INTERSTATE COMMERCE COMMISSION

FIRST ANNUAL REPORT

OF THE

Chief Inspector of Locomotive Boilers

TO THE

INTERSTATE COMMERCE COMMISSION

OCTOBER 5, 1912





WASHINGTON GOVERNMENT PRINTING OFFICE 1912

600895



ANNUAL REPORT

OF THE

CHIEF INSPECTOR OF LOCOMOTIVE BOILERS.

Interstate Commerce Commission,
Division of Locomotive Boiler Inspection,
Washington, October 5, 1912.

To the Interstate Commerce Commission:

In compliance with section 7 of the act of February 17, 1911 (Public No. 383), commonly known as the locomotive boiler inspection law, the chief inspector of locomotive boilers has the honor to submit his annual report for the fiscal year ending June 30, 1912.

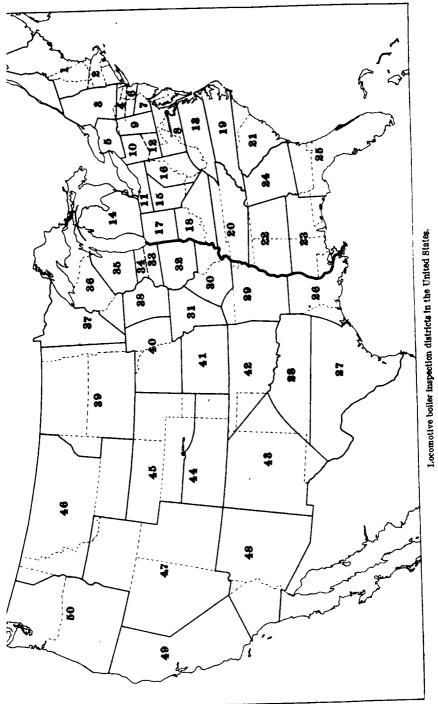
After the appointment by the President of the chief inspector and the two assistant chief inspectors of locomotive boilers, a conference was held in Washington, D. C., for the purpose of forming an organization to properly enforce the provisions of the locomotive boiler inspection law. Owing to the fact that the effective date of the law was July 1, 1911, it was essential to use the utmost diligence in effecting an organization which could properly supervise the inspection and testing of approximately 63,000 locomotives which were subject to the law.

Section 4 of the act provided that the territory comprising the several States, and Territories, and the District of Columbia be divided into 50 locomotive boiler inspection districts, so arranged that the service of the inspectors would be most effective, and so that the work required of each inspector would be substantially the same.

In making this division of territory it was necessary to consider, in addition to the number of locomotives in each district, the density of traffic, the number and location of inspection and repair points, the facilities for making repairs, the amount of travel necessary to properly cover the district, and the most advantageous location for the office of the inspector.

The map on page 4 indicates the present arrangement of the districts, which is practically identical with the original arrangement, no material revision having become necessary. A copy of this map, together with a tentative circular governing the qualifications and eligibility of applicants, was immediately furnished the Civil Service





Commission to enable it to make proper announcement of an examination to secure eligibles from which certification might be made to fill the positions of district inspector of locomotive boilers. During the interim a list of questions to be propounded to applicants with respect to construction, repair, operation, testing, and inspection of locomotive boilers was prepared, which list, after having been approved by the Interstate Commerce Commission, was also furnished the Civil Service Commission to be used as part of its examination.

In preparing this list of questions and determining the proper preliminary qualifications for applicants, the expressed purpose of Congress in passing the law, namely, "to promote safety," was constantly borne in mind. A careful examination of the accident records which were available disclosed the fact that a large percentage of personal injuries were attributable to failures of locomotive boiler appurtenances or fittings as well as the boiler proper. As a consequence all applicants who by reason of their experience were familiar with the construction, operation, testing, and inspection of locomotive boilers and their appurtenances were made eligible to take the examination, provided their experience in railroad service had been recent enough to insure their being familiar with modern equipment and As a result the inspectors who were appointed through conditions. the examination conducted under the auspices of the Civil Service Commission came from the several branches of locomotive service. They are all skilled in various branches of mechanics necessary for the proper inspection, maintenance, and operation of locomotives, as well as being particularly qualified to investigate accidents resulting from failure from any cause of a locomotive boiler or its appurtenances.

Section 5 of the law required each carrier subject to its provisions to file its rules and instructions for the inspection of locomotive boilers with the chief inspector within three months after the approval of the act. It further provided that in the event any carrier failed to do so, it then became the duty of the chief inspector to prepare such rules and instructions, which, after approval by the Interstate ('ommerce Commission, would become obligatory upon such carriers. In order that the carriers might be fully cognizant of the requirements respecting the submission of these rules, a letter directing attention to section 5 of the law was addressed to all the carriers subject thereto. Notwithstanding this notice only 170 out of an approximate 2,200 carriers complied therewith. A careful comparison of these rules disclosed the fact that they were practically all either copies of rules which had been promulgated by the Master Mechanics' Association or were substantially the same. The desire of the carriers for a uniform set of rules governing the inspection and testing of locomotive boilers and their appurtenances therefore became apparent. With this end in view a standard code of rules governing the inspection and

testing of locomotive boilers and their appurtenances was prepared. They were then discussed at a series of conferences with a committee representing practically all of the railroads affected by the law and a committee representing the interested employees. As a result certain tentative rules and instructions were decided upon. After the submission of these rules and instructions to the Interstate Commerce Commission for its approval, there came on a hearing, after due notice, on the 29th day of May, 1911. All the parties appearing at such hearing were fully heard in respect to the matter involved, and the proposed rules and instructions having been fully considered by the commission, it was ordered that they become effective on July 1, 1911, and shall be observed by each and every carrier subject to the provisions of the locomotive boiler inspection law as minimum requirements.

Among the more important requirements of the rules are the following: The filing of specification cards for all locomotive boilers subject to the act, which shall give their description and general design; and the inspection and testing of all boilers at regular and proper intervals.

The specification card is required to be filed in the office of the chief inspector and embodies in connection with the general design of the boiler, the principal dimensions, material, and thickness of the boiler sheets, description and measurement of seams, the tensile strength of the various parts as shown by tests to which the material was originally subjected, the result of the calculations of the stresses to which the principal parts are subjected and from which the factor of safety and the proper working pressure can be computed.

From the data thus obtained it is possible at all times to determine the strength of any boiler in service and to fix the safe working pressure. The information thus collected forms a permanent record, and as new locomotives are constructed or the specifications for locomotives which are on file are altered in any manner, proper check and notation is made thereof.

The calculations given on these specifications are being carefully checked and those which contain errors are returned to the railroad company for correction before being filed. The importance of this checking is demonstrated by the fact that serious errors have been found in about 6,000 specification cards out of a total of 34,000 filed.

By the terms of the commission's order of June 2, 1911, the railroads were given until July 1, 1912, to file specification cards for locomotives for which accurate drawings were available and until July 1, 1913, to file specification cards for locomotives for which accurate drawings were not available.

Section 6 of the law provides "that each carrier subject to the act shall file with the inspector in charge under the oath of the

proper officer or employee a duplicate of the report of each inspection required by such rules and regulations, and shall also file with such inspector under the oath of the proper officer or employee a report showing the repair of the defects disclosed by the inspection." accordance with this provision the rules require inspections of various parts of the boiler to be made at certain prescribed intervals and reports properly certified to filed with the district inspector. In order to reduce to a minimum the number of reports required a combination report showing the defects disclosed by the inspection and the repairs made was adopted. These reports show the date the safety valves were set and the pressure; the date on which steam gauges have been tested; that the boiler has been washed and gauge cocks and water glass cocks properly cleaned and repaired; that injectors were tested and left in good condition, all steam leaks repaired; the condition of flues, firebox sheets, stay bolts, and crown stays; the number of stay bolts and crown stays renewed; and the date of the previous hydrostatic test. These reports together with the information which the inspectors obtain during their regular inspections enable them to keep in close touch with the general condition of equipment and have repairs made when necessary.

A copy of this report or a special quarterly card showing that inspections had been made in accordance with the rules and that the locomotive is in a safe and proper condition to operate must be displayed in the cab of the locomotive.

Before being put into service and at least once every 12 months thereafter, every boiler must be subjected to hydrostatic pressure 25 per cent above the working steam pressure, thoroughly inspected, and a special report of the defects found and repairs made must be filed with the district inspectors.

In addition to the above-mentioned requirements special tests and inspections of all boiler appurtenances are required, and it is made the duty of the railroad company to know that all locomotives are in a safe and proper condition to operate before they allow them to be used. This places the burden of the inspection and the responsibility for the condition of all locomotives on the carriers, which was the manifest intent of the law.

The tabulated statement of inspections contained in this report gives a complete list of locomotives inspected and defects found on each railroad, but is not a complete record of the work performed by the district inspectors during the year.

