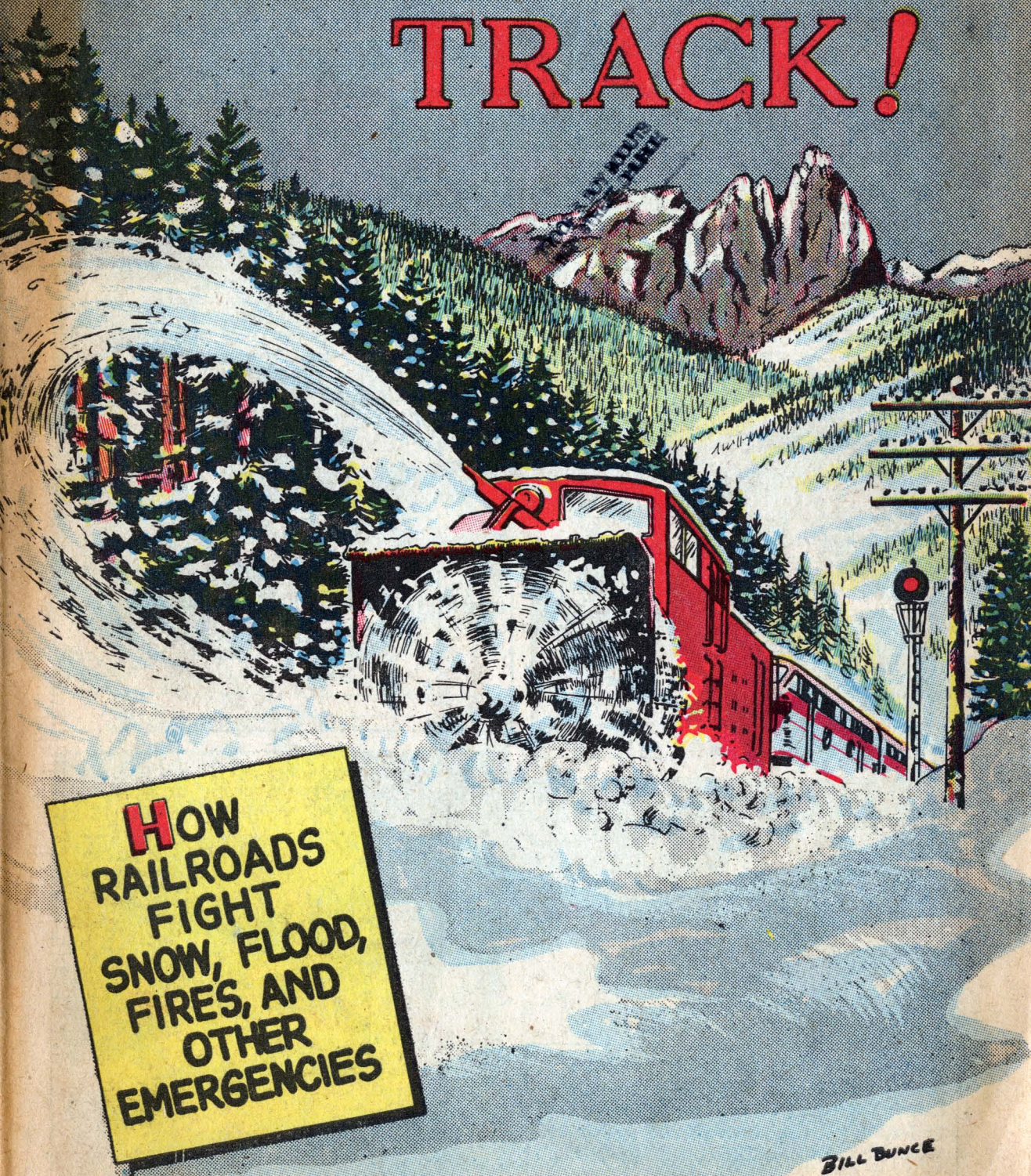


CLEAR THE TRACK!



HOW
RAILROADS
FIGHT
SNOW, FLOOD,
FIRES, AND
OTHER
EMERGENCIES

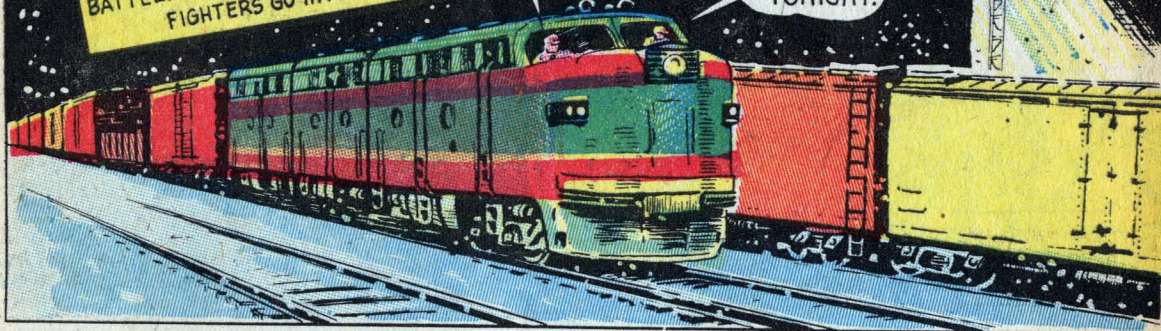
BILL BUNCE

IN A LARGE PART OF THE COUNTRY, WINTER STORMS ARE RAILROADS' WORST ENEMIES. SWITCHES FREEZE. TRACKS DRIFT OVER WITH SNOW. WIRE LINES BREAK. KEEPING THE TRAINS ROLLING BECOMES A REAL BATTLE. THIS IS HOW RAILROAD SNOW-FIGHTERS GO INTO ACTION...

ON A WINTER NIGHT, FAST FREIGHT NO. 109, WESTBOUND, BEGINS ITS RUN...

IT'S STARTING TO SNOW, SAM, AND IT'S GETTING COLDER.

YES, IT'S GOING TO BE TOUGH TONIGHT.



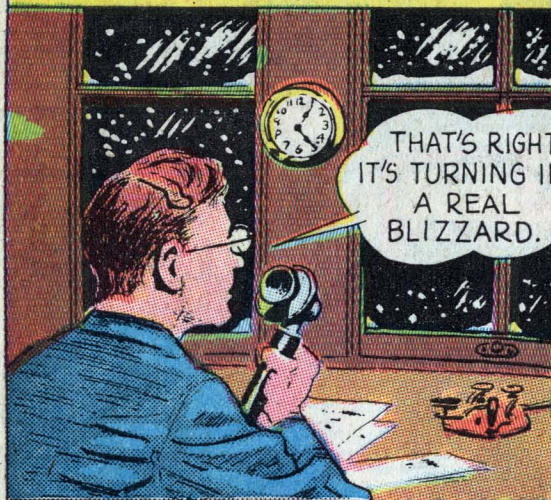
... AND FROM TOWERS OUT ON THE LINE COME REPORTS OF MORE SNOW AND TRACKS DRIFTING OVER...

... AS THE WIND PILES SNOW ALONG THE RIGHT OF WAY.

SNOW FENCES ARE DOING A GOOD JOB ALONG HERE.

