If you are using item 671 or 672, 11 or 22 watt amplifier, then connect the DC power to it's input power as well.

Connections as shown:

Sound Function	Relay/Keypad
S1 - Whistle/Horn	D
S2 - Bell	E

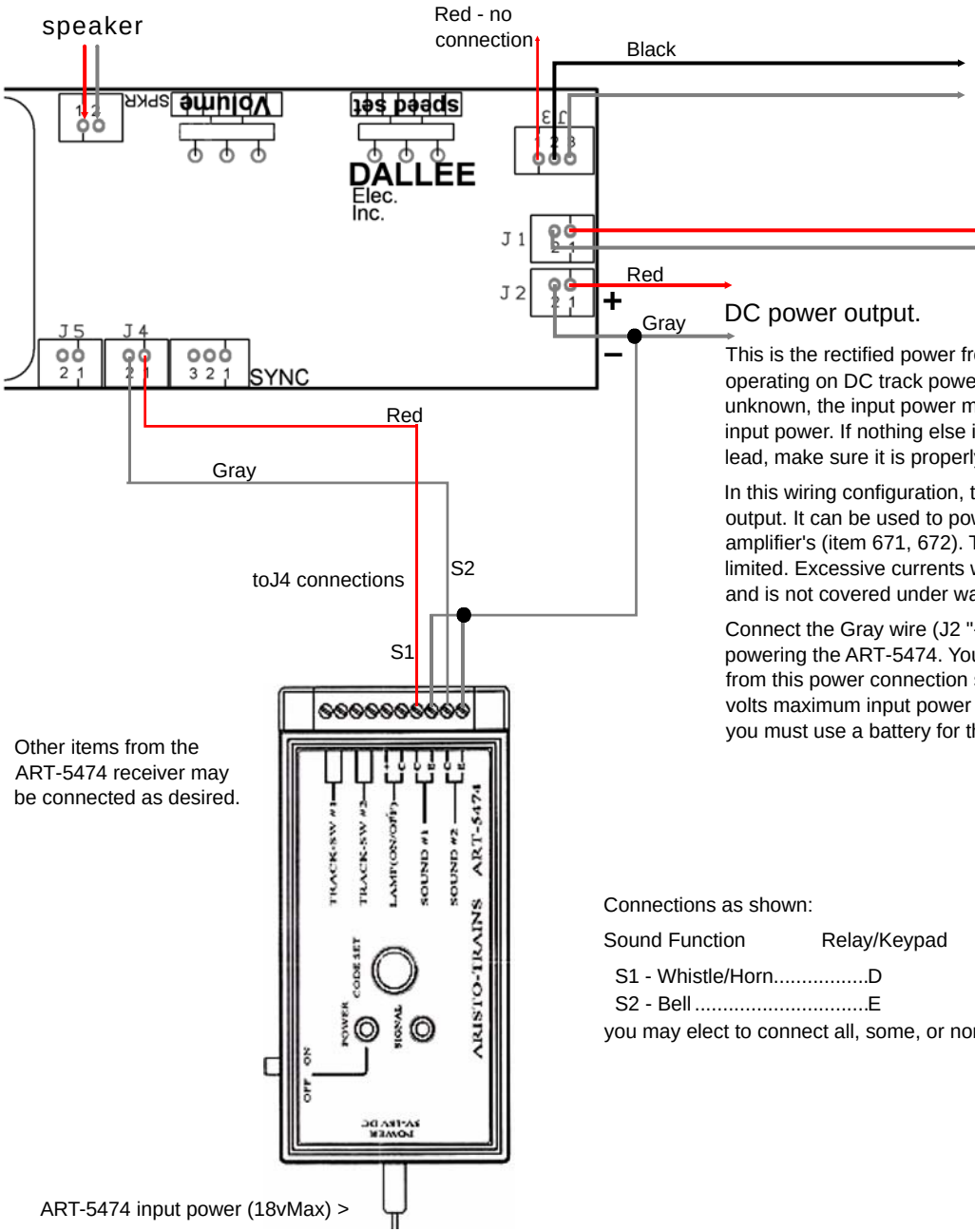
you may elect to connect all, some, or none.

