

AUTHORITY, CONTROL, and PROTECTION (A-C-P)

To Establish
Safe and **Efficient**
Railroad Movements

A mini-clinic by Rick Kang
Vegetable Northern Transportation Co.

Based on concept developed by
Mr. W. H. "Bill" Farrens
Rules & Training Officer
Southern Pacific Trans. Co.
c1972

To Occupy MAIN TRACK

- The primary track BETWEEN and THROUGH stations/yards where
- Trains and Engines move at TRACK SPEED (potentially fast!)

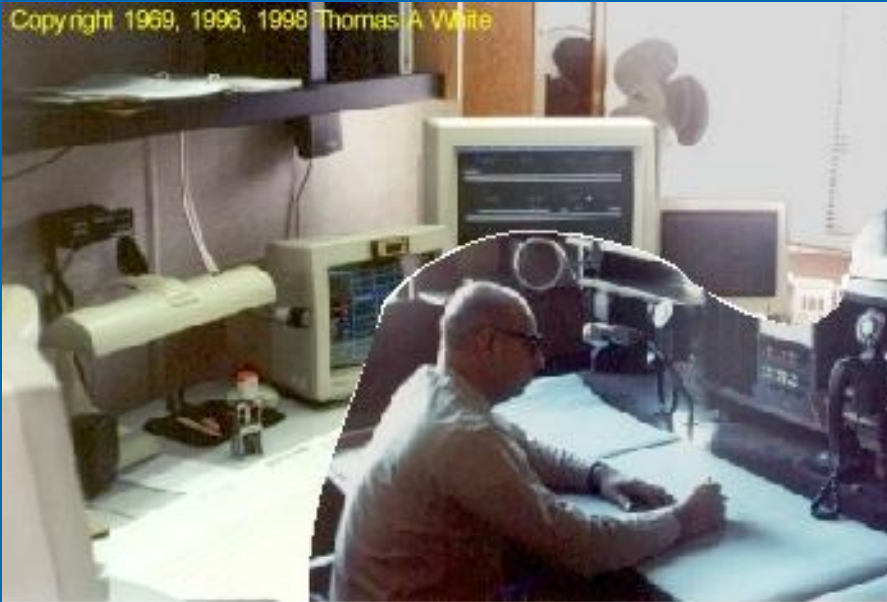
You generally need AUTHORITY (permission) from the person who coordinates movements (Train Dispatcher)

The “HIGH IRON”

Track Speed depends on engineering of Right of Way



Train Dispatchers at work providing A-C-P on Main Track



AUTHORITY in form of

1. Clearance Card assigns train to move on a Timetable Schedule (NO 11)
2. Train Order authorizes train to RUN EXTRA or WORK EXTRA (creates EXTRA)
3. Interlocking or Absolute SIGNAL INDICATION (CTC/Interlocking limits) (NOT necessarily an Automatic Block Signal!)
4. Direct Traffic Control (DTC) block authority or Track Warrant Control (TWC) segment authority.
5. Timetable/Special Instructions: Staff Territory, D-251 Territory, Rule 97 Territory
6. Yard Limits in effect (Rule 93 Territory – our main clinic)
7. (You can always Flag your way out there, but inefficient and may be frowned upon!)

Clearance Card confirms orders received, and at initial station may assign physical train to timetable schedule.

A		Missouri Pacific Lines		A	
		Clearance Form A			
Station _____, 19____					
C&E _____					
1.	I have _____ orders for your train. Train order numbers delivered.				
	Orders No. _____, No. _____, No. _____, No. _____, No. _____, No. _____, No. _____, No. _____, No. _____,				
2.	Manual block between _____, and _____ is _____ by _____				
3.	Superior train due at _____ by _____ M have arrived or departed except _____				
4.	_____ has arrived at _____, Proceed.				
_____ Operator Time _____					
OPERATOR WILL PLACE AN X OVER UNUSED NUMBERED PARTS					

CONTROL (Spatial and Temporal LIMITS)

1. For REGULAR TRAINS: Originating and Terminating Stations of a SCHEDULE, and Station Leaving Times (and RUN LATE T.O.)
2. For EXTRAS: Run/Work limits: RUN EXTRA ANNA TO CLOY, WORKS EXTRA BETWEEN CLOY AND DORRIS 801 AM UNTIL 301 PM, also MEET, RIGHT OVER, WAIT orders.
3. Block and specified limits and restrictions included in DTC/TWC authority.
4. Authorizing signals from SIGNAL to NEXT SIGNAL or END OF CONTROL LIMITS
5. Other methods as specified in TT/Spec.Instr.

PROTECTION (against collisions – head, rear, conflicting route)

1. **REGULAR TRAINS:** Rules that specify protocols for **SUPERIORITY** (class and direction) and **CLEARING** times.
2. **EXTRAS:** Rules that specify protocols for **SUPERIORITY** (right and direction), and **CLEARING** times.
3. **RULES** to safely enter **MAIN TRACK** (10" wait, etc.)
4. **FLAG PROTECTION RULES** (Rule 99)
5. Compliance with **SIGNAL INDICATIONS:** **INTERLOCKING** (head on) and **BLOCK** (rear end)
6. **SINGLE MOVEMENT** on **TRACK** (staff territory)
7. **RESTRICTED SPEED** (moving prepared to stop within half the range of vision short of...) – restrictive signals, yard limits, joint time

Automatic Block Signal vs Interlocking (Absolute) Signal



SUMMARY of A-C-P

1. **AUTHORITY**: permission to occupy and move on MAIN TRACK
 2. **CONTROL**: Limits specified on your movement: spatial, temporal
 3. **PROTECTION**: Methods, Rules, Hardware to prevent collisions
- When you're operating on the **MAIN TRACK**, consider and respect **ALL THREE ITEMS**.
 - Proper implementation of A-C-P provides **SAFETY** of movements, and **EFFICIENCY** (minimizing delays).