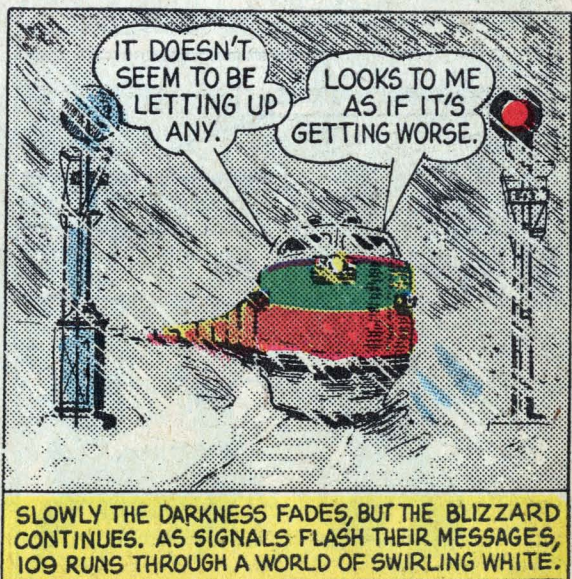
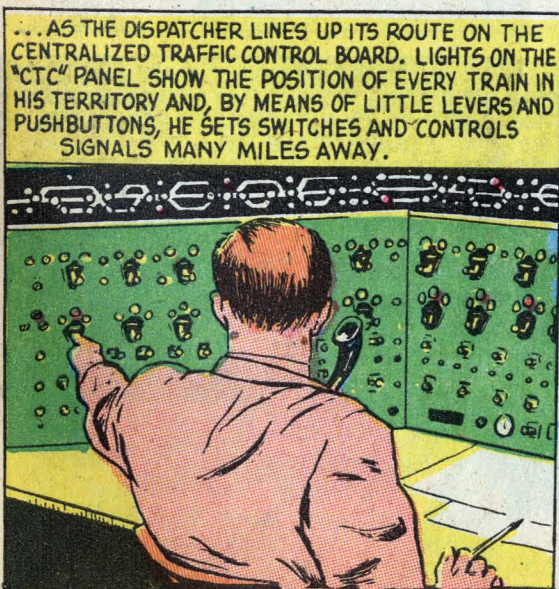
THEY HELP ALL RIGHT, BUT I'LL BET IT'S WORSE UP AHEAD.

THAT'S RIGHT. IT'S TURNING INTO A REAL BLIZZARD.



HOWEVER, THE RAILROAD IS READY. AHEAD OF 109, THE FIRST OF THE HEAVY SNOW-FIGHTING EQUIPMENT COMES OUT—A WING PLOW PUSHED BY TWO POWERFUL LOCOMOTIVES—AND THE WORK OF CLEARING THE LINE BEGINS.





THE LINE IS SUPPOSED TO BE CLEAR AS FAR AS PULP SIDING. MAYBE THE DISPATCHER CAN GIVE US A MEET THERE WITH 22.

AT THE DIVISION POINT, A NEW TRAIN CREW TAKES OVER. IN THE CUPOLA ATOP THE CABOOSE, THE CONDUCTOR WATCHES THE TRAIN AHEAD...



...WHILE THE ENGINEER, FOLLOWING CAUTION ORDERS, EASES THE TRAIN UP THE MAIN LINE. IN THE MOUNTAINS AHEAD, WIRES ARE DOWN AND SNOW IS DRIFTING INTO THE CUTS. WEDGE AND WING PLOWS ARE HAVING TROUBLE BUCKING THEIR WAY THROUGH THE DRIFTS...

DO YOU THINK WE CAN MAKE PULP SIDING OKAY?

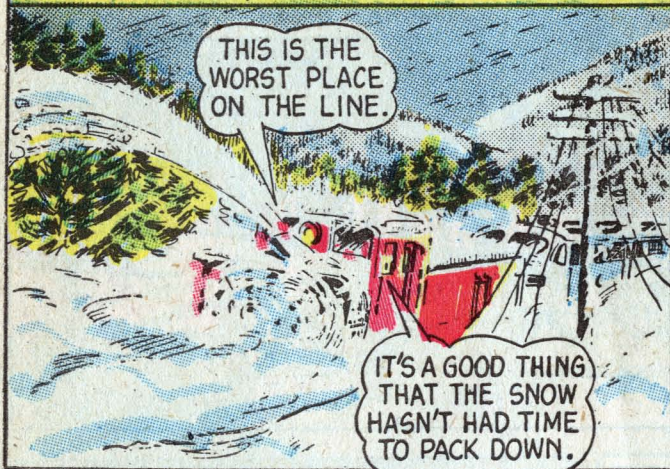
I THINK SO. THE PLOW TRAINS HAVE BEEN WORKING ALL NIGHT.



...AND THE BIG ROTARY PLOW HAS BEEN CALLED OUT. THE "ROTARY," A HUGE WHEEL OF CUTTING BLADES ENCASED IN A CYLINDER, CHEWS ITS WAY THROUGH DRIFTS, THROWING SNOW OUT TO THE SIDES...

THIS IS THE WORST PLACE ON THE LINE.

IT'S A GOOD THING THAT THE SNOW HASN'T HAD TIME TO PACK DOWN.

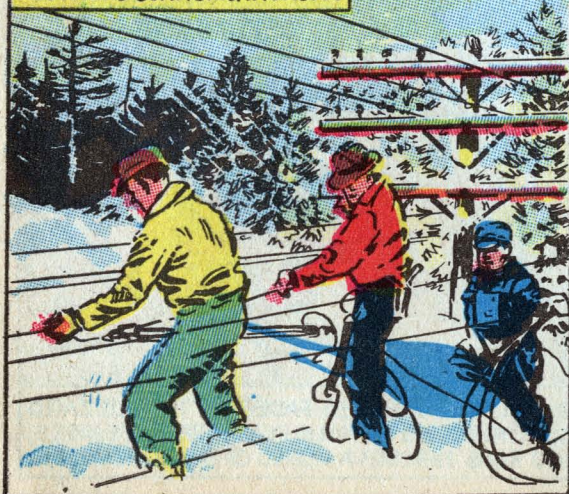


...AND OPENS THE TRACK.

NOW WE'RE IN THE CLEAR!



MEANWHILE, LINEMEN ARE RESTORING COMMUNICATIONS...

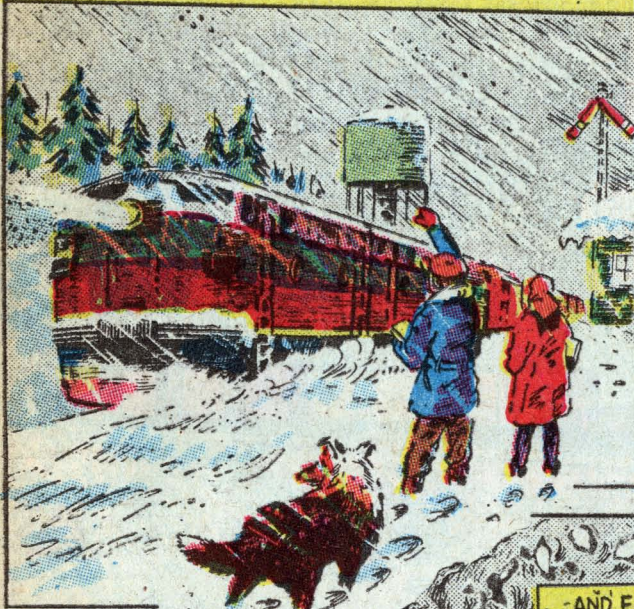


...AND WHILE SNOW FIGHTERS ARE AT WORK, 109 ROLLS ONTO THE PASSING TRACK AT PULP SIDING. HALF AN HOUR LATER NO. 22, A STREAMLINED PASSENGER TRAIN, ROARS BY.

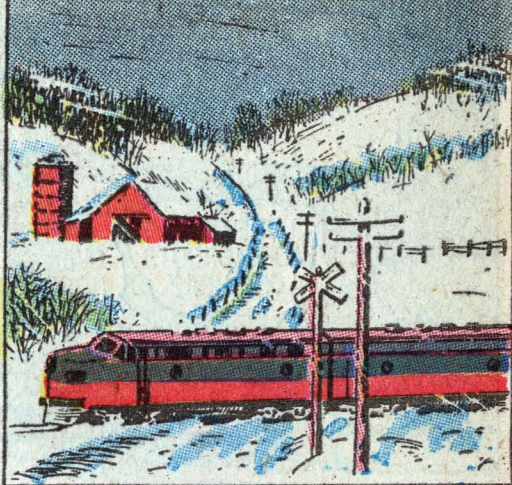
NO. 22 IS BY. NOW WE HAVE TO WAIT FOR 112.



PROCEEDING ON ITS RUN WITH CLEAR TRACK AHEAD,
109 ROLLS THROUGH TOWNS AND VILLAGES...