Aristocraft Power Truck wire pickup help guide.

Terminal connection	wire color	receiver color
Left Rail pickup	Black	→ Yellow
Motor	Brown	→ White
Motor	Blue	→ Red
Right Rail pickup	Black	→ Blue

Left / right rail will reverse in the opposite pickup truck. This drawing was made from their SD45.

Aristocraft/Crest #ART-5474 receiver installation using track power.



Diesel sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what speed/RPM to operate the diesel's prime mover.

Steam sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what rate to operate the auto-chuff. If you are using the "SYNC" input, don't connect anything to J3!

Track Input Power.

Input voltage of 7 to 24 volts DC or AC. Absolute maximum input is 35 volts DC!

Connect to the track input from each truck. If this is an Aristocraft receiver in a non-equipped plug in, then connect to the same wires as the receiver board (wire #1 & #7, blue & yellow)

DC power output.

This is the rectified power from the sound system. When operating on DC track power, since the polarity is unknown, the input power must be connected to J1 (AC) input power. If nothing else is connected to J2's RED wire lead, make sure it is properly insulated to prevent a short.

In this wiring configuration, the "+" power is a DC power output. It can be used to power our 11 or 22 watt amplifier's (item 671, 672). The DC output power is limited. Excessive currents will damage the sound unit and is not covered under warranty

Connect the Gray wire (J2 "-") to the battery "-" that is powering the ART-5474. You cannot power the ART-5474 from this power connection since it would exceed the 18 volts maximum input power for the ART-5474. Therefore you must use a battery for the ART-5474.

Remember that track powered units will not operate properly until the track power is at least above 5 volts. Amplifier's require a minimum of 12 volts DC to operate! You can also use rechargeable batteries and wire as shown on page 3 or 4 of the main instructions.

Your receiver battery power may be the same power as the sound system and amplifier (if present). If you have a different battery for the receiver and sound system, then you should connect the "-" of each battery system together.

If you are using item 672, 22 watt amplifier, then connect the DC power to it as well.

Connections as shown:

Sound Function	Relay/Keypad
S1 - Whistle/Horn	D
S2 - Bell	E

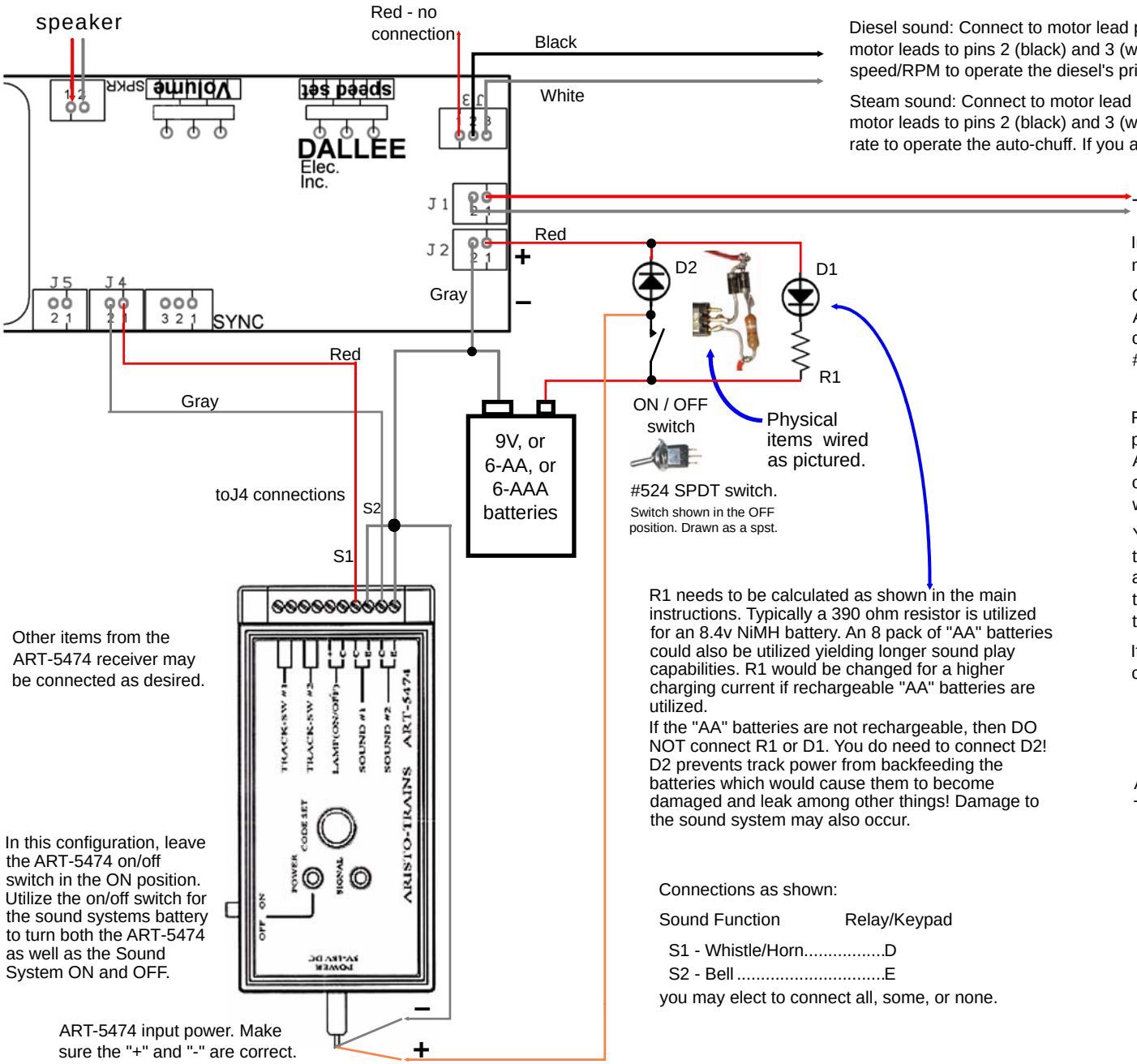
you may elect to connect all, some, or none.

