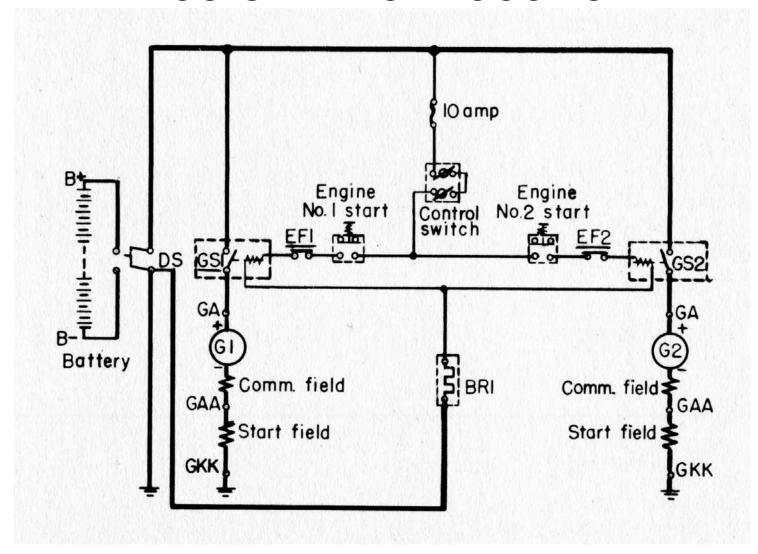
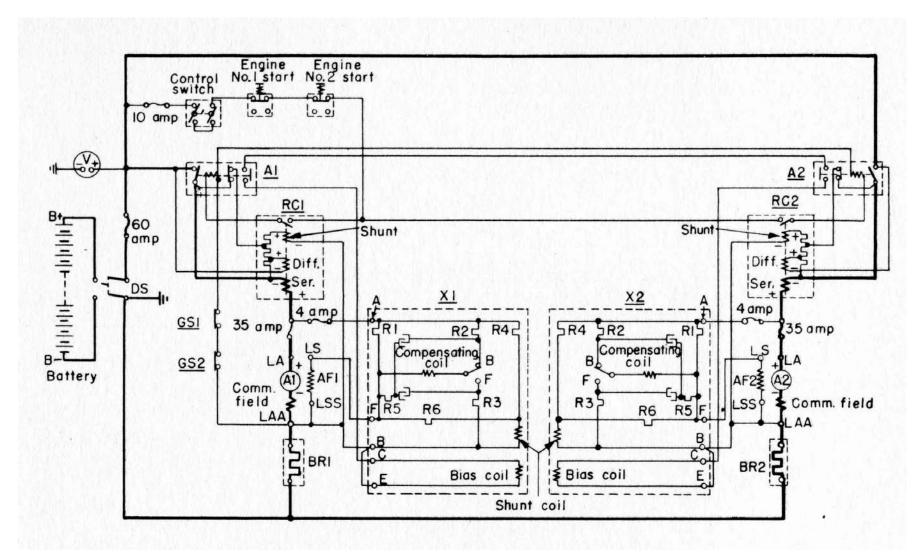
SAMPLE PHYSICAL SCHEMATIC AND AIR BRAKE DIAGRAMS

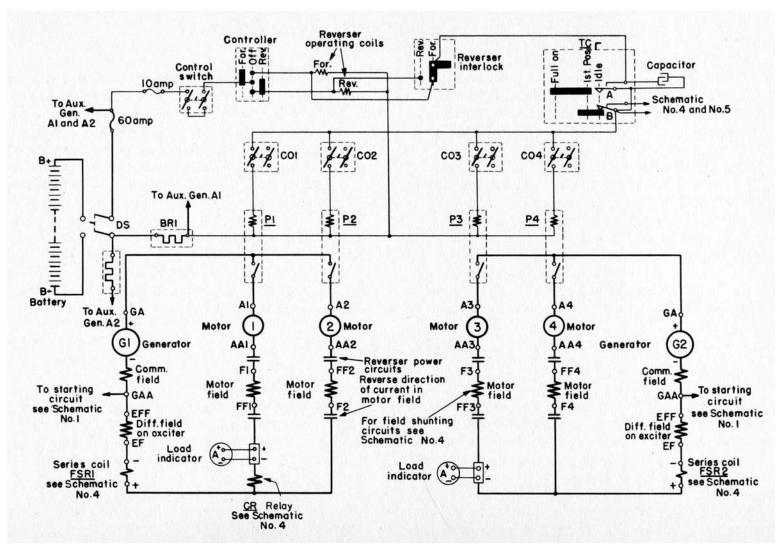
COMPILED BY PRESTON COOK
FOR THE RAILROAD MUSEUM OF NEW ENGLAND
FROM ALCO-GE SERVICE MANUALS
AND PUBLICATIONS