...AND SNOWY COUNTRYSIDE...



...AND ENDS ITS RUN AT THE TERMINAL. THERE
THE TRACKS ARE BEING CLEARED BY SPECIAL
SNOW REMOVAL EQUIPMENT SUCH AS MELTERS—
HUGE MACHINES WHICH PICK UP SNOW AND DUMP
IT INTO MELTING TANKS HEATED BY STEAM.



...BUT TERMINAL
OPERATIONS ARE GOING
ON AS USUAL. MEN AND
MACHINES WORK 'ROUND
THE CLOCK TO OBEY
THE SUPREME LAW
OF RAILROADING—
TO KEEP THE TRACK
OPEN.



SOME WORK IS ALSO BEING DONE WITH PLAIN
PICK AND SHOVEL AS 109 ENTERS THE
RECEIVING YARD. SNOW IS STILL BLOWING...



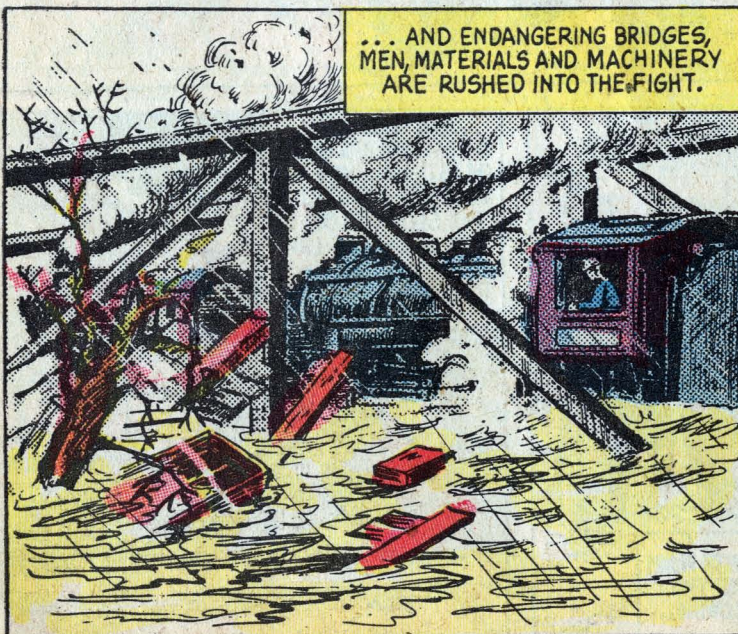
FLOODS ALSO CHALLENGE RAILROADING SKILL. WHEN SWOLLEN RIVERS GO ON RAMPAGE, CAREENING THROUGH THE COUNTRYSIDE, WASHING OUT TRACK...

THERE'RE SOME BAD WASHOUTS ALONG HERE.

THAT'S WHY THEY SWITCHED US OVER ON THE NORTHBOUND TRACK.



... AND ENDANGERING BRIDGES, MEN, MATERIALS AND MACHINERY ARE RUSHED INTO THE FIGHT.

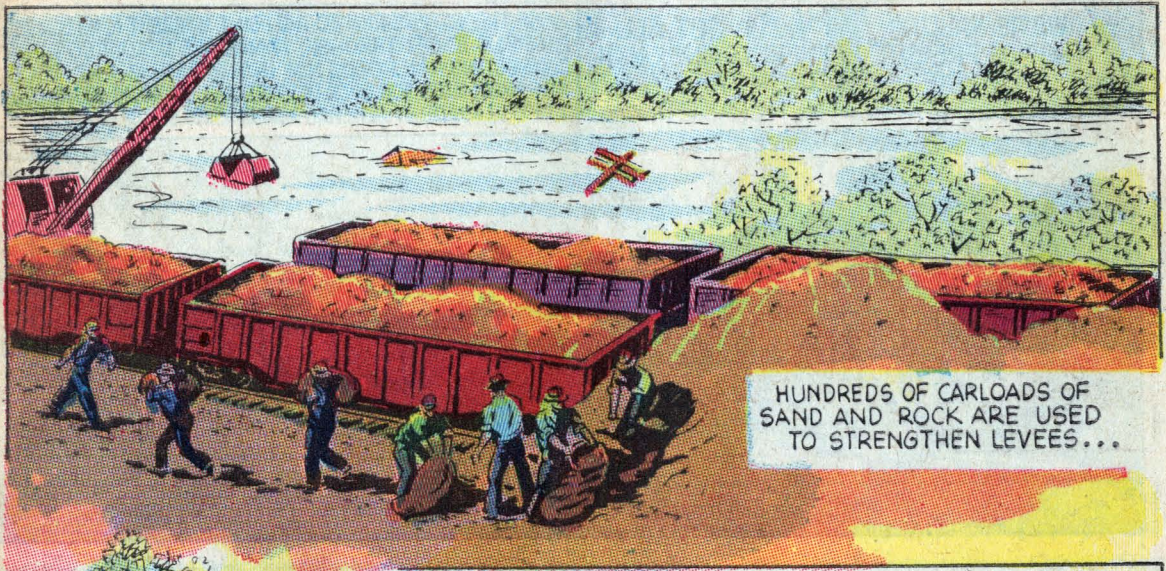


"THE RAILROADS, OF COURSE, MAKE EVERY EFFORT TO PREPARE FOR FLOODS. IN LOWLAND AREAS THEY BUILD LEVEES OR SEA WALLS TO HOLD BACK FLOOD WATERS FROM VITAL PARTS OF THE RAILROAD. THE RAILROAD MAINTENANCE-OF-WAY DEPARTMENT MAKES SURE THAT AMPLE SUPPLIES OF SAND-BAGS, BALLAST, TRACK MATERIAL, AND WORK EQUIPMENT ARE DISTRIBUTED TO ALL POINTS WHERE FLOOD DANGERS MIGHT THREATEN."

RISEING WATERS MAY WASH OUT PORTIONS OF ROADBED...



... BUT TRACK CREWS JACK UP RAILS, FILL IN BENEATH WITH ADDITIONAL TIES AND BALLAST. THIS IS CALLED "CRIBBING."



HUNDREDS OF CARLOADS OF SAND AND ROCK ARE USED TO STRENGTHEN LEVEES...

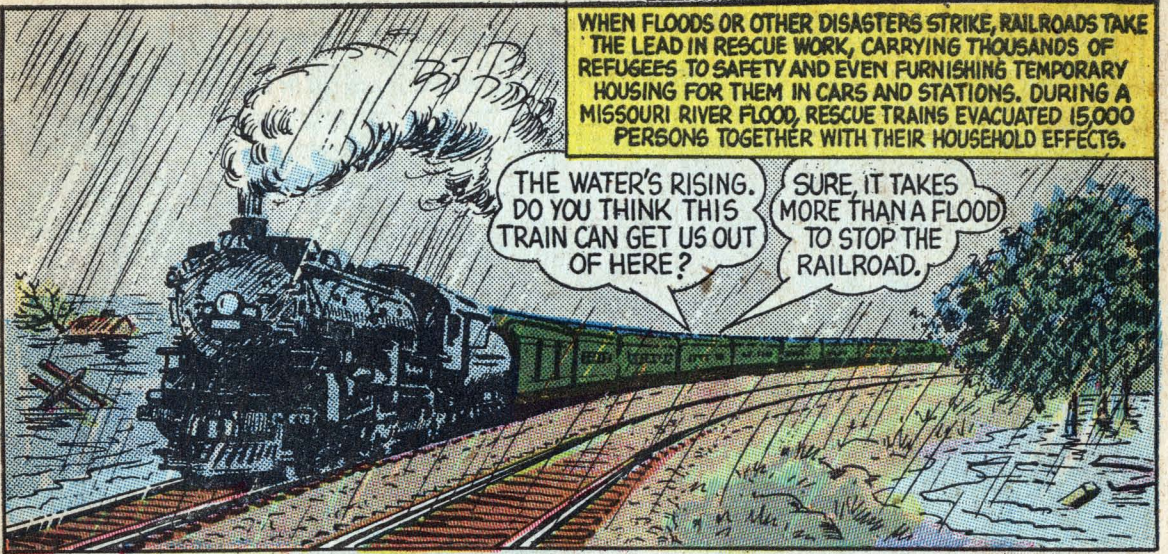
... AND TO FORM SANDBAG BARRICADES TO KEEP NEW BALLAST FROM BEING WASHED AWAY AS BRIDGE AND TRACK FORCES, ASSEMBLED FROM PERHAPS, HUNDREDS OF MILES AWAY, WORK DAY AND NIGHT IN REPLACING TRACK.