Aristocraft Power Truck wire pickup help guide.

Terminal connection	wire color	receiver color
Left Rail pickup	Black	→ Yellow
Motor	Brown	→ White
Motor	Blue	→ Red
Right Rail pickup	Black	→ Blue

Left / right rail will reverse in the opposite pickup truck. This drawing was made from their SD45.

Aristocraft/Crest #ART-5474 receiver installation using track power and rechargeable batteries.



Other items from the ART-5474 receiver may be connected as desired.

In this configuration, leave the ART-5474 on/off switch in the ON position. Utilize the on/off switch for the sound systems battery to turn both the ART-5474 as well as the Sound System ON and OFF.

Diesel sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what speed/RPM to operate the diesel's prime mover.

Steam sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what rate to operate the auto-chuff. If you are using the "SYNC" input, don't connect anything to J3!

Track Input Power.

Input voltage of 7 to 24 volts DC or AC. Absolute maximum input is 35 volts DC!

Connect to the track input from each truck. If this is an Aristocraft receiver in a non-equipped plug in, then connect to the same wires as the receiver board (wire #1 & #7, blue & yellow)

Remember that track powered units will not operate properly until the track power is at least above 5 volts. Amplifier's require a minimum of 12 volts DC to operate! You can also use rechargeable batteries and wire as shown on page 3 or 4 of the main instructions.

Your receiver battery power may be the same power as the sound system and amplifier (if present). If you have a different battery for the receiver and sound system, then you should connect the "-" of each battery system together.

If you are using item 672, 22 watt amplifier, then connect the DC power to it as well.

R1 needs to be calculated as shown in the main instructions. Typically a 390 ohm resistor is utilized for an 8.4v NiMH battery. An 8 pack of "AA" batteries could also be utilized yielding longer sound play capabilities. R1 would be changed for a higher charging current if rechargeable "AA" batteries are utilized.

If the "AA" batteries are not rechargeable, then DO NOT connect R1 or D1. You do need to connect D2! D2 prevents track power from backfeeding the batteries which would cause them to become damaged and leak among other things! Damage to the sound system may also occur.