While many railroads had reasonably efficient rules governing the inspection of locomotive boilers and their appurtenances before the law was passed they were not uniformly complied with. In many cases the date of inspection was governed by traffic conditions rather than by the condition of the locomotive, resulting during

periods of heavy traffic in locomotives being kept in service long after they were due for inspection and in need of repairs. For this reason much of the time of the inspectors has been consumed in checking the work performed by the railroad company's inspectors and their records of repairs in accordance with section 6 of the law which provides that "the first duty of the district inspectors shall be to see that the carriers make inspections in accordance with rules established or approved by the Interstate Commerce Commission, and that carriers repair the defects which such inspections disclose before the boiler or boilers or appurtenances pertaining thereto are again put in service."

The reports of inspections which the law requires the carriers to file with the proper district inspector each month are also a source of valuable information relative to the general condition of locomotives.

When making regular inspections of equipment district inspectors are instructed to report all defects which exist. This practice has been objected to in numerous instances by representatives of the railroads on the ground that certain defects which had been reported did not constitute violations of the law. These objections were given consideration, but investigation usually disclosed the fact that they originated at points where defective conditions existed and were due to a desire on the part of local officials to avoid censure for permitting such conditions. While the work of the district inspectors might be materially reduced by not reporting defects until they became violations, as some railroads seem to desire, and then take action as provided in section 9 of the law, the present practice of reporting and insisting on the prompt repair of all defects before they become serious has been so productive of good results that it will be vigorously continued, as we believe the purpose of the law can be best served by endeavoring to prevent violations rather than by waiting until violations occur and then filing suits to enforce the penalty. However, this should not be construed as meaning that suits will not be filed if necessary to enforce the provisions of the law or the lawful orders of any district inspector.

The investigation of accidents as provided by section 8 of the law has occupied a great deal of the time of the district inspectors, and is one of the most important of their duties. Two hundred and fifty-five accidents have been investigated during the year and in each case the necessary action has been taken to avoid, if possible, a recurrence of similar accidents.

In the more serious accidents the investigation has been conducted, wherever possible, by the chief or one of the assistant chief inspectors. The data obtained from the specification cards and from the monthly and annual reports is always available for use in making

accident investigations, and when additional information can be obtained by so doing tests are made of the boiler material to ascertain whether it conforms to the required standard.

Inasmuch as it is of the utmost importance that all accident investigations be conducted promptly, the headquarters of one of the assistant chief inspectors were established at Denver, Colo., where he could keep in close touch with this work in the western territory and have all investigations conducted without unnecessary delay to equipment. This has also resulted in materially reducing the traveling expenses necessary to the proper supervision of the work in that territory.

Locating the offices of the district inspectors in Federal buildings wherever proper space could be obtained has also resulted in a substantial reduction in expenses, 35 of the district offices now being so located. One inspector is located in the office of the chief inspector at Washington, and two in the office of the assistant chief inspector at Denver. It has therefore been necessary to rent office space at only eight points, as in several instances it has been practicable to have two district inspectors occupy the same office.

The summary of the tabulated statements contained herein discloses the following:

Number of locomotives inspected	74, 23 4
Number defective	48,768
Number ordered out of service for repairs	3, 377

In addition to this the following locomotives were required to be strengthened or changed to comply with the requirements of the law or permanently removed from service:

Number having pressure reduced to insure a proper factor of safety	699
Number having seams reenforced by welt plates to insure a proper factor of	
safety	327
Number permanently removed from service on account of defective condition.	698
Number having the lowest reading of water glass ordered raised to comply with	
the law	992
Number having lowest gauge cock ordered raised to comply with the law	408
Number ordered strengthened by having braces of greater sectional area	
ap plied	351
Number requiring additional support for crown sheet	116

It will thus be seen that a total of 6,968 locomotives were either held out of service for repairs or changed and strengthened to conform to the requirements of the law or permanently removed from service.

This work has been accomplished without the necessity of resorting to the courts in a single instance to enforce the requirements of the law or the lawful orders of the district inspectors. Of the 3,377 locomotives which have been ordered out of service only 5 cases have

been appealed to the chief inspector, in 3 of which the orders of the district inspectors were sustained and 2 reversed.

In this connection it is but fair to state that in our efforts to carry out the provisions of the law we have had the cooperation of the railroad officials on practically all roads. Wherever we have met with opposition it has usually been found to be due to the lack of a proper organization or necessary appropriation to properly perform the work as required. A marked improvement in this condition of affairs is, however, already manifest and the necessary action is being taken to bring about a proper observance of the law in all cases.

Section 8 of the law provides that all accidents resulting from failure from any cause of a locomotive boiler or its appurtenances resulting in serious injury or death shall be reported to the chief inspector and investigated. Under this provision accidents which occur while locomotives are being inspected, repaired, and tested in shops and roundhouses which were formerly classed as industrial accidents must be investigated and are included in this report. Inasmuch as a large percentage of accidents which occur are of this character, no fair basis exists from which a comparison with previous accident records can be made.

During the earlier part of the year the requirements of the law relative to reporting accidents to locomotive boilers and their appurtenances were apparently not fully understood by all carriers, in consequence of which many such accidents were not reported to the chief inspector of locomotive boilers in accordance with section 8 of the law. For this reason and also because a full corps of inspectors had not at that time been appointed, quite a few accidents were not investigated. Therefore the cause assigned by the railroad company in its report to the accident division has been used in our compilation. Every accident is being investigated at the present time and active steps are being taken to correct all faulty conditions discovered.

Much of the progress that has been made during the year can be attributed to the fact that the law was so wisely planned and skillfully drawn that very little difficulty has been experienced in applying it to every case that has arisen. No amendment or revision of the law is, therefore, recommended at this time.

Respectfully submitted,

JOHN F. ENSIGN, Chief Inspector Locomotive Boilers.

ACCIDENTS RESULTING FROM THE FAILURE OF LOCOMOTIVE BOILERS AND THEIR APPURTENANCES DURING THE FISCAL YEAR ENDING JUNE 30, 1912.

A star (*) indicates accidents taken from records of the accident division of the Interstate Commerce Commission. Investigation thereof was impracticable inasmuch as this division was not apprised thereof until 30 to 90 days subsequent to their occurrence, which was too late to permit an intelligent investi-

Alabama & Vicksburg Railway:

*February 6, 1912, water glass burst; 1 injured. ARIZONA & NEW MEXICO RAILWAY:

*September 9, 1911, engine No. 26, injector delivery pipe blew off; 1 injured.

ATCHISON, TOPEKA & SANTA FE RAILWAY:
July 5, 1911, engine No. 1009, squirt-hose valve worked open; valve defective; 1 injured.

*July 11, 1911, squirt hose blew off; 1 injured.

*July 11, 1911, squirt hose blew off; 1 injured.

July 20, 1911, engine No. 2152, handle on blow-off cock broke off (injured in attempting to close cock); 1 injured.

July 26, 1911, squirt hose blew off; 1 injured.

*July 26, 1911, squirt hose blew off; 1 injured.

*August 6, 1911, squirt hose blew off; 1 injured.

*August 8, 1911, engine No. 290, squirt hose came apart; 1 injured.

*August 28, 1911, engine No. 605, water glass burst; 1 injured.

*August 29, 1911, injector delivery pipe blew off; 1 injured.

September 23, 1911, engine No. 1404, washout plug blew out (attempting to tighten with boiler under pressure); 1 killed, 2 injured.

*October 5, 1911, water glass burst; 1 injured.

*November 8, 1911, water glass burst; 1 injured.

*November 11, 1911, engine No. 1176, water glass burst; 1 injured.

*November 27, 1911, water glass burst: 1 injured.

*November 27, 1911, water glass burst: 1 injured.

*November 27, 1911, water glass burst; 1 injured.

December 12, 1911, engine No. 1061, water glass burst; not properly shielded; 1 *January 3, 1912, engine No. 997, water glass burst; 1 injured.

*January 21, 1912, engine No. 2014, water glass burst; 1 injured.

*January 27, 1912, blower pipe broke; 1 injured.

*February 20, 1912, blow-off cock stuck open; 1 injured.

*Tehranary 22, 1912, engine No. 1819, water glass burst; 1 injured.

*February 22, 1912, engine No. 1819, water glass burst; 1 injured.
*March 7, 1912, squirt hose blew off; 1 injured.
March 10, 1912, engine No. 747, washout plug blew out (attempting to tighten plug

with boiler under pressure); 1 injured.

April 8, 1912, engine No. 1018, water-glass cock spindle blew out; spindle screwed out too far; 1 injured.

*May 6, 1912, engine No. 1103, squirt hose blew off; 1 injured.

May 8, 1912, engine No. 1126, flue pocket blew out front flue sheet; improperly

*May 22, 1912, engine No. 2206, lubricator glass burst; 1 injured.

*May 24, 1912, engine No. 2206, lubricator glass burst; 1 injured.

*May 25, 1912, engine No. 853, water glass burst; 1 injured.

*May 26, 1912, engine No. 528, water glass burst; 1 injured.