WHEN FLOODS OR OTHER DISASTERS STRIKE, RAILROADS TAKE THE LEAD IN RESCUE WORK, CARRYING THOUSANDS OF REFUGEES TO SAFETY AND EVEN FURNISHING TEMPORARY HOUSING FOR THEM IN CARS AND STATIONS. DURING A MISSOURI RIVER FLOOD, RESCUE TRAINS EVACUATED 15,000 PERSONS TOGETHER WITH THEIR HOUSEHOLD EFFECTS.

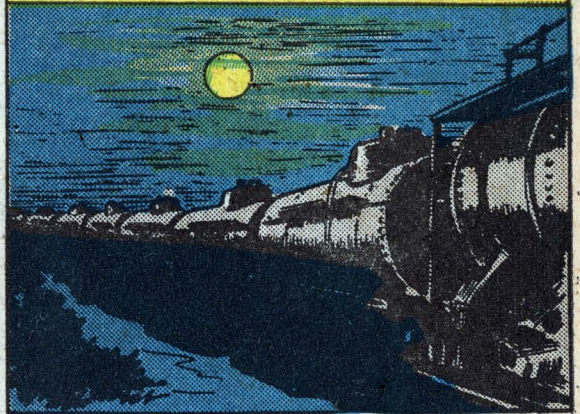
THE WATER'S RISING. DO YOU THINK THIS TRAIN CAN GET US OUT OF HERE?

SURE, IT TAKES MORE THAN A FLOOD TO STOP THE RAILROAD.



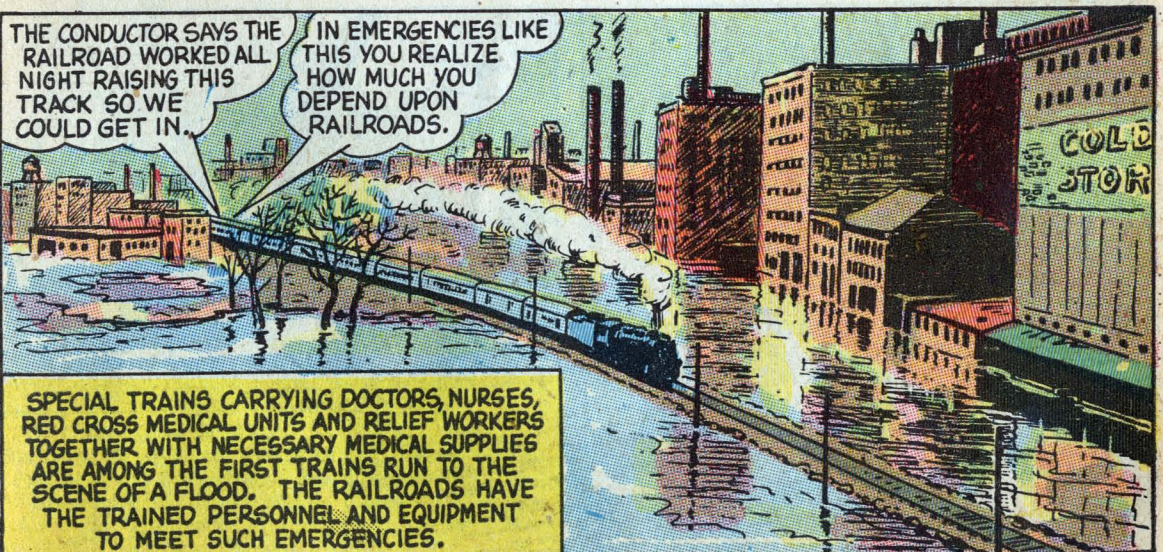
AND IT IS THE RAILROAD THAT IS CALLED UPON FOR THE MASS MOVEMENT OF EMERGENCY SUPPLIES OF ALL KINDS—FOOD, FUEL, BOATS, TENTS, BEDDING, AND EVEN DRINKING WATER.

DURING A RECENT MID-WEST FLOOD A SHORTAGE OF CHLORINE FOR CITY WATER WAS MET BY ONE RAILROAD WHICH LOCATED A SUPPLY AND RUSHED IT 120 MILES TO THE DEVASTATED AREA.



THE CONDUCTOR SAYS THE RAILROAD WORKED ALL NIGHT RAISING THIS TRACK SO WE COULD GET IN.

IN EMERGENCIES LIKE THIS YOU REALIZE HOW MUCH YOU DEPEND UPON RAILROADS.

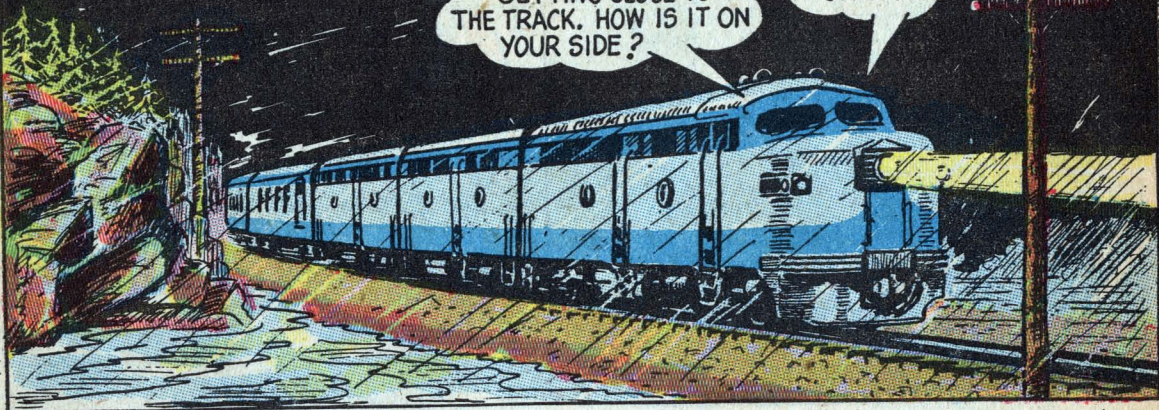


SPECIAL TRAINS CARRYING DOCTORS, NURSES, RED CROSS MEDICAL UNITS AND RELIEF WORKERS TOGETHER WITH NECESSARY MEDICAL SUPPLIES ARE AMONG THE FIRST TRAINS RUN TO THE SCENE OF A FLOOD. THE RAILROADS HAVE THE TRAINED PERSONNEL AND EQUIPMENT TO MEET SUCH EMERGENCIES.

DURING FLOODS (AND ALL OTHER EMERGENCIES) THE RAILROADS' FIRST EFFORT IS TO GET THE TRAINS THROUGH, AFTER WHICH THE LINE IS RESTORED TO PERMANENT CONDITION. HOWEVER,...

THE WATER'S GETTING CLOSE TO THE TRACK. HOW IS IT ON YOUR SIDE?

ALMOST TO THE BALLAST. THIS STRETCH'LL BE UNDER WATER BY MORNING.



WE'RE HAULING A LOT OF FREIGHT FROM THE FLOODED LINES.