Connections as shown:

Sound Function	Relay/Keypad
S1 - Whistle/Horn	D
S2 - Bell	E

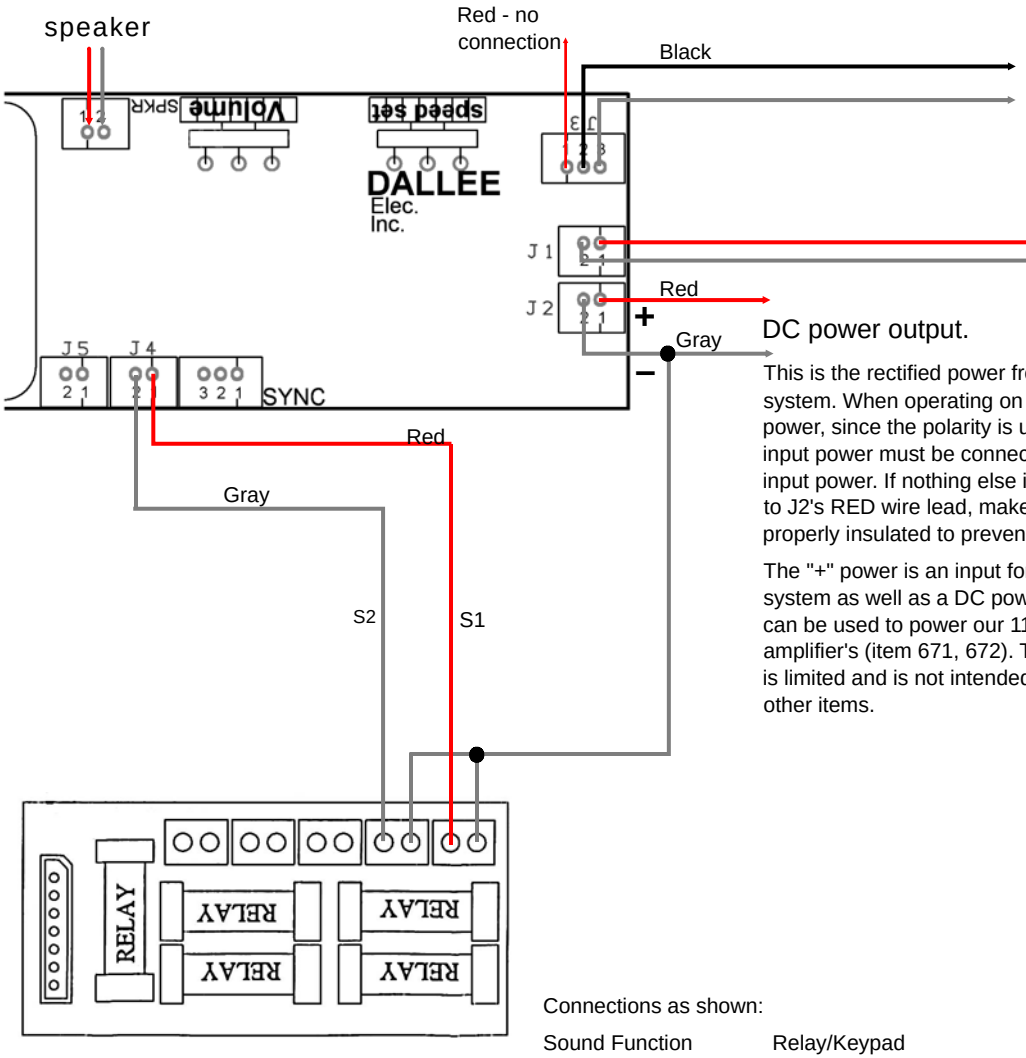
you may elect to connect all, some, or none.

Aristocraft Power Truck wire pickup help guide.

Terminal connection	wire color	receiver color
Left Rail pickup	Black	→ Yellow
Motor	Brown	→ White
Motor	Blue	→ Red
Right Rail pickup	Black	→ Blue

Left / right rail will reverse in the opposite pickup truck. This drawing was made from their SD45.

Aristocraft/Crest #CRE-55492 receiver (75MHz) installation.



Diesel sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what speed/RPM to operate the diesel's prime mover.