June 10, 1912, squirt hose burst; hose defective; 1 injured. June 26, 1912, engine No. 988, crown sheet failure due to low water; top water-glass cock found closed at time of inspection; 2 killed.

*June 27, 1912, squirt hose blew off; 1 injured.

June 29, 1912, engine No. 2129, water glass burst; shield removed at time to clean clean this injured.

glass; I injured.

Total accidents, 33; killed, 3; injured, 33. ATLANTA, BIRMINGHAM & ATLANTIC RAILWAY:

September 15, 1912, engine No. 1623; crown sheet failure due to low water; fusible plug found defective; 3 injured. 11

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ATLANTIC COAST LINE RAILROAD:
   *July 21, 1911, engine No. 154, gauge cock defective; 1 injured.

*July 26, 1911, engine No. 910, squirt hose burst; 1 injured.

*August 24, 1911, engine No. 910, defective injector; 1 injured.

*October 3, 1911, engine No. 159, squirt-hose valve open; 1 injured.

*December 10, 1911, engine No. 99, injector "broke"; 1 injured.
   *December 16, 1911, engine No. 918, stud blew out; 1 injured.

March 20, 1912, engine No. 252, blow-off cock blown out; not screwed into sheet far
enough; 1 injured.

April 6, 1912, engine No. 814, crown sheet failure due to low water; right injector
not working; tube found loose by inspector after test (reported by engineer day previous
to accident); 3 injured.
    *April 30, 1912, engine No. 364, arch tube blew out; 2 injured.
   *May 10, 1912, engine No. 819, crown sheet failure; 1 injured.

May 17, 1912, engine No. 1265, dome cap blew off; old defect in dome cap; 1 injured.

June 14, 1912, engine No. 806, squirt hose blew off; hose not properly secured; 1
    June 22, 1912, engine No. 924, arch tube pulled out of flue sheet; improperly applied;
1 injured.
    Total accidents, 13; killed, 0; injured, 16.
Baltmore & Ohio Railroad:

*July 6, 1911, engine No. 1794, squirt hose burst; 1 injured.

*July 7, 1911, engine No. 2329, lubricator glass burst; 1 injured.

*July 8, 1911, squirt hose burst; 1 injured.
    *July 8, 1911, lubricator glass burst; 1 injured.

*July 12, 1911, engine No. 1005, squirt-hose valve open; 1 injured.

*July 21, 1911, spindle blew out of gauge cock; 1 injured.

*July 22, 1911, squirt hose blew off; 1 injured.

*July 28, 1911, squirt hose blew off; 1 injured.

*July 28, 1911, squirt hose blew off; 1 injured.
    *August 1, 1911, engine No. 1663, loose exhaust pipe; 1 injured.
     *August 2, 1911, lubricator glass burst; 1 injured.
     *August 3, 1911, engine No. 1152, tank hose blew off; 1 injured.
    *August 4, 1911, squirt hose blew off; 1 injured.

*August 11, 1911, engine No. 563, injector "broke"; 1 injured.

*August 12, 1911, squirt hose blew off; 1 injured.

*August 16, 1911, engine No. 1783, injured in plugging blower pipe on account no
cap; 1 injured.
August 24, 1911, engine No. 1155, injector "broke"; 1 injured.
"August 24, 1911, engine No. 1155, injector "broke"; 1 injured.

*September 2, 1911, engine No. 2567, squirt hose blew off; 1 injured.

*September 5, 1911, pocket flue blew out; 1 injured.

*September 10, 1911, engine No. 2755, squirt hose blew off; 1 injured.

*September 18, 1911, engine No. 2817, squirt hose blew off; 1 injured.

*October 1, 1911, engine No. 2005, filling plug blew out of lubricator; 1 injured.

October 2, 1911, engine No. 136, crown sheet failure, due to low water; all appurtenances removed from engine prior to investigation and could not be examined; 1 injured.
injured.
*October 9, 1911, squirt hose burst; 1 injured.
*October 9, 1911, defective blow-off cock; 1 injured.
     *October 13, 1911, defective blow-off cock; 1 injured.
     *October 31, 1911, engine No. 703, broken stay bolt (scalded by escaping steam);

    injured.

     *November 4, 1911, engine No. 377, crown sheet failure; 2 injured.
*December 5, 1911, engine No. 2143, boiler check cap blew off; 2 injured.
*December 24, 1911, engine No. 2149, left injector steam pipe blew off; 1 injured.
     *January 6, 1912, engine No. 1537, defective nut on blower valve; 1 injured.
     *January 6, 1912, engine No. 14, squirt hose blew off; 1 injured.
     *January 17, 1912, squirt hose burst: 1 injured.
     *January 26, 1912, stud blew out; 1 injured.
     *February 5, 1912, engine No. 1939, blow-off cock blew out; 1 injured.
*February 5, 1912, engine No. 2034, water glass burst; 1 injured.
*February 14, 1912, engine No. 1931, flue burst; 1 injured.
*February 25, 1912, engine No. 1815, stud blew out; 1 injured.
     March 13, 1912, engine No. 1857, blow-off cock blew out; cock not screwed entirely
 through sheet; 1 killed.
     March 15, 1912, engine No. 1769, blow-off cock blew out; poor threads on cock, and
 cock not screwed entirely through sheet; 2 injured.
      *March 18, 1912, squirt hose blew off; 1 injured.
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Baltimore & Ohio Railroad—Continued.
  *March 20, 1912, squirt hose blew off; 1 injured.
*March 30, 1912, steam pipe blew off; 2 injured.
  *April 7, 1912, engine No. 1858, lubricator glass burst; 1 injured.

*April 10, 1912, lubricator glass burst; 1 injured.

*April 11, 1912, engine No. 4139, steam pipe burst; 1 injured.

May 12, 1912, engine No. 1827, blow-off cock knocked out; pipe not properly clamped;
   *May 30, 1912, lubricator glass burst; 1 injured.
  *June 3, 1912, arch tube blew out; 1 injured.
*June 4, 1912, engine No. 2514, flue burst; 1 injured.
June 19, 1912, engine No. 4024, flue burst; flue weakened by repeated working with
sectional expander; 1 injured.
   *June 25, 1912, engine No. 2411, squirt-hose valve open; 1 injured.
   *June 27, 1912, engine No. 2772, defective blower pipe; 1 injured.
   Total accidents, 52; killed, 1; injured, 55.
BELT RAILWAY OF CHICAGO:
   *September 14, 1911, engine No. 52, water glass burst; 1 injured.
BOSTON & ALBANY RAILROAD:
   *August 8, 1911, squirt hose burst; 1 injured.
*September 12, 1911, engine No. 2590, flue burst; 1 injured.
   April 28, 1912, engine No. 1251, flue burst at weld; defective weld; 1 injured. May 18, 1912, engine No. 1901, arch tube pulled out; not properly applied; 1 injured. June 2, 1912, engine No. 2603, squirt hose burst; defective hose; 1 injured. June 12, 1912, engine No. 2610, squirt hose blew off; not properly secured; 1 injured.
   June 21, 1912, engine No. 409, squirt hose blew off; not properly secured; 1 injured. June 23, 1912, engine No. 3536, squirt hose pulled out of fireman's hand; due to
defective condition of hose; 1 injured.
Total accidents, 8; killed, 0; injured, 8. BORTON & MAINE RAILROAD:
   *July 4, 1911, squirt hose blew off; 1 injured.
*July 8, 1911, squirt hose blew off; 1 injured.
   *July 11, 1911, squirt hose blew off; 1 injured.
   *August 5, 1911, squirt hose blew off; 1 injured.
   *August 23, 1911, squirt hose burst; 1 injured.
*October 3, 1911, water glass burst; 1 injured.
*November 18, 1911, flue burst; 1 injured.
November 30, 1911, engine No. 3209, crown sheet failure due to low water; no
contributing cause; 1 killed.
    *December 16, 1911, grate-bar stud blew out; 1 injured.
   *January 27, 1912, water glass burst; 1 injured.
   *March 18, 1912, lubricator glass burst; 1 injured.
*March 29, 1912, filling plug blew out of lubricator; 2 injured.
    *May 4, 1912, squirt hose burst; 1 injured.
    *June 19, 1912, squirt hose burst; 1 injured.
    *June 27, 1912, lubricator glass burst; 1 injured.
Total accidents, 15; killed, 1; injured, 15.
BUFFALO & SUSQUEHANNA RAILWAY:

*March 23, 1912, engine No. 139, water glass burst; 1 injured.

(ENTRAL OF NEW ENGLAND RAILWAY:
    *August 11, 1911, engine No. 45, injector steam pipe burst: 1 injured.
    *November 4, 1911, engine No. 105, squirt hose burst; 1 injured.
February 27, 1912, engine No. 56, scalded by hot water from injector overflow pipe; pipe out of place, due to defective connection; 1 injured.