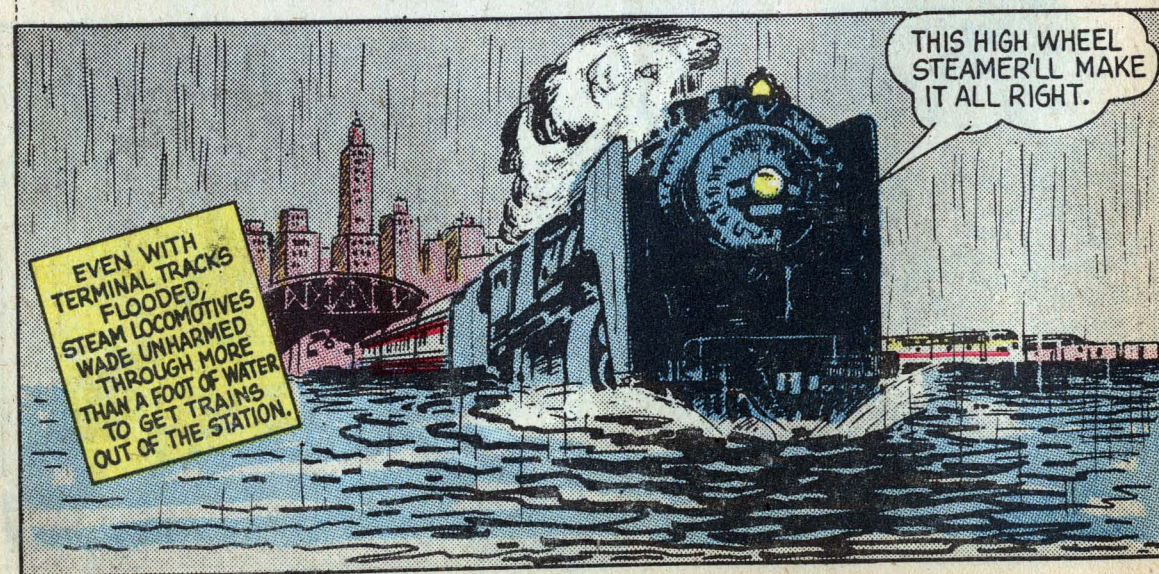
WE'LL GET ALL THEIR TRAINS UNTIL THEIR TRACKS ARE REPAIRED.

... IF THE WATERS RISE TO THE POINT WHERE IT IS NO LONGER POSSIBLE TO GET THROUGH, TRAINS ARE DETOURED OVER CONNECTING RAILROADS NOT IN THE PATH OF THE FLOOD. ARRANGEMENTS FOR SUCH DETOURS ARE ESTABLISHED AMONG THE RAILROADS BY GENERAL AGREEMENTS SET UP IN ADVANCE.

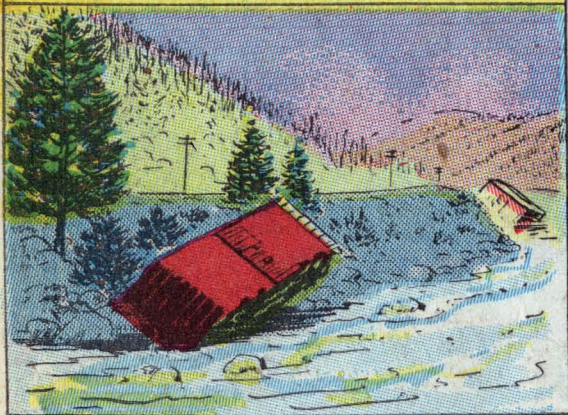


THIS HIGH WHEEL STEAMER'LL MAKE IT ALL RIGHT.

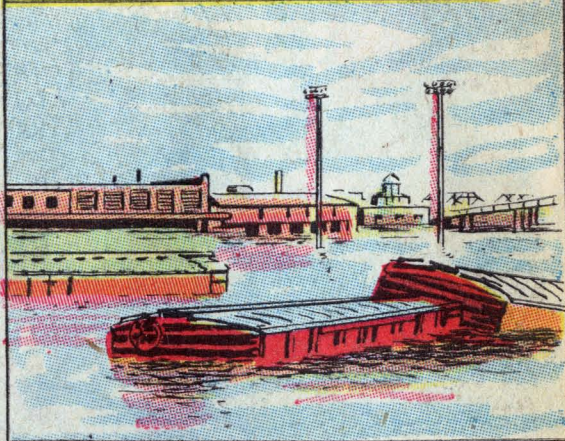
EVEN WITH TERMINAL TRACKS FLOODED, STEAM LOCOMOTIVES WADE UNHARMED THROUGH MORE THAN A FOOT OF WATER TO GET TRAINS OUT OF THE STATION.



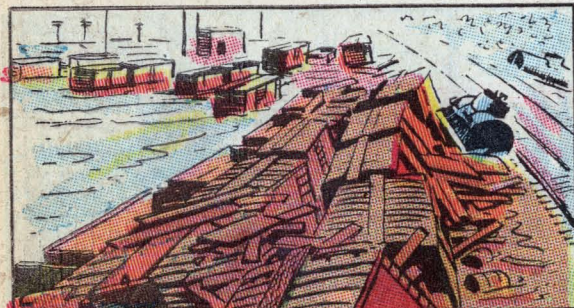
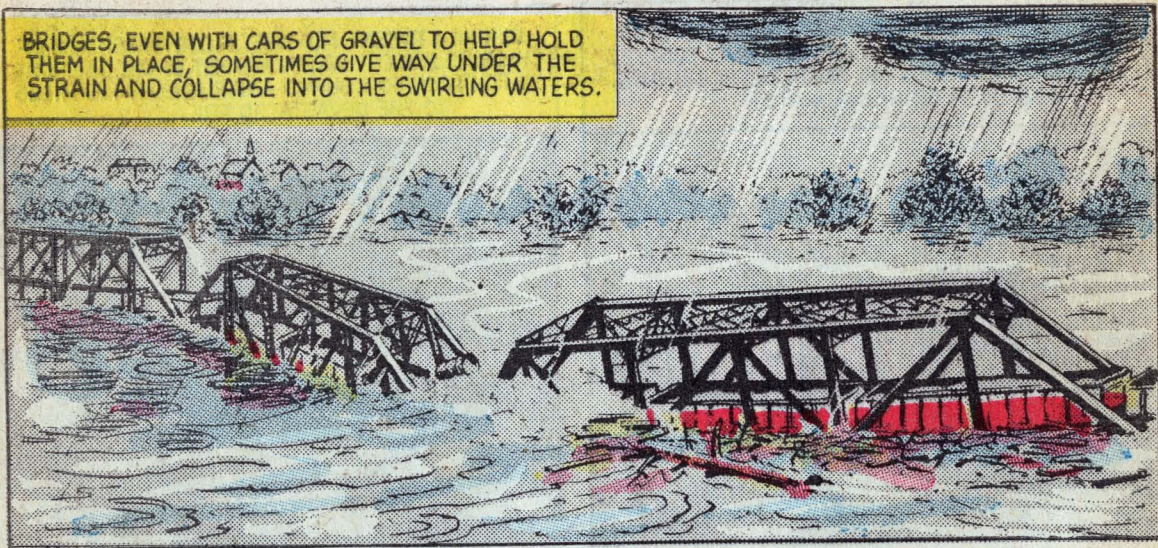
FLOODS FOLLOWING HURRICANES ARE ESPECIALLY DEVASTATING, CAUSING RAILROADS MILLIONS OF DOLLARS OF DAMAGE. IN SPITE OF ALL EFFORTS AND PRECAUTIONS, TRACKS ARE WASHED OUT, TUMBLING CARS INTO RIVERS...



...AND, WHEN FLOOD WATERS ARE AT THE CREST, COVERING FREIGHT YARDS, CARS THAT COULD NOT BE TAKEN OUT IN TIME ARE SUBMERGED.



BRIDGES, EVEN WITH CARS OF GRAVEL TO HELP HOLD THEM IN PLACE, SOMETIMES GIVE WAY UNDER THE STRAIN AND COLLAPSE INTO THE SWIRLING WATERS.



AS WATER RECEDES, THE BIG JOB OF RESTORATION BEGINS. COMMUNICATIONS MUST BE RESTORED, MACHINERY AND EQUIPMENT CAUGHT IN THE FLOOD MUST BE CLEANED AND REPAIRED FOR SERVICE...