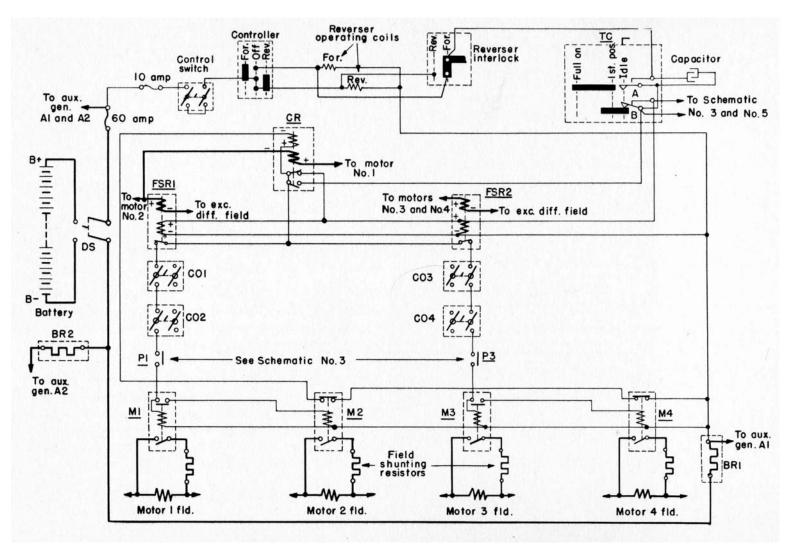
TYPICAL STARTING CIRCUIT



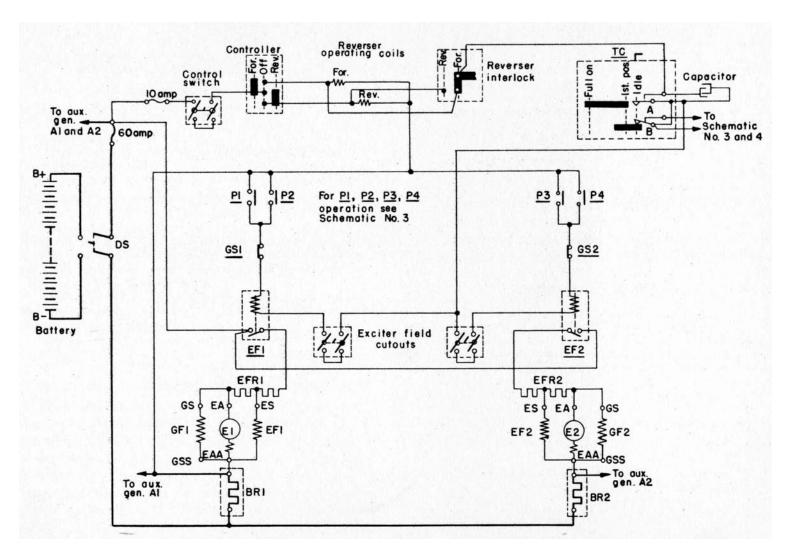
TYPICAL BATTERY CHARGING CIRCUIT



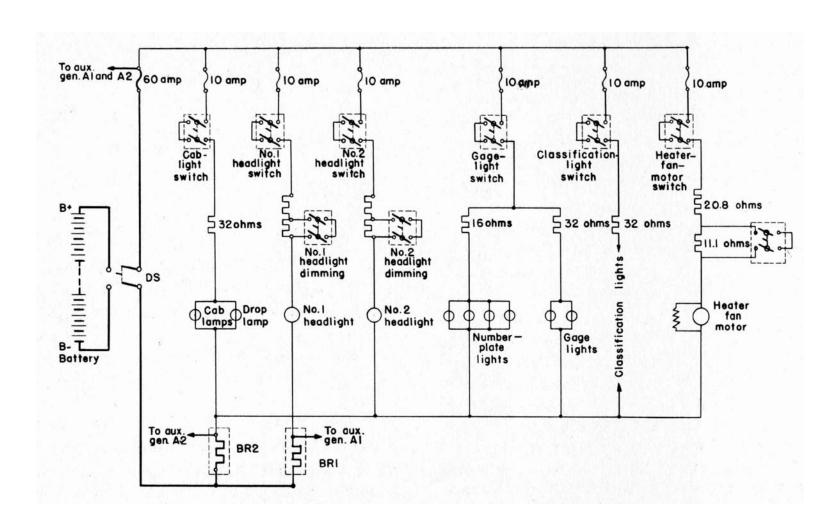
TYPICAL MOTOR POWER CIRCUIT



TYPICAL MOTOR SHUNTING CIRCUIT



TYPICAL GENERATOR FIELD CIRCUIT



TYPICAL LIGHTING AND AUXILIARY CIRCUIT

WIRING DIAGRAM SYMBOLS Three phase selenium rectifier Selenium rectifier used as blocking rectifier Capacitor Tube resistor Rheostat Operating coil Circuit breaker Normally closed bridge type contact or interlock Normally open bridge type contact or interlock Normally closed finger type contact or interlock Normally open finger type contact or interlock Shunt field winding Commutating field winding Snap switch Main battery switch