April 2, 1912, engine No. 55, draft pipe fell over exhaust nozzle, creating back draft;
draft-pipe bracket broken: 1 injured.
    April 8, 1912, engine No. 47, scalded by hot water from injector overflow; overflow
pipe disconnected (no contributory defect found); 1 injured.
    Total accidents, 5; killed, 0; injured, 5.
CENTRAL OF GEORGIA RAILWAY:
September 7, 1911, engine No. 1330, crown sheet failure due to low water; no con-
tributory cause; 3 injured.
    *December 25, 1911, water glass burst; 1 injured.
    Total accidents, 2; killed, 0; injured, 4.
Central Railroad of New Jersey:

January 19, 1912, engine No. 214, water bar burst; overheated, due to temporary stopping of circulation through tube; 2 injured.
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CENTRAL RAILROAD OF NEW JERSEY—Continued.

*February 16, 1912, water glass burst; 1 injured.

*March 1, 1912, engine No. 659, water bar burst; 1 injured.

*April 2, 1912, water bar burst; 1 injured.

May 30, 1912, engine No. 463, crown sheet failure, due to low water (bad leaks in fire box); 1 injured.

Total accidents, 5; killed, 0; injured, 6.

CENTRAL OF VERMONT RAILWAY:

*July 5, 1911, engine No. 1433, squirt hose blew off; 1 injured.

March 20, 1912, engine No. 322, arch tube plug blew out of back flue sheet; plug not properly secured; 1 injured.
Total accidents, 2; killed, 0; injured, 2.

CHARLESTON & WESTERN CAROLINA RAILWAY:

*January 30, 1912, engine No. 284, water glass burst; 1 injured.

CHESAPEAKE & OHIO RAILWAY:

*January 9, 1912, engine No. 526, arch pipe blew out; 2 injured.

*February 6, 1912, engine No. 710; water glass burst; 1 injured.

May 19, 1912, engine No. 673, crown sheet failure, due to low water; one safety valve blew badly from 160 to 200 pounds; one raised 225 pounds when tested; right tank hose defective, interfering with operation of injector; 2 injured.
Total accidents, 3: killed, 0; injured, 5.

CHICAGO & ALTON RAILROAD

*August 17, 1911, squirt hose blew off; 1 injured.

February 23, 1912, engine No. 556, squirt hose blew off; not properly secured; 1 injured.

March 6, 1912, engine No. 418, crown sheet failure, due to low water; no contributing

cause found; 1 injured.

April 16, 1912, engine No. 104, boiler explosion; defect in shell plate and excessive pressure; 2 injured.

Total accidents, 4; killed, 0; injured, 5. CHICAGO & EASTERN ILLINOIS RAILROAD:

*August 3, 1911, water glass burst; 1 injured.

*August 31, 1911, water-glass valve blew out; 1 injured.

*January 9, 1912, lubricator glass burst; 1 injured.

February 19, 1912, engine No. 105, water-glass valve stem blew out; stem screwed out too far (no defect found); 1 injured.

March 20, 1912, engine No. 3612, water glass burst; valve opened before shield applied; 1 injured.
Total accidents, 5; killed, 0; injured, 5.
CHICAGO & ERIE RAILROAD:

*August 15, 1911, squirt hose blew off; 1 injured. Chicago & North Western Railway:

*August 6, 1911, engine No. 55, water glass burst; 1 injured. *August 8, 1911, engine No. 1403, water glass burst; 1 injured.

*August 12, 1911, engine No. 864, water glass burst; 1 injured.

*August 22, 1911, engine No. 141, water glass burst; 1 injured.

*August 30, 1911, engine No. 1715, water glass burst; 1 injured.

*August 31, 1911, engine No. 1925, water glass burst; 1 injured. *August 31, 1911, engine No. 1025, water glass burst; 1 injured.

*September 3, 1911, engine No. 856, lubricator glass burst; 1 injured.

*September 3, 1911, engine No. 856, lubricator glass burst; 1 injured.

*September 26, 1911, engine No. 1782, squirt hose burst; 1 injured.

*October 11, 1911, squirt hose blew off; 1 injured.

*November 9, 1911, engine No. 1107, water glass burst; 1 injured.

*November 12, 1911, engine No. 883, flue burst; 2 injured.

*November 22, 1911, engine No. 485, water glass burst; 1 injured.

November 29, 1911, engine No. 1465, crown sheet failure due to low water; no contributory cause found; 2 injured.

*December 19, 1911, engine No. 1130, water glass burst; 1 injured.

*December 26, 1911, engine No. 430, water glass burst; 1 injured.

*January 6, 1912, engine No. 959, lubricator glass burst; 1 injured.

*January 6, 1912, engine No. 959, lubricator glass burst; 1 injured.

*February 7, 1912, squirt hose blew off; 1 injured.

*February 25, 1912, engine No. 910, water glass burst; 1 injured.

*March 11, 1912, engine No. 714, water glass burst; 1 injured.

March 24, 1912, engine No. 182, water glass burst; shield inefficient; 1 injured.

March 25, 1912, engine No. 429, arch stud blew out; threads deteriorated due to continuous leaking; 1 injured.

March 26, 1912, engine No. 333; lubricator glass burst; shield inefficient; 1 injured.

CHICAGO & NORTH WESTERN RAILWAY-Continued.

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*April 4, 1912, engine No. 403, water glass burst; 1 injured.
   April 11, 1912, engine No. 1481, water glass burst (scalded in attempting to close
cock); 1 injured.

*April 24, 1912, engine No. 941, threaded plug blew out of flue sheet; 1 injured.
   *May 1, 1912, engine No. 910, blow-off cock open; I injured.
May 28, 1912, engine No. 288, water glass burst (scalded while closing cock); 1
injured.
   June 13, 1912, engine No. 106, water glass burst; cock opened while shield was
temporarily removed; 1 injured.
Total accidents, 28; killed, 0; injured, 30.
CHICAGO, BURLINGTON & QUINCY RAILROAD:

*July 1, 1911, engine No. 4109, squirt hose blew off; 1 injured.
   *July 3, 1911, gauge cock blew open; 1 injured.
   *July 4, 1911, squirt hose blew off; 1 injured.

*July 4, 1911, squirt hose blew off; 1 injured.

*July 7, 1911, engine No. 3009, squirt hose belw off; 1 injured.

*July 11, 1911, leaking valve (injured in repairing); 1 injured.
   *July 11, 1911, water glass burst; 1 injured.
*July 14, 1911, squirt hose blew off; 1 injured.
   *July 16, 1911, injured by steam escaping from injector throttle; 1 injured.
   *July 27, 1911, squirt hose blew off; I injured.

*August 9, 1911, squirt hose blew off; I injured.

*August 10, 1911, squirt hose blew off; I injured.
   *August 14, 1911, squirt hose blew off; 1 injured.
   *August 14, 1911, injector valve broken; 1 injured.
   *August 15, 1911, squirt hose blew off; 1 injured.

*August 20, 1911, squirt hose blew off; 1 injured.

*August 23, 1911, water glass burst; 1 injured.

*August 23, 1911, squirt hose blew off; 1 injured.

*August 24, 1911, squirt hose blew off; 1 injured.
   *September 1, 1911, squirt hose blew off; 1 injured.
   *September 9, 1911, squirt hose burst; 1 injured.
   *September 15, 1911, water glass burst; 1 injured.
*September 25, 1911, water glass burst; 1 injured.
*October 4, 1911, squirt hose blew off; 1 injured.
*October 13, 1911, engine No. 1491, gauge cock blew off; 1 injured.
   *October 14, 1911, squirt hose blew off; 1 injured.
*October 26, 1911, blow-off cock disconnected; 1 injured.
*November 6, 1911, water glass burst; 1 injured.
   *November 27, 1911, squirt hose blew off; 1 injured.

*December 2, 1911, cap on injector throttle leaking; 1 injured.

*December 7, 1911, heating pipe blew out; 1 injured.

*December 14, 1911, steam valve leaking; 1 injured.
   *January 6, 1912, squirt hose burst; 1 injured.

*January 10, 1912, water glass burst; 1 injured.

*February 14, 1912, water glass burst; 1 injured.

*February 29, 1912, water glass burst; 1 injured.
   *March 8, 1912, flue burst; 1 injured.
   *March 31, 1912, water glass burst; 1 injured.
   April 7, 1912, engine No. 2172, water glass burst; shield inefficient; 1 injured.
   April 20, 1912, engine No. 2818, squirt hose blew off; not properly screwed; 1
injured.
   May 3, 1912, engine No. 2511, squirt hose blew off; not properly secured; 1 injured.
   May 18, 1912, engine No. 1979, squirt hose blew off; not properly secured: 1 injured.
   May 21, 1912, engine No. 1602, fire hose blew off; not properly secured to branch
pipe; 1 injured.
May 23, 1912, engine No. 1438, fire hose blew off; not properly secured to branch
pipe; 1 injured.

May 26, 1912, engine No. 1415, squirt hose valve blew off pipe; threads on valve defective; 1 injured.
   June 2, 1912, engine No. 1209, squirt hose valve worked open; valve defective; 1
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June 5, 1912, engine No. 1230, squirt hose blew off; not properly secured: 1 injured. June 13, 1912, engine No. 1204, flue burst; improperly welded; 1 injured.