... AND NEW TRACK LAID TO REPLACE WASHED OUT SECTIONS. THE WORK GOES ON 24 HOURS A DAY UNTIL THE RAILROAD IS RESTORED TO NORMAL OPERATION.



"ANOTHER MENACE TO RAILROAD OPERATION IS FIRE, NOT ONLY IN YARDS AND STATIONS, BUT ALSO OUT ON THE LINE. TO SAFEGUARD BOTH RAILROAD PROPERTY AND THE PROPERTY OF OTHERS AGAINST THIS DANGER, THE RAILROADS HAVE DEVELOPED TECHNIQUES AND EQUIPMENT TO MEET PARTICULAR NEEDS."

FIRE HAZARD IS GREATER
IN SNOWSHED TERRITORY...



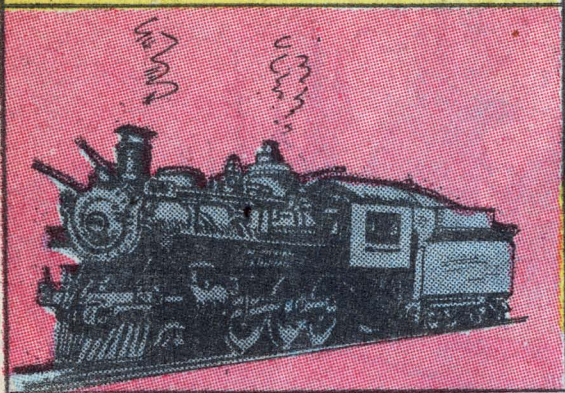
...AND IN WOODED AREAS
SUBJECT TO FOREST FIRES.
RAILROADS PROTECT THEIR
RIGHT-OF-WAY FROM FIRES
THAT MIGHT SPREAD TO
SURROUNDING WOODLANDS...

LOOK AT THAT
SMOKE, JIM.
ANOTHER BIG
FOREST FIRE
IS BURNING.

IT DOESN'T LOOK
GOOD, AND THERE'S
PLENTY OF WIND
BEHIND IT, TOO.



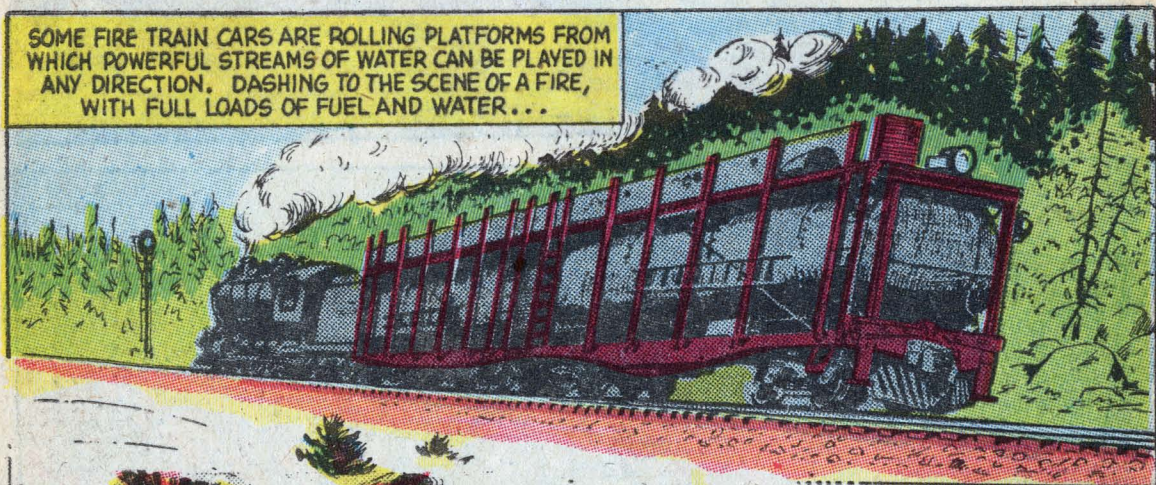
...AND MANY RAILROADS MAINTAIN ONE OR MORE FIRE TRAINS- ENGINES EQUIPPED WITH EXTRA MACHINERY AND PIPING...



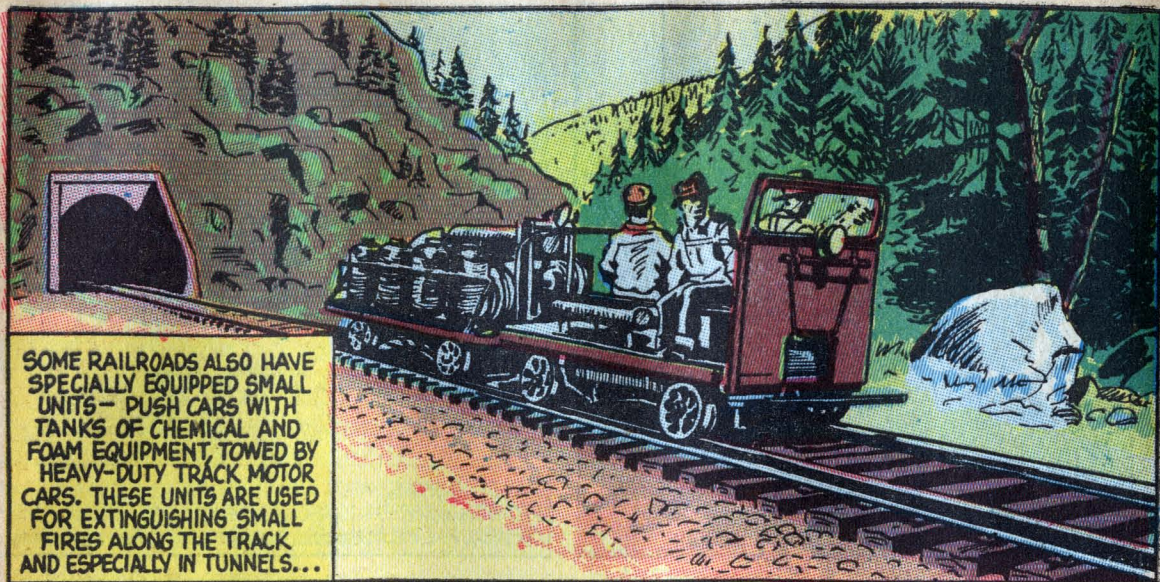
...AND VARIOUS KINDS OF FIRE FIGHTING CARS WITH HOSE, TOOLS, AND FOAM EQUIPMENT- READY TO FIGHT ANY FIRE THAT CAN BE HANDLED FROM RAILROAD TRACKS.



SOME FIRE TRAIN CARS ARE ROLLING PLATFORMS FROM WHICH POWERFUL STREAMS OF WATER CAN BE PLAYED IN ANY DIRECTION. DASHING TO THE SCENE OF A FIRE, WITH FULL LOADS OF FUEL AND WATER...