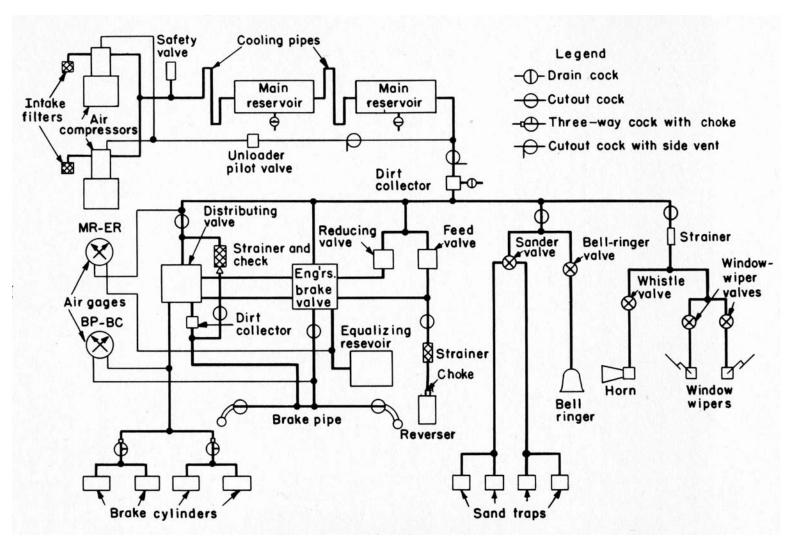
Throttle contact or engine control switch contact. These contacts are marked to show throttle or engine control

switch positions in which they are closed.

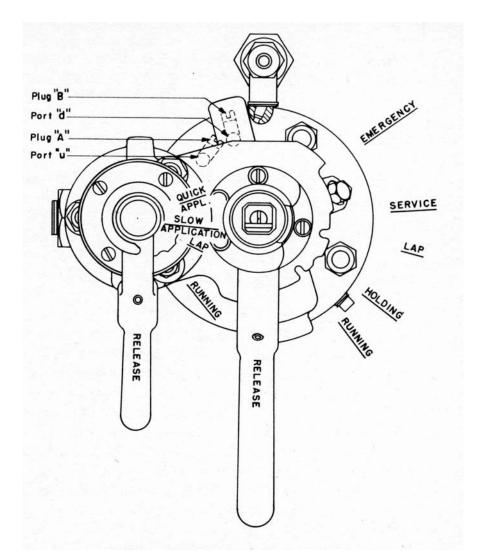
CONDITION NO.1 ENGINE START NO.2 ENGINE START IDLING		THRO	HROTTLE SWITCH		CONTACTORS										RELAYS				
			TC		N.	m	41	-1	QI.	-	01 41	=1	N	-1	N		011	<u>~</u> 1	S
		A	В	리	2	2	4	B	MZ	M	A 4	651	652	EFI	EF2	A	A2	FSRI	FSR2
												•		7	-				
				-									•			•	•		
	LOW SPEED	0		•	•	•	•							•	•		ě	•	•
	HIGH SPEE	D •		•	•	•	•							•	•	•	•	•	•
REDUCED FIELD	MOMENTAR	RY		•	•	•	•	•		•				•	•	•	•		
	RUNNING			•	•	•	•	•	•	•	•			•	•	•	•		
WITH NO.I ENGINE SHUT DOWN & WITH COI, CO2,& NO.I EXCITER FIELD SWITCHES OPEN						•	•								•		•		
MAX. SPEED CO WITH NO.2 ENC DOWN & WITH NO.2 EXCITER F SWITCHES	SINE SHUT			•	•			•	•					•		•			
MAX. SPEED CONNECTION WITH A MOTOR CUT OUT	NO.1 CO	•			•	•	•							•	•	•	•		
	NO.2 CO			•		•	•			•	•			•	•	•	•		
	NO. 3 CO			•	•		•	•	•					•	•	•	•		
	NO.4 CO				•	•													

*THIS TABLE INDICATES THE POSITION OF THE ARMATURE OF FIELD-SHUNTING RELAYS FSRI AND FSR2; THE RELAY CONTACTS ARE NORMALLY CLOSED WITH THE OPERATING COILS DE-ENERGIZED AND THE ARMATURE OPEN.

WIRING DIAGRAM SYMBOLS AND CONTROL SEQUENCE CHART



AIR SYSTEM SCHEMATIC DIAGRAM



INDEPENDENT AND AUTOMATIC AIR BRAKE HANDLES