Steam sound: Connect to motor lead power (if not already connected). Then connect the motor leads to pins 2 (black) and 3 (white) of J3. This connection tells the sound system what rate to operate the auto-chuff. If you are using the "SYNC" input, don't connect anything to J3!

Track Input Power.

Input voltage of 7 to 24 volts DC or AC. Absolute maximum input is 35 volts DC!

Connect to the track input from each truck. If this is an Aristocraft receiver in a non-equipped plug in, then connect to the same wires as the receiver board (wire #1 & #7, blue & yellow)

DC power output.

This is the rectified power from the sound system. When operating on DC track power, since the polarity is unknown, the input power must be connected to J1 (AC) input power. If nothing else is connected to J2's RED wire lead, make sure it is properly insulated to prevent a short.

The "+" power is an input for the sound system as well as a DC power output. It can be used to power our 11 or 22 watt amplifier's (item 671, 672). The DC output is limited and is not intended to operate other items.

Remember that track powered units will not operate properly until the track power is at least above 5 volts. Amplifier's require a minimum of 12 volts DC to operate! You can also use rechargeable batteries and wire as shown on page 3 or 4 of the main instructions.

Your receiver battery power may be the same power as the sound system and amplifier (if present). If you have a different battery for the receiver and sound system, then you should connect the "-" of each battery system together.

If you are using item 672, 22 watt amplifier, then connect the DC power to it as well.

to switch connections above

Cable plugs into receiver board

Aristocraft relay board (ART-5495)

Connections as shown:

Sound Function	Relay/Keypad
S1 - Whistle/Horn	A
S2 - Bell	B

you may elect to connect all, some, or none.

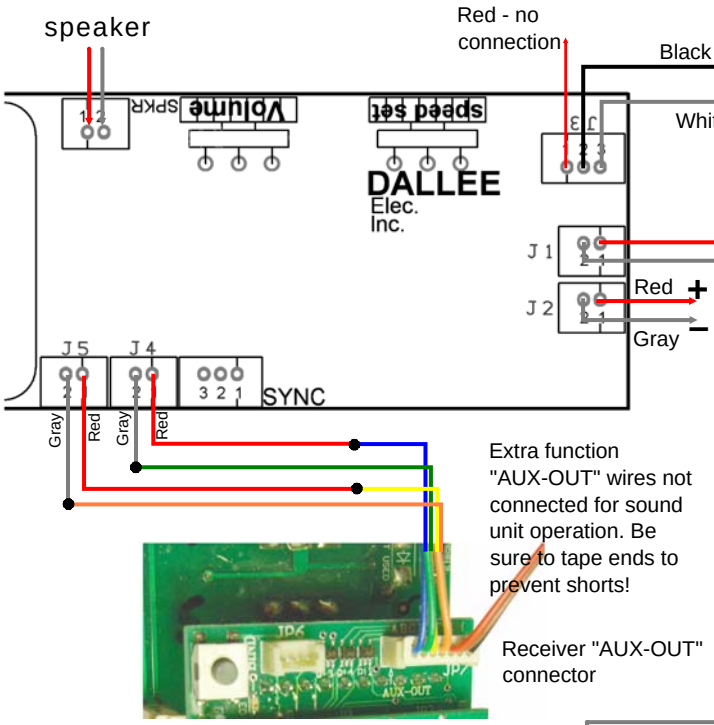
Aristocraft Power Truck wire pickup help guide.

Terminal connection	wire color	receiver color
Left Rail pickup	Black	→ Yellow
Motor	Brown	→ White
Motor	Blue	→ Red
Right Rail pickup	Black	→ Blue

Left / right rail will reverse in the opposite pickup truck. This drawing was made from their SD45.

Aristocraft/Crest #CRE-57000 Revolution Receiver (2.4 GHz) installation.

Standard DCv3 or Auto-Horn / Auto-Whistle Sound System



AristoCraft boards labeled "SOUND PWR" are actually connected to the "Motor Power" before the motor "On/Off" switch. While they can be connected to this connector, it is not ideal since the motor switch does not disconnect this connection when the motor power is switched off. Connect these two wires to either the motor power leads or the "Sound Pwr" connector wires. This is the same that goes to the motor. The "Sound Power" should come from the track or battery and not the motor in this application. See wiring example on lower part of this page.