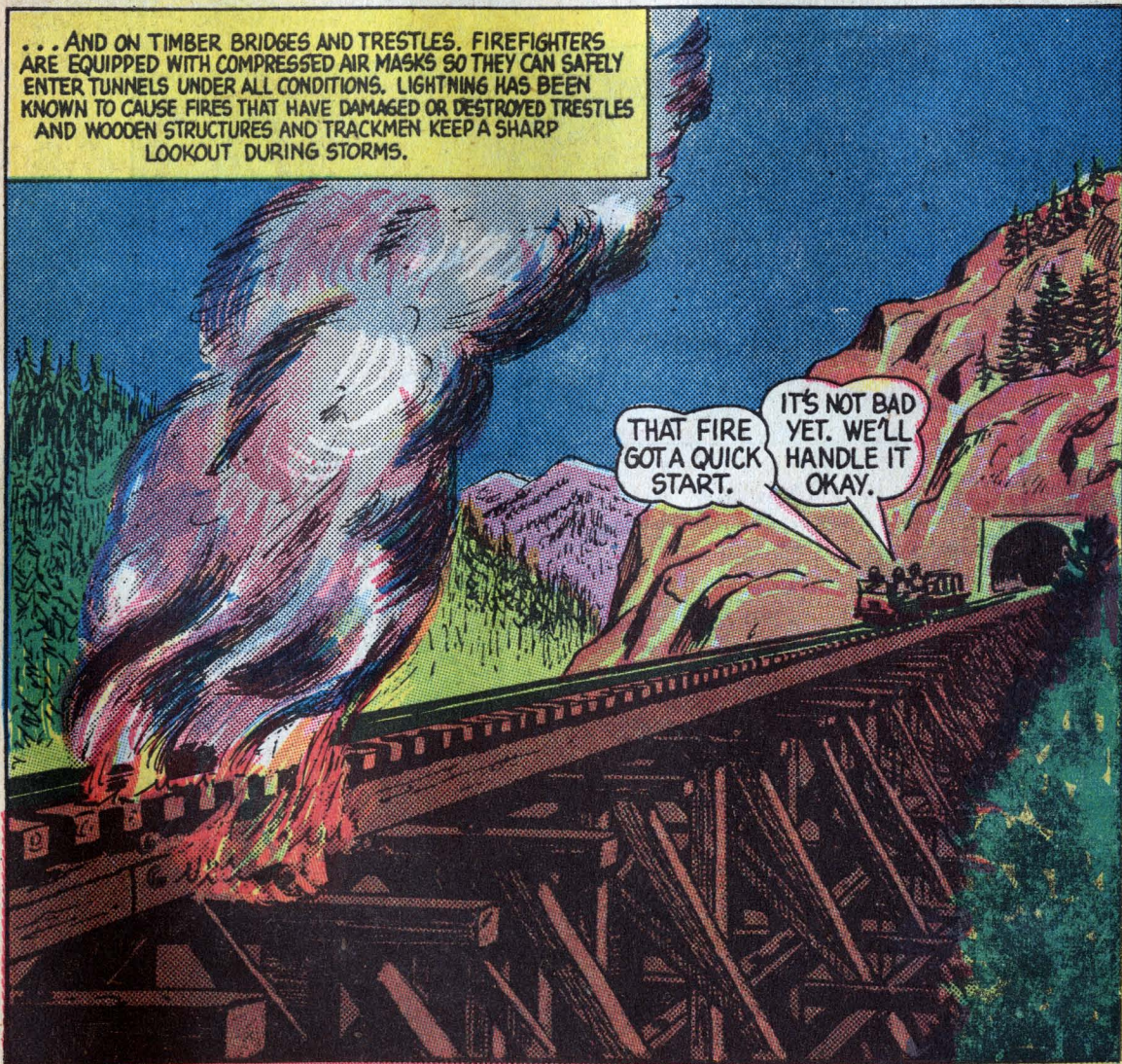


...THE RAILROAD FIREFIGHTERS BATTLE THE BLAZE, UNLIMBERING HOSES FROM LOCOMOTIVE AND CARS. WATER PRESSURE IS SUPPLIED BY PUMPS ON THE ENGINE. FIRE TRAINS ARE KEPT READY TO ROLL AT ALL TIMES AND THEIR CREWS ARE ON 24-HOUR CALL.



SOME RAILROADS ALSO HAVE SPECIALLY EQUIPPED SMALL UNITS— PUSH CARS WITH TANKS OF CHEMICAL AND FOAM EQUIPMENT, TOWED BY HEAVY-DUTY TRACK MOTOR CARS. THESE UNITS ARE USED FOR EXTINGUISHING SMALL FIRES ALONG THE TRACK AND ESPECIALLY IN TUNNELS...

... AND ON TIMBER BRIDGES AND TRESTLES. FIREFIGHTERS ARE EQUIPPED WITH COMPRESSED AIR MASKS SO THEY CAN SAFELY ENTER TUNNELS UNDER ALL CONDITIONS. LIGHTNING HAS BEEN KNOWN TO CAUSE FIRES THAT HAVE DAMAGED OR DESTROYED TRESTLES AND WOODEN STRUCTURES AND TRACKMEN KEEP A SHARP LOOKOUT DURING STORMS.



THAT FIRE GOT A QUICK START.

IT'S NOT BAD YET. WE'LL HANDLE IT OKAY.

MANY TIMBER OPEN-DECK TRESTLES ARE PROTECTED FROM FIRE BY THE APPLICATION OF SPECIAL FIRE-RETARDANT COATINGS WHICH LAST FOR SEVERAL YEARS.

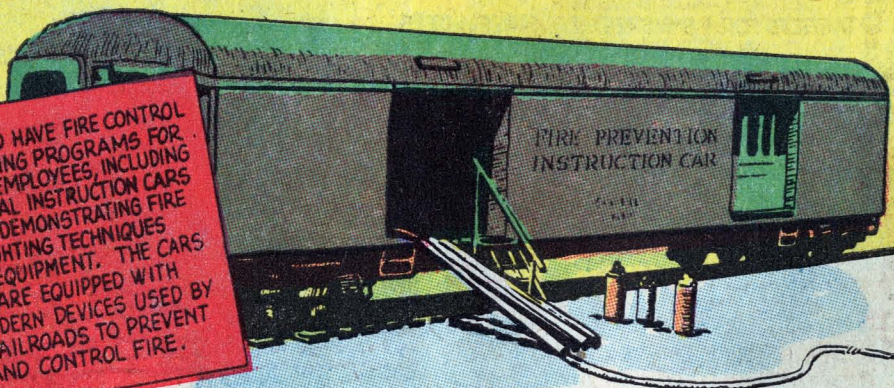


DRY CHEMICAL SPRAY ABSORBS HEAT AND CAN BE USED AS A SHIELD IN APPROACHING A FIRE.



RAILROAD SHOPS, YARDS, AND OTHER INSTALLATIONS ARE EQUIPPED WITH WHEEL-UNITS AND VARIOUS KINDS OF PORTABLE DRY-CHEMICAL FIRE EXTINGUISHERS. RAILROADS STRESS FIRE PREVENTION...

...AND HAVE FIRE CONTROL TRAINING PROGRAMS FOR THEIR EMPLOYEES, INCLUDING SPECIAL INSTRUCTION CARS FOR DEMONSTRATING FIRE FIGHTING TECHNIQUES AND EQUIPMENT. THE CARS ARE EQUIPPED WITH MODERN DEVICES USED BY RAILROADS TO PREVENT AND CONTROL FIRE.

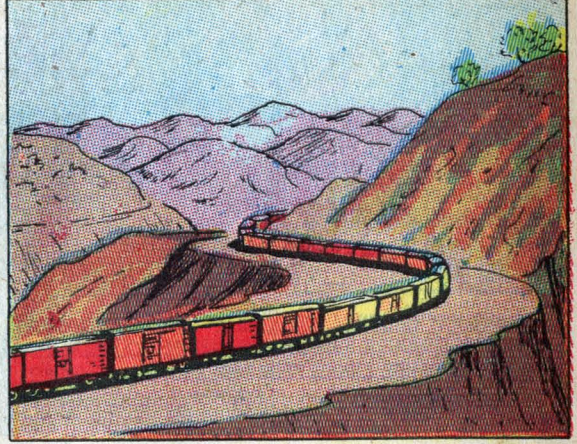


AS IN THE CASE OF FLOODS AND OTHER DISASTERS, RAILROADS HAVE RESCUED MANY PEOPLE FROM FIRE. ONE GRIM RACE WITH A RAGING FOREST FIRE OCCURRED IN MINNESOTA IN 1894 WHEN A VALIANT TRAIN CREW BROUGHT SOME 300 PERSONS TO SAFETY. BADLY BURNED THOUGH HE WAS, THE ENGINEER RAN HIS TRAIN BACKWARD THROUGH SIX MILES OF SCORCHING HEAT TO ESCAPE THE INFERNO—ONE OF THE BRAVEST FEATS IN THE ANNALS OF RAILROADING.

AVAILANCES AND LANDSLIDES SOMETIMES BLOCK TRACKS. THERE HAVE ALSO BEEN TUNNEL CAVE-INS FROM EARTHQUAKES WHEN TEMPORARY OR "SHOO-FLY" TRACKS HAD TO BE BUILT...



