INTERSTATE COMMERCE COMMISSION

THIRTIETH ANNUAL REPORT

OF THE

DIRECTOR
BUREAU OF LOCOMOTIVE INSPECTION

TO THE

INTERSTATE COMMERCE COMMISSION

FISCAL YEAR ENDED
JUNE 30, 1941

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TABLE V.—*Reports and inspections—Locomotives other than steam*

	Year ended June 30—					
	1941	1940	1939	1938	1937	1936
Number of locomotive units for which reports were filed	3,389	2,987	2,716	2,555	2,416	2,361
Number inspected	5,558	4,974	4,581	4,024	3,615	3,118
Number found defective	319	298	260	274	328	252
Percentage inspected found defective	6	6	6	7	9	8
Number ordered out of service	21	16	14	9	24	11
Total number of defects found	905	766	696	769	991	674

TABLE VI.—*Accidents and casualties caused by failure of some part or appurtenance of locomotives other than steam*

	Year ended June 30—				
	1941	1940	1939	1938	1937
Number of accidents	11	7	5	4	12
Number of persons killed	11	7	5	4	14
Number of persons injured					

TABLE VII.—*Number of casualties classified according to occupation—Locomotives other than steam*

	Year ended June 30—									
	1941		1940		1939		1938		1937	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:										
Engineers		1		2		3		3		7
Firemen		5		2		1				
Brakemen		1				1				2
Conductors		1		1						2
Switchmen				1				1		
Maintenance employees		2		1						
Other employees										
Nonemployees		1								3
Total		11		7		5		4		14

were struck by the front or low-pressure engine which had become separated from the rear frame due to breakage of the articulated casting. The cylindrical part of the boiler was torn from the rear engine, the running gear of which stopped 72 feet from the point of explosion. This part of the boiler, with torn firebox sheets attached to the inside throat sheet, was hurled forward 196 feet, where it alighted on the track, then skidded and came to rest on the north side of the track, 235 feet from the point of explosion, with attached parts of the firebox sheets extending across the track. In another explosion, in which 4 employees were killed and 1 nonemployee was injured, the force of the explosion tore the boiler from the running gear and it alighted on the outer rail of an adjacent siding, then rolled to the left and came to rest in an upright position 107 feet ahead and 40 feet to the left of the point of explosion. Parts of the back end or firebox casing sheets were blown off, and the part of the crown sheet to the rear of the combustion chamber, with the entire right firebox side sheet, a major portion of the left side sheet, and 2 small portions of the door sheet were blown out and ahead 491 feet and came to rest on the main track, where these parts were struck by the running gear. Parts of the wreckage were blown for various distances up to 562 feet from the point of the explosion.

Two employees were killed and nine employees were injured in the remaining seven accidents in which the explosions were less violent than those described in the foregoing paragraph.

Boiler and appurtenance accidents other than explosions resulted in the death of 1 person and injuries to 35 persons; this is a reduction of 3 deaths and 60 injuries as compared with the preceding year.

BOILER-FEEDING AND WATER-LEVEL-INDICATING DEVICES

Our investigations of two of the explosions, some results of which are shown in plates 10 and 12, revealed serious neglect in not maintaining the boiler-feeding devices in condition to perform their intended function. Repeated reports of impairment of capacity of these devices had been made over considerable periods of time prior to the explosions. All of these reports were signed for purporting to show that work had been done on the parts reported but later reports showed that the defective conditions continued until the explosions occurred. Repeated reports on the same defective condition should be sufficient warning that proper repairs had not been made and demonstrate the necessity of making such inspections and tests after reports of defective conditions, and after repairs have been attempted, that will definitely show whether or not the purpose of the repairs has been accomplished.

Serious neglect is also evident in some instances in the matter of maintaining water-level-indicating devices in good condition, which

PLATE 4.

Plate 4 shows the result of an explosion caused by overheating of the crown sheet due to low water. Four employees were killed and one nonemployee was injured in this accident. The force of the explosion tore the boiler from the running gear and it was hurled forward and alighted in reversed position, striking the smokestack, feed water heater, and front sand dome on the outer rail of an adjacent siding, then rolled to the left and came to rest in an upright position 107 feet ahead and 40 feet to the left of the point of explosion. Parts of the wreckage were blown for various distances up to 562 feet from the point of the explosion.

PLATE 5.

Plate 5 shows the running gear and tender after the explosion of the boiler shown in plate 4. The front driving wheel is resting on part of the crown sheet which, together with parts of the firebox casing sheets and right and left firebox side sheets, was blown from the back end of the boiler and came to rest on the track 491 feet forward of the point of explosion. The main frame is broken forward of the front driving wheel. The locomotive was a 4-8-8-2 type, oil fired designed to operate with cab end first.

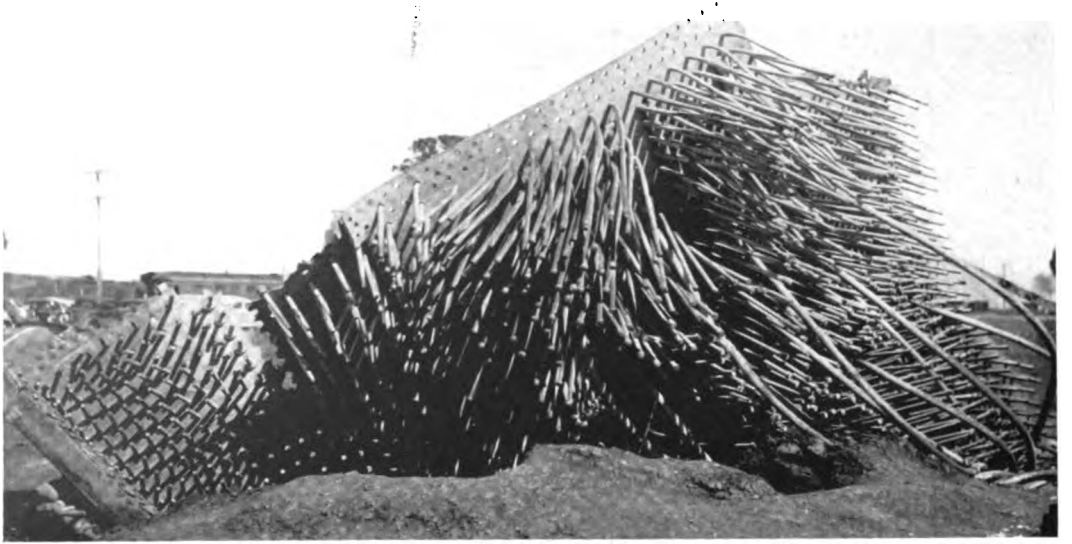

PLATE 6.

Plate 6 shows parts of the casing or outside sheets of the firebox after the explosion of the boiler shown in plate 4. These parts, estimated to weigh between 14,000 and 16,000 pounds, were blown 324 feet diagonally forward and 293 feet to the right of the track.