Total accidents, 48; killed, 0; injured, 48.

CHICAGO GREAT WESTERN RAILROAD:

*July 7, 1911, engine No. 217, squirt hose burst: 1 injured.

*November 8, 1911, lubricator glass burst: 1 injured.
*November 16, 1911, engine No. 207, lubricator glass burst; 1 injured.

*January 11, 1912, delivery pipe defective; 1 injured.
*February 3, 1912, engine No. 355, water glass burst; 1 injured.

February 29, 1912, engine No. 291, lubricator glass burst; no shield on glass; 1

March 28, 1912, engine No. 509, water glass burst; shield inefficient; 1 injured.

*June 9, 1912, engine No. 342, crown sheet failure; 1 injured.

Total accidents, 9: killed, 0: injured 9.

CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY:
April 21, 1912, engine No. 217, crown sheet failure due to defective condition of bracing of crown sheet and defects at top row of stay bolts in right side sheet where rupture occurred; 1 killed, 1 injured.

CHICAGO, MILWAUKEE & GARY RAILROAD:

*January 27, 1912, engine No. 4, water glass burst; 1 injured.
CHICAGO, MILWAUKEE & ST. PAUL RAILWAY:

*July 18, 1911, squirt hose blew off: 1 injured.

August 18, 1911, engine No. 2068, crown sheet failure due to low water; no contributory cause found; 2 injured.

*September 11, 1911, water glass burst; 1 injured.
October 5, 1911, engine No. 3020, water glass burst; shield inefficient; 1 injured.

*October 16, 1911, water glass burst; 1 injured. October 21, 1911, engine No. 2132, crown sheet failure due to low water; no contributory cause found; 1 injured.

October 22, 1911, engine No. 5501, crown sheet failure due to low water; water glass

and gauge cock found defective; 4 injured.

*December 19, 1911, engine No. 2613, flue sheet defective; 1 injured.

January 25, 1912, engine No. 2505, water glass burst; shield inefficient; 1 injured. *February 22, 1912, water glass burst; 1 injured. March 3, 1912, engine No. 1748, washout plug blew out; threads in sheet defective;

2 injured.

March 10, 1912, engine No. 1237, water glass burst; shield inefficient; 1 injured.

*March 17, 1912, water glass burst; 1 injured.

March 23, 1912, engine No. 930, crown sheet failure due to low water; obstruction found in bottom water-glass connection; 1 injured.

March 26, 1912, engine No. 1702, water glass burst; shield inefficient; 1 injured. March 30, 1912, engine No. 868, squirt-hose valve worked open; valve defective; 1 injured.

*April 3, 1912, lubricator glass burst; 1 injured.

*April 5, 1912, engine No. 78, lubricator gasket blew out; 1 injured.
*April 12, 1912, engine No. 694, lubricator glass burst; 1 injured.

April 18, 1912, engine No. 303, arch tube pulled out of flue sheet; arch tube improperly beaded; 1 injured.

April 26, 1912, engine No. 1726, water glass burst; shield inefficient; 1 injured.

April 27, 1912, engine No. 1758, water glass burst, shield inefficient; 1 injured. April 28, 1912, engine No. 390, plug blew out of crown sheet; plug not properly secured; 2 injured.

May 9, 1912, engine No. 919, nipple broke off lubricator while engineer engaged in setting feed; broken part not inspected; 1 injured.

May 24, 1912, engine No. 4208, water glass burst; shield inefficient; 1 injured.
June 13, 1912, engine No. 3018, flue burst; defective weld; 2 injured.
June 15, 1912, engine No. 1703, water glass burst; shield inefficient; 1 injured.
June 18, 1912, engine No. 1731, arch tube pulled out of sheet; not enough stock left to bead over; 1 injured.

Total accidents, 28; killed, 0; injured, 35. CHICAGO, PEORIA & St. LOUIS RAILWAY:

*July 28, 1911, engine No. 66, washout plug blew out; 2 injured.

*August 9, 1911, squirt hose burst; 1 injured. Chicago, Rock Island & Pacific Railway:

*August 20, 1911, injured by hot water from overflow when injector "broke"; 1 injured.
*October 17, 1911, blow-off cock blew out; 1 injured.

*November 1, 1911, engine No. 941, injector steam pipe blew out of collar; 1 injured. *November 1, 1911, right injector steam pipe broke at throttle connection; 1 injured. CHICAGO, ROCK ISLAND & PACIFIC RAILWAY—Continued.

November 23, 1911, engine No. 1932, water glass burst; shield inefficient; 1 injured.

*December 13, 1911, engine No. 1737, water glass burst; 1 injured.

December 31, 1911, engine No. 563, crown sheet failure due to low water; no contributory cause found; 1 injured.

February 20, 1912, engine No. 1613, arch tube burst; due to improper application of

tube; 1 injured.

*March 17, 1912, flue plug blew out; 1 injured.

*April 24, 1912, steam pipe injector disconnected; 1 injured.

Total accidents, 10; killed, 0; injured, 10.

Chicago, St. Paul, Minneapolis & Omaha Railway:

*January 22, 1912, engine No. 354, flue burst; 1 injured.

February 26, 1912, engine No. 104, crown sheet failure due to low water; fusible plug defective; 2 injured.

*March 12, 1912, water glass burst; 1 injured.

Total accidents, 3; injured, 4.

CHICAGO, TERRE HAUTE & SOUTH EASTERN RAILWAY:

*July 8, 1911, injured by steam from overflow when injector "broke"; 1 injured.
*February 29, 1912, engine No. 679, injured by escaping steam and hot water from injector overflow; 1 injured.

*June 29, 1912, squirt hose burst; 1 injured.

"June 29, 1912, squirt nose burst; 1 injured.
Total accidents, 3; killed, 0; injured, 3.
Cincinnati & Westwood Raliroad:

"August 26, 1911, engine No. 2, stud blew out boiler head; 2 injured.
Cincinnati, Hamilton & Dayton Raliway:

"August 25, 1911, engine No. 1601, water glass burst; 1 injured.

"September 13, 1911, engine No. 337, water-glass valve blew out; 1 injured.

"November 29, 1911, engine No. 420, blow-off cock disconnected; 1 injured. *November 29, 1911, engine No. 420, blow-off cock disconnected; 1 injured.

*January 13, 1912, engine No. 376, water glass burst; 1 injured.

*January 14, 1912, water glass burst; 1 injured.

March 30, 1912, engine No. 376, crown sheet failure due to low water; no contributory cause found; 3 killed, 1 injured.

*April 14, 1912, engine No. 8629, gasket blew out of handhole plate; 1 injured.

May 24, 1912, engine No. 344, arch tube pulled out of flue sheet; not enough stock left to beed over 2 injured. left to bead over; 2 injured.

June 22, 1912, engine No. 2529 (B. & O.), arch-tube plug blew out of back head;

threads defective; 3 injured.
Total accidents, 9; killed, 3; injured, 12.

CINCINNATI NORTHERN RAILROAD:

January 6, 1912, engine No. 6373, ash-pan blower frozen up, scalded while thawing: l injured.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS RAILWAY:

*August 20, 1911, engine No. 7360, squirt-hose valve open; 1 injured.
*October 1, 1911, engine No. 6602, water glass burst; 1 injured.
*October 4, 1911, engine No. 6569, flue pulled through back flue sheet; 1 injured.

*November 6, 1911, engine No. 6334, water glass burst; 1 injured.

*November 14, 1911, engine No. 6789, water glass burst; 1 injured.

November 22, 1911, engine No. 6646, crown sheet failure due to low water; fire box leaking badly; 3 injured.

January 20, 1912, engine No. 7325, crown sheet failure due to low water; gauge cocks

and water glass found defective; 1 injured, 1 killed.

January 20, 1912, engine No. 6620, threads stripped on right injector steam pipe nut; defect not repaired when reported; 1 injured.

*February 14, 1912, engine No. 7417, filling plug blew out of lubricator; 1 injured.

*March 17, 1912, engine No. 6789, lubricator glass burst; 1 injured.

March 31, 1912, engine No. 6650, filling plug blew out of lubricator; threads defective;

l injured.

May 7, 1912, engine No. 6166 (P. & E.), steam pipe to left steam chest pulled apart, causing back draft and blowing fire in cab; not properly secured; 1 killed; 1 injured.
May 23, 1912, engine No. 7337, water glass burst; shield inefficient; 1 injured.
Total accidents, 13; killed, 2; injured, 15.
Colorado Midland Railway:

February 1, 1912, engine No. 42, water glass burst; shield inefficient; 1 injured. Colorado & Southern Railway:

*March 30, 1912, water glass burst; 1 injured. *May 9, 1912, water glass burst; 1 injured.