Diesel sound: This connection tells the sound system what speed / RPM to operate the diesel's prime mover sound.

Steam sound: This connection tells the sound system what rate to operate the auto-chuff. If you are using the "SYNC" input, don't connect anything to J3!

J2: DC power input/output.

This is the rectified power from the sound system. When operating on DC track power, since the polarity is unknown, the input power must be connected to J1 input power.

The J2 power is an input for the sound system as well as a DC power output when J1 is the input power. It can be used to power our 11 or 22 watt amplifier's (item 671, 672). The DC output is limited and is not intended to operate other items.

If you purchased the "Auto-Horn" or "Auto-Whistle" type sound units, you will not have enough 2 pin connectors to utilize both J2 and J5. Normally this is not a problem since J2 is normally not connected. Extra wire harnesses can be purchased if needed.

J1: Track Input Power.

Input voltage of 7 to 24 volts DC or AC. Absolute maximum input is 35 volts DC!

Connect to the track input from each truck, detailed picture shown below for AristoCraft engines.

Remember that track powered units will not operate properly until the track power is at least above 6 volts. Amplifier's require a minimum of 12 volts DC to operate!

Your receiver battery power may be the same power as the sound system and amplifier (if present). If you have a different battery for the receiver and sound system, then you should connect the "-" of each battery system together.

Sound Function	Keypad	Wire Clr	Std	Auto
J4-1 - Whistle/Horn	A	Blue	M	M
J4-2 - Bell	B	Green	L	M
J5-1 - Force N8/Cyl Blow Down	C	Yellow	L	L
J5-2 - Main Sounds OFF/ON	D	Orange	L	L

you may elect to connect all, some, or none.

Std: Standard DC type sound unit. These allow the Horn/Whistle to be played on demand.

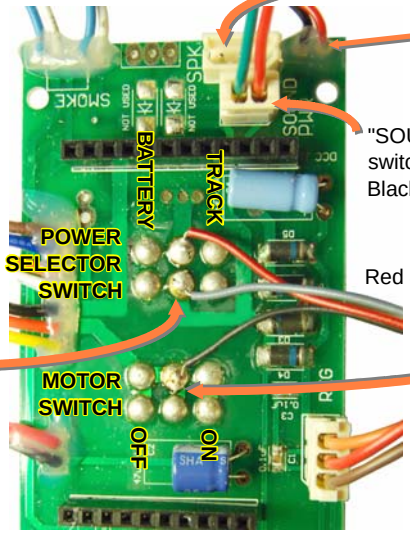
Auto: Auto-Horn/Whistle unit. These units play Horn/Whistle patterns each time they are triggered.

M: Momentary L: Latching

J1: "Sound Power" connection.

As shown, solder the red & gray wires to the center of the "Battery / Track" power selector switch. This connects to J1 of the sound system and is the best selection to power the sound unit since polarity is not important. This is also true when operating the sound unit w/o a receiver as well.

Mother Board w/o receiver:



"SPK" : Speaker connector. Connect to Sound units "SPKR" connector wires.

If you did not purchase connectors, cut or splice the Red & Gray wires that connect to the "SPKR" socket to the Red & Black wires from the main board. Either wire nut or solder and tape / heat shrink tube the connection.

"SOUND PWR" connector is internally connected to the motor power before the Motor ON/OFF switch. Therefore if you use the Red & Green wires from this and connect them to the J3 White & Black wires, the sound unit will ramp up/down with speed setting changes w/o the motor running when the MOTOR switch is set to the OFF position. To prevent this from happening, solder the Black J3 wire as shown to the middle of the MOTOR switch and the "SOUND PWR" Green wire to the White J3 wire (cut or tape the Red "SOUND PWR" wire since it is not used). By doing so, when the motor power switch is turned OFF the sound system will produce idle sounds.

Red & Gray to J1

Remember, if this is a steam sound unit and you are intending to synchronize the chuff sound, don't connect the J3 black & white wires to this board. They get connected to the synchronization device and to the "SYNC" connector and not J3! Only older software units require both J3 and the SYNC connector to be used.