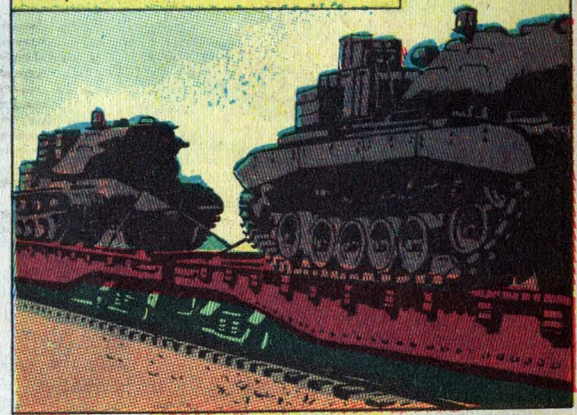
... SOMETIMES OVER HUGE FILLS OF EARTH AND STONE. RAILROADS ARE SELF RELIANT. THEY KNOW WHAT HAS TO BE DONE AND THEY GO OUT AND DO IT...



... EVEN IN WAR, WHEN TRACKS, STRUCTURES AND TRAINS ARE MAIN TARGETS FOR BOMBS AND SABOTAGE. IN WORLD WAR II ...



... AND IN THE KOREAN WAR, RAILROADS PLAYED A VITAL PART, FOR ONLY RAILROADS CAN SUPPLY THE TYPE OF TRANSPORTATION NEEDED TO SUPPORT MODERN ARMIES. RAILROADS TRANSPORTED TROOPS, MILITARY EQUIPMENT, FOOD, AND SUPPLIES OF ALL KINDS...

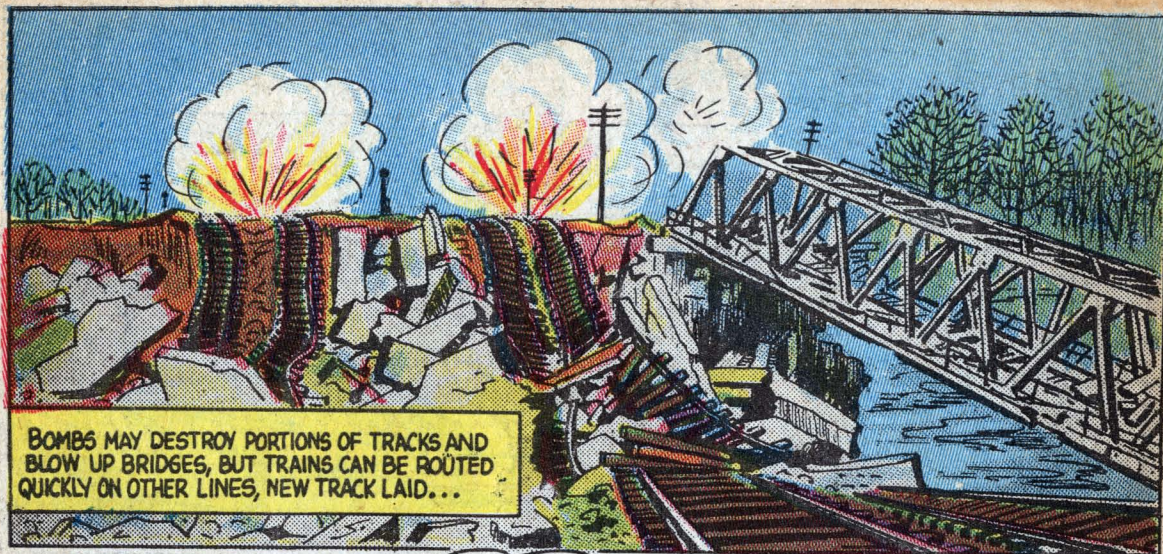


... AND THE ASTOUNDING RECORD OF BRITISH RAILWAYS IN WORLD WAR II, DESPITE MORE THAN 10,000 AIR ATTACKS UPON THEM, SHOWED THE ABILITY OF RAILROADS TO RESIST ATTEMPTS TO KNOCK THEM OUT.

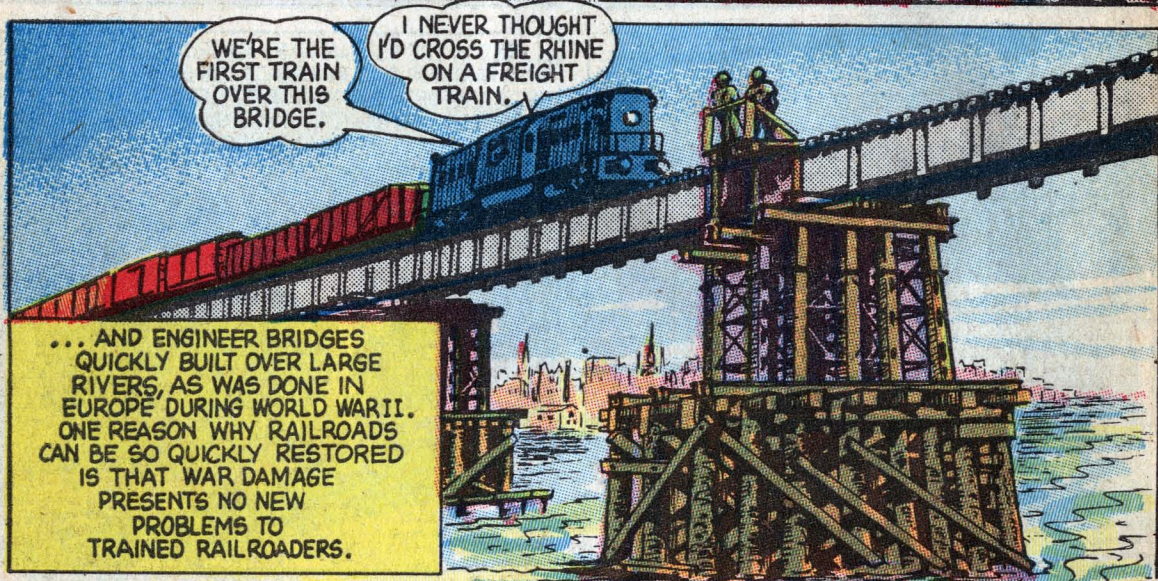


... AND HOSPITAL TRAINS, FULLY EQUIPPED AND STAFFED, OPERATED CLOSE TO THE FRONT LINES, EVACUATING SICK AND WOUNDED. IN THESE WARS, RAILROADS WITHSTOOD HEAVY BOMBING...





BOMBS MAY DESTROY PORTIONS OF TRACKS AND BLOW UP BRIDGES, BUT TRAINS CAN BE ROUTED QUICKLY ON OTHER LINES, NEW TRACK LAID...



WE'RE THE FIRST TRAIN OVER THIS BRIDGE.

I NEVER THOUGHT I'D CROSS THE RHINE ON A FREIGHT TRAIN.

... AND ENGINEER BRIDGES QUICKLY BUILT OVER LARGE RIVERS, AS WAS DONE IN EUROPE DURING WORLD WAR II. ONE REASON WHY RAILROADS CAN BE SO QUICKLY RESTORED IS THAT WAR DAMAGE PRESENTS NO NEW PROBLEMS TO TRAINED RAILROADERS.

WAR DAMAGE DOES NOT DIFFER GREATLY FROM THE RAVAGES OF FIRE, FLOOD, LANDSLIDES, AND OTHER NATURAL CAUSES WHICH RAILROADS ARE ORGANIZED TO DEAL WITH. IN ANY EMERGENCY—BLIZZARD, FIRE, FLOOD, OR WAR DAMAGE—THE FIRST EFFORT IS TO OPEN A ROUTE SO THE TRAINS MAY GO THROUGH.

OBEYING THIS LAW, RAILROADERS STAY AT THEIR POSTS, OFTEN BRAVING DANGERS AND ENDURING HARDSHIPS TO CLEAR THE TRACK AND KEEP THE TRAINS ROLLING.