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INTERSTATE COMMERCE COMMISSION. CUMBERLAND & PENNSYLVANIA RAILROAD: *July 3, 1911, squirt hose burst; 1 injured. DELAWARE & HUDSON Co.: December 8, 1911, engine No. 754, crown sheet failure due to low water; no contributory cause found; 1 killed, 2 injured. March 7, 1912, engine No. 844, crown sheet failure due to low water; no contributory cause found; 1 injured. March 29, 1912, engine No. 800, crown sheet failure due to low water; no contributory cause found; 1 killed, 4 injured. Total accidents, 3; killed, 2; injured, 7.
DELAWARE, LACKAWANNA & WESTERN RAILROAD: August 1, 1911, engine No. 860, crown sheet failure due to low water; crown stays April 2, 1912, engine No. 1032, flue burst; flue defective on account of improper working; 1 killed.

Total accidents, 2; killed, 1; injured, 1.

DENVER & RIO GRANDE RAILROAD: *July 1, 1911, engine No. 1124, squirt hose blew off; 1 injured. *July 11, 1911, engine No. 679, squirt hose blew off; 1 injured. July 20, 1911, engine No. 1177, squirt hose blew off; 1 injured. July 20, 1911, engine No. 1177, squirt hose blew off; 1 injured.

*July 23, 1911, engine No. 1177, squirt hose blew off; 1 injured.

*August 11, 1911, engine No. 647, water-glass valve disconnected; 1 injured.

*August 14, 1911, squirt hose blew off; 1 injured.

*August 27, 1911, squirt hose blew off; 1 injured. *September 9, 1911, engine No. 806, squirt hose blew off; 1 injured. September 25, 1911, engine No. 532, crown sheet failure due to overheated crown sheet and defective crown stays; right injector found inoperative; 2 injured. *October 9, 1911, squirt hose blew off; 1 injured.

*November 6, 1911, engine No. 717, stay bolt blew out; 1 injured.

*December 1, 1911, water glass burst; 1 injured. *December 2, 1911, engine No. 1199, injector delivery pipe leaking; 1 injured. May 1, 1912, engine No. 522, dome cap blew off, due to old crack in cap; 1 injured. Total accidents, 15; killed, none; injured, 16.
EL Paso & Southwestern System:
*October 4, 1911, squirt hose blew off; 1 injured. ERIE RAILROAD: *July 2, 1911, engine No. 1417, injector "broke"; 1 injured. *July 14, 1911, engine No. 2024, squirt hose blew off; 1 injured. *July 14, 1911, lubricator glass burst; 1 injured.

*July 25, 1911, engine No. 1696, squirt hose blew off; 1 injured.

*July 30, 1911, squirt hose blew off; 1 injured.

*August 10, 1911, squirt-hose valve open; 1 injured.

*September 15, 1911, engine No. 893, lubricator glass burst; 1 injured. *October 6, 1911, engine No. 528, flue plug blew out; 1 injured.

*October 12, 1911, engine No. 883, stay bolt blew out; 1 injured.

*November 4, 1911, engine No. 1855, stud blew out of flue sheet; 1 injured.
*January 24, 1912, engine No. 2004, draft pipe fell down, forcing fire out door; 2 injured.

February 21, 1912, engine No. 1707, crown sheet failure due to low water; no con-

tributory cause found; I injured.

March 3, 1912, engine No. 1059, nut stripped on injector steam pipe; improper

March 14, 1912, engine No. 1603, nut surpped on injector steam pipe; improper repairs (by apprentice); 2 injured.

March 14, 1912, engine No. 1633, crown sheet failure due to low water; bottom waterglass cock found stopped up; 2 injured.

Total accidents, 14; killed, 0; injured, 17.

FORT WORTH & DENVER CITY RAILWAY:

December 28, 1911, engine No. 257, crown sheet failure due to low water; no contributory cause found; 2 injured.

March 22, 1912, engine No. 302, squirt hose blew off; not properly secured; 1 injured. Total accidents, 2; killed, 0; injured, 3.

GEORGIA RAILROAD:

*October 2, 1911, squirt hose blew off; 1 injured.

GRAND TRUNK SYSTEM:

*November 1, 1911, water glass burst; 1 injured. November 21, 1911, engine No. 1444, arch tube burst; tube too weak to withstand pressure; 1 injured.

GRAND TRUNK SYSTEM-Continued.

*December 8, 1911, water glass burst; 1 injured.

February 10, 1912, engine No. 296, coupling nut on steam-heat pipe blew off; improperly applied; 1 killed.

*June 4, 1912, squirt hose blew off; 1 injured.

June 14, 1912, engine No. 2245, blower pipe uncoupled in front end, causing back

draft, which blew fire in cab; pipe not properly secured; 1 injured.

Total accidents, 6; killed, 1; injured, 5.

GREAT NORTHERN RAILWAY:

*July 2, 1911, steam ram on injector defective (scalded while making repairs); 1 injured.

*July 4, 1911, engine No. 1408, squirt hose blew off; 1 injured.

*December 29, 1911, engine No. 1980, superheater pipe burst; 1 injured.

*February 29, 1912, squirt hose blew off; 1 injured.

May 17, 1912, engine No. 125, blower-throttle bonnet blew out; not properly secured

to valve; 1 injured.

May 22, 1912, engine No. 1306, squirt hose blew off; not properly secured; 1 injured.

Total accidents, 6; killed, 0; injured, 6.

GULF. COLORADO & SANTA FE RAILWAY:

*October 2, 1911, squirt hose blew off; 1 injured.

*October 2, 1911, squirt nose blew on; 1 injured.

*October 16, 1911, engine No. 685, crown sheet failure; 5 injured.

*January 26, 1912, boiler check broke; 1 injured.

*February 9, 1912, stay bolt broken; 1 injured.

*February 24, 1912, squirt hose blew off; 2 injured.

*May 30, 1912, engine No. 2378, injector "broke"; 1 injured.

*June 27, 1912, engine No. 616, squirt hose blew off; 1 injured.

Total excidents 7 killed 0: injured 12

Total accidents, 7; killed, 0; injured, 12. Hocking Valley Railway:

November 14, 1911, engine No. 154, crown sheet failure due to low water; water foaming (appurtenances removed prior to investigation by our inspector); 1 injured. Houston & Texas Central Railroad:

*July 13, 1911, engine No. 414, squirt hose blew off; 1 injured.

*August 16, 1911, engine No. 104, squirt hose burst; 1 injured.

December 15, 1911, engine No. 41, crown sheet failure; overheated due to low water; no contributory cause found (engine temporarily in use for stationary purposes, in charge of watchman); 14 injured.
*June 13, 1912, engine No. 354, lubricator glass burst; 1 injured.

Total accidents, 4; killed, 0; injured, 17. Houston East & West Texas Railway:

November 19, 1911, blower pipe stopped up; 1 injured.

December 5, 1911, engine No. 8, crown sheet failure due to low water; water foaming in boiler; 3 injured.

*January 25, 1912, engine No. 26, water glass burst; 1 injured.

Total accidents, 3; killed, 0; injured, 5.

ILLINOIS CENTRAL RAILROAD:

*July 2, 1911, squirt hose blew off; 1 injured.

*July 28, 1911, squirt hose blew off; 1 injured.

*August 12, 1911, squirt hose blew off; 1 injured.

*August 13, 1911, squirt hose blew off; 1 injured.

*August 13, 1911, squirt hose blew off; 1 injured. *August 15, 1911, squirt hose blew off; 1 injured. *August 22, 1911, squirt hose blew off; 1 injured. *August 25, 1911, squirt hose blew off; 1 injured. *September 6, 1911, water glass burst; 1 injured.
*September 30, 1911, water glass burst; 1 injured.
*October 2, 1911, injector "broke"; 1 injured.

*October 3, 1911, squirt hose burst; 1 injured. *October 8, 1911, water glass burst; 1 injured. *November 23, 1911. water glass burst; 1 injured.

*December 8, 1911, steam pipe to injector burst; 1 injured.

December 18, 1911, engine No. 746, washout plug blew out; attempting to tighten plug under pressure; 1 injured.

*January 1, 1912, drainpipe from lubricator came off; 1 injured.
*January 12, 1912, lubricator glass burst; 1 injured.

*January 20, 1912, lubricator glass burst; 1 injured.
*January 27, 1912, lubricator glass burst; 1 injured.
*March 5, 1912, water glass burst; 1 injured.
*March 9, 1912, lubricator glass burst; 1 injured.

ILLINOIS CENTRAL RAILROAD—Continued.

*April 30, 1912, flue burst; 1 injured.

*May 11, 1912, lubricator glass burst; 1 injured.

May 25, 1912, engine No. 859, flue pulled through flue sheet; defective bead on flue; 2 injured.

*June 20, 1912, engine No. 576, crown sheet failure due to low water; no contributory

cause found; 1 injured.

Total accidents, 25; killed, 0; injured, 26. INDIANA HARBOR BELT RAILROAD:

February 20, 1912, engine No. 5493, arch tube burst; due to accumulation of mud and scale in flue; 1 injured.

March 6, 1912, engine No. 5469, water glass burst; shield inefficient; 1 injured.

KANSAS CITY SOUTHERN RAILWAY:

*August 8, 1911, water glass burst; 1 injured.
*August 9, 1911, water glass burst; 1 injured. *August 14, 1911, water glass burst; 1 injured.
*September 16, 1911, water glass burst; 2 injured.

*September 10, 1911, water glass burst; 2 injured.

*September 17, 1911, engine No. 58, water glass burst; 1 injured.

*December 27, 1911, water glass burst; 1 injured.

January 26, 1912, engine No. 364, crown sheet failure due to low water; no contributory cause found; 2 injured.

*April 23, 1912, water glass burst (shield not applied); 1 injured.

Total accidents, 8; killed, 0; injured, 10.

Lake Charles & Northern Railroad:

*December 29, 1911, engine No. 60, squirt hose blew off: 1 injured.

*December 29, 1911, engine No. 60, squirt hose blew off; 1 injured.

LAKE ERIE & WESTERN RAILROAD:

*April 6, 1912, engine No. 8555, stay bolt blew out; 1 injured.

May 19, 1912, engine No. 4166, water glass burst; shield inefficient; 1 injured.

LAKE ERIE, ALLIANCE & WHEELING RAILROAD:

November 29, 1911, engine No. 5885, crown sheet failure due to low water; no contributory cause found; 2 injured.

LAKE SHORE & MICHIGAN SOUTHERN RAILWAY:

LAKE SHORE & MICHIGAN SOUTHERN RAILWAY:

*July 16, 1911, engine No. 4802, squirt hose blew off; 1 injured.

*August 8, 1911, water glass burst; 1 injured.

August 15, 1911, engine No. 5790, globe valve cap nut blew off; threads on cap nut worn and stripped; 1 injured.

August 22, 1911, engine No. 5156, water glass burst; shield inefficient; 1 injured. *September 23, 1911, engine No. 4835, flue burst in weld; 1 injured. October 30, 1911, engine No. 5906, water glass burst; shield inefficient; 1 injured. *November 2, 1911, engine No. 5039, water glass burst; 1 injured.

*November 11, 1911, engine No. 5930, water glass burst; 1 injured.

December 16, 1911, engine No. 5698, water glass burst; shield inefficient; 1 injured. *December 23, 1911, engine No. 4838, broken steam pipe on lubricator; 1 injured.

January 26, 1912, engine No. 5785, crown sheet failure due to low water; bottom water-glass cock stopped up; 1 killed; 1 injured.

February 2, 1912, engine No. 5994, crown sheet failure due to low water; no con-

tributory cause found; 1 killed.

February 12, 1912, engine No. 5042, scalded while calking mud ring under pressure; 1 injured.

February 17, 1912, engine No. 5832, stay bolt blew out of back head; due to improper repairs; 2 injured.

February 19, 1912, engine No. 4434, water glass blow-off pipe disconnected; pipe improperly applied; 1 injured.

March 4, 1912, engine No. 5759, water glass burst; shield inefficient; I killed (fell from cab window in escaping steam).

March 16, 1912, engine No. 5572, water glass burst; shield inefficient; 1 injured. March 16, 1912, engine No. 5962, flue burst; poor weld; 2 injured. March 26, 1912, engine No. 5927, water glass burst; shield inefficient; 1 injured. April 3, 1912, engine No. 4305, injector steam valve disconnected; scalded while obtains remained. making repairs; 1 injured.

April 13, 1912, engine No. 4364, water glass burst; shield inefficient; 1 injured. May 1, 1912, engine No. 4430, arch-tube plate blew off; attempting to tighten under pressure; 1 injured.

May 14, 1912, engine No. 5780, water glass burst; shield inefficient (fell from engine while avoiding steam); 1 injured.

*June 4, 1912, engine No. 5975, patch bolt blew out; 1 injured.

June 20, 1912, engine No. 5717, water glass burst; shield inefficient; 1 injured. Total accidents, 25; killed, 3; injured, 25.

LAS VEGAS & TONOPAH RAILROAD:

October 10, 1911, engine No. 4, crown sheet failure due to low water; no contributory cause found; 1 injured.

LEHIGH VALLEY RAILROAD:

*July 27, 1911, stud blew out; 1 injured.

*November 5, 1911, water glass burst; 1 injured.

January 4, 1912, joint in steam pipe loose; 1 injured.

*February 4, 1912, engine No. 1641, crown sheet failure; 2 killed, 3 injured.

*February 13, 1912, lubricator glass burst; 1 injured.

*February 18, 1912, engine No. 794, flue burst; 1 injured.

*February 18, 1912, engine No. 794, flue burst; 1 injured.

March 4, 1912, engine No. 726, whistle elbow blew out; improperly applied; 1 injured.

March 5, 1912, engine No. 726, lubricator glass burst; shield inefficient; 1 injured. *June 5, 1912, lubricator glass burst; 1 injured. *June 20, 1912, engine No. 3048, squirt hose blew off; 1 injured. Total accidents, 10; killed, 2; injured, 12.

LOUISIANA & NORTHWEST RAILROAD:

*August 9, 1911, injector broke; 1 injured. LOUISIANA RAILROAD & NAVIGATION Co.:

*February 16, 1912, engine No. 57, ash pan blower blew off; 1 injured. LOUISVILLE & NASHVILLE RAILROAD:

August 22, 1911, engine No. 1188, flue pocket blew out; not prossered; 1 injured. October 12, 1911, engine No. 1292, crown sheet failure due to low water; no contributory-cause found; 1 killed; 3 injured.

*February 26, 1912, lubricator defective; 1 injured.
Total accidents, 3; killed, 1; injured, 5.

MICHIGAN CENTRAL RAILROAD:

November 3, 1911, engine No. 8365, arch tube pulled out of flue sheet; improperly applied; 1 injured.

*December 5, 1911, engine No. 8732, blow-off cock blew out; 1 injured.

Total accidents, 2; killed, 0; injured, 2.

MINNEAPOLIS & ST. LOUIS RAILROAD:

*March 1, 1912, lubricator glass burst; 1 injured.

May 2, 1912, engine No. 310, arch tube pulled out of back flue sheet; improperly applied; 1 injured.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE RAILWAY:

November 14, 1911, engine No. 433, crown sheet failure due to low water; obstruction found in water glass valve; 1 injured.

*January 13, 1912, engine No. 730, blow-off cock opened; 1 injured.

*January 15, 1912, blow-off cock came open; 1 injured.

May 1, 1912, engine No. 2421, water glass burst; shield inefficient (fell from engine in avoiding steam); 1 injured.

Total accidents, 4; killed, 0; injured, 4.

MISSISSIPPI CENTRAL RAILROAD:

*January 25, 1912, engine No. 106, lubricator glass burst; shield inefficient; 1 injured. MISSOURI & NORTH ARKANSAS RAILROAD:

*August 7, 1911, engine No. 5, squirt hose blew off; 1 injured.

MISSOURI, KANSAS & TEXAS RAILWAY SYSTEM:

*July 30, 1911, engine No. 540, flue burst; 2 injured.

*October 16, 1911, engine No. 557, flue burst; 2 injured.

*December 8, 1911, engine No. 588, gasket blew out of lubricator; 1 injured.

*December 18, 1011, engine No. 588, gasket blew out of lubricator; 1 injured.

*December 16, 1911, steam pipe to injector burst; 1 injured.

*December 16, 1911, steam pipe to injector burst; 1 injured.

*December 26, 1911, engine No. 449, crown sheet failure; 1 injured.

*January 2, 1912, engine No. 613, flue burst; 1 injured.

*January 7, 1912, engine No. 601, blow-off cock came open; 1 injured.

*January 24, 1912, engine No. 100, expansion plate stud blew out; 1 injured.

*February 18, 1912, engine No. 237, steam valve blew out; 1 injured.

*March 5, 1912, engine No. 217, water glass burst; 1 injured.

June 11, 1912, engine No. 228, blow-off cock blew out; threads in boiler defective; 1 killed.

Total accidents, 11; killed, 1; injured, 12.

MISSOURI PACIFIC RAILWAY SYSTEM:

*July 16, 1911, water glass burst; 1 injured.
*July 17, 1911, blow-off cock blew out; 1 injured.

*August 8, 1911, water glass burst; 1 injured. *August 27, 1911, water glass burst; 1 injured.
*August 29, 1911, water glass burst; 1 injured.
*October 25, 1911, water glass burst; 1 injured.

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MISSOURI PACIFIC RAILWAY SYSTEM—Continued.
   *October 27, 1911, water glass burst; 1 injured.

*November 1, 1911, flue burst; 1 injured.

*November 3, 1911, flue burst; 1 injured.

*December 7, 1911, injector throttle blew out; 2 injured.

*January 3, 1912, lubricator glass burst; 1 injured.
   January 16, 1912, engine No. 456, rear-end collision; steam leaks obscuring view of
enginemen; 1 killed.

February 3, 1912, blow-off cock blew out; 1 injured.
   *February 19, 1912, blow-off cock blew out; 1 injured.

March 17, 1912, engine No. 540, washout plug blew out; threads on plug defective;
1 injured.
   May 20, 1912, engine No. 145, squirt hose blew off; not properly secured; 1 injured.
   June 3, 1912, engine No. 420, water glass burst; shield inefficient; 1 injured.
*June 19, 1912, squirt hose blew off; 1 injured.

*June 27, 1912, water glass burst; 1 injured.

Total accidents, 19: killed, 1; injured, 19.

MOBILE & OHIO RAILROAD:
*October 3, 1911, engine No. 303, squirt hose blew off; 1 injured. NASHVILLE, CHATTANOOGA & St. LOUIS RAILWAY:
    *May 27, 1912, engine No. 24, small tube burst; 1 injured.
New Orleans Great Northern Railroad:
March 7, 1912, engine No. 51, crown sheet failure due to low water; no contributary cause found; 1 killed.
NEW ORLEANS, MOBILE & CHICAGO RAILROAD:
     August 7, 1911, engine No. 70, lubricator glass burst; 1 injured.
   *May 8, 1912, injector failure; scalded by hot water from overflow; 1 injured.
*June 27, 1912, boiler check defective; 1 injured.
*June 28, 1912, boiler check defective; 1 injured.
Total accidents. 4; killed, 0; injured, 4.
NEW ORLEANS, TEXAS & MEXICO RAILROAD:
February 25, 1912, engine No. 185, crown sheet failure due to low water; oil in boiler, and water-glass shield having such fine mesh that reading of water glass was very
difficult; 2 killed.
May 16, 1912, engine No. 1002, crown sheet failure due to low water; obstruction found at top end of water glass; 1 killed; 1 injured.

Total accidents, 2; killed, 3; injured, 1.
NEW YORK CENTRAL & HUDSON RIVER RAILROAD:
   *July 2, 1911, squirt hose blew off; 1 injured.

*July 3, 1911, squirt hose blew off; 1 injured.

*July 3, 1911, squirt hose blew off; 1 injured.

*July 3, 1911, squirt hose blew off; 1 injured.

*July 4, 1911, engine No. 3964, squirt hose blew off; 1 injured.

*July 5, 1911, union under injector broke: 1 injured.
    *July 5, 1911, union under injector broke; 1 injured.
    *July 6, 1911, engine No. 116, squirt hose blew off; 1 injured.
    *July 7, 1911, squirt hose blew off; 1 injured.
*July 7, 1911, injector pipe burst; 1 injured.
*July 13, 1911, squirt hose blew off; 1 injured.
*July 22, 1911, injector "broke;" 1 injured.
*July 22, 1911, injector "broke;" 1 injured.
    *July 22, 1911, squirt hose came off; 1 injured.
    *August 9, 1911, squirt hose blew off; 1 injured.
August 11, 1911, engine No. 2815, crown sheet failure due to low water; no contributory cause found; 1 killed; 2 injured.

*August 20, 1911, engine No. 2833, flue burst; 1 injured.

*September 3, 1911, squirt hose blew off; 1 injured.
    *September 5, 1911, engine No. 3917, flue burst in weld; 1 injured.
    *September 16, 1911, squirt hose blew off; 1 injured.
*September 19, 1911, squirt hose blew off; 1 injured.
    *October 18, 1911, engine No. 2896, water glass burst; 1 injured.

*October 12, 1911, engine No. 132, injector throttle broke; 1 injured.

*October 18, 1911, engine No. 3832, plug in door sheet defective; 1 injured.

*November 20, 1911, engine No. 3418, steam pipe to left injector burst; 1 injured.
    *December 4, 1911, lubricator glass burst: 1 injured.
     December 10, 1911, engine No. 536, collar blew off injector steam pipe; brazing
 defective; 2 injured.
     *December 23, 1911, water glass burst; 1 injured.
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January 17, 1912, engine No. 2470, plug blew out of flue sheet; threads in flue sheet

defective; 1 injured.

NEW YORK CENTRAL & HUDSON RIVER RAILROAD—Continued.

*January 23, 1912, engine No. 3466, steam pipe on injector broken; 1 injured.

January 26, 1912, engine No. 3431, crown sheet failure due to low water; no contributory cause found; 2 killed.

*January 28, 1912, engine No. 3408, water glass burst; 2 injured.

*January 29, 1912, engine No. 3406, water glass burst; 2 injured.

*January 29, 1912, injector defective; 1 injured.

*February 4, 1912, engine No. 2891, flue burst; 1 injured.

*February 19, 1912, engine No. 1872, flue burst; 1 injured.

*February 16, 1912, engine No. 2902, flue burst; 1 injured.

*February 20, 1912, engine No. 2499, stud blew out of boiler: 1 in

*February 20, 1912, engine No. 2499, stud blew out of boiler; 1 injured.

*February 24, 1912, engine No. 379, boiler check blew out; 1 injured. March 1, 1912, engine No. 2475, tank hose blew off while thawing out frozen hose; 1 injured

March 10, 1912, engine No. 2918, washout plug blew out; attempting to tighten plug

under pressure; 2 injured.

March 17, 1912, engine No. 363, nut on injector steam pipe broken; use of improper tools in making repairs; 2 injured.

*March 18, 1912, water glass burst; 1 injured.

March 22, 1912, engine No. 2017, washout plug blew out; threads on plug defective;

March 25, 1912, engine No. 3111, flue burst; flue burned in welding; 1 injured. March 30, 1912, engine No. 3404, squirt pipe to injector blew off; collar on pipe

defective; 1 injured. March 30, 1912, engine No. 1607, steam pipe burst in smoke arch; steam pipe defective; 1 injured.

*April 1, 1912, injector "broke;" 1 injured.

April 11, 1912, engine No. 5955 (L. S. & M. S.), flue burst; flue burned in welding; 1 injured.

April 24, 1912, engine No. 1704, water glass burst; shield inefficient; 1 injured. *May 2, 1912, engine No. 1495, boiler check body broke; 1 injured. May 6, 1912, engine No. 2706, nipple blew out of injector delivery pipe; thread on nipple defective; 1 injured.

*May 6, 1912, engine No, 871, cab bracket stud blew out; improperly fitted; 1 injured. *May 8, 1912, engine No. 2471, union nut on injector steam pipe broke; improper *May 8, 1912, engine No. 927, collar on injector steam pipe broke; 1 injured.

*June 2, 1912, engine No. 514, squirt hose burst; 1 injured.

*June 10, 1912, scalded by steam from injector overflow pipe; 1 injured.

*June 18, 1912, engine No. 2954, squirt hose burst; 1 injured.

*June 19, 1912, engine No. 1876, water glass burst; shield defective; 1 injured. *June 23, 1912, engine No. 178, squirt hose blew off; improperly secured; 1 injured.

Total accidents, 58; killed, 4; injured, 61.

New York, Chicago & St. Louis Railroad:

*August 25, 1911, water glass burst; 1 injured.

*January 23, 1912, engine No. 443, steam pipe on injector broken; 1 injured. February 9, 1912, engine No. 26, injector "broke"; overflow pipe not connected to injector; 1 injured.

February 12, 1912, engine No. 281, blow-off cock blew out; threads in sheet and on cock defective; 1 injured.

February 24, 1912, engine No. 450, water glass burst; shield inefficient; 1 injured. March 10, 1912, engine No. 6, lubricator glass burst; shield inefficient; 1 injured. Total accidents, 6; killed, 0; injured, 6.

New York, New Haven & Hartford Railroad:

*July 19, 1911, engine No. 2410, squirt hose burst; 1 injured.

October 25, 1911, engine No. 1611, crown sheet failure due to low water; no contributory cause found; 1 injured.

*January 19, 1912, steam pipe on injector broken; 1 injured.

*February 10, 1912, oil pipe broken; 1 injured.

March 29, 1912, engine No. 418, crown sheet failure due to low water; reading of water glass and gauge cock less than 3 inches above highest point of crown sheet, and scale on crown sheet; 3 injured.

April 1, 1911, engine No. 2525, squirt hose burst; hose defective; 1 injured.

June 2, 1912, engine No. 319, bonnet blew off squirt valve; threads defective; 1 injured.

*June 18, 1912, engine No. 2303, squirt hose burst; 1 injured. June 26, 1912, engine No. 1214, flue burst; weld defective; 2 injured. Total accidents, 9; killed, 0; injured, 12.

NORFOLK & WESTERN RAILWAY:

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*July 2, 1911, engine No. 90, squirt hose blew off; 1 injured.
    *July 8, 1911, engine No. 482, squirt hose blew off; 1 injured.
July 22, 1911, engine No. 921, crown sheet failure due to low water; no contributing cause found; 1 killed, 4 injured.

*July 22, 1911, engine No. 1036, flue burst; 1 injured.

*July 26, 1911, engine No. 1086, squirt hose blew off; 1 injured.
    *August 11, 1911, squirt hose burst; 1 injured.
*September 8, 1911, engine No. 84, squirt hose burst; 1 injured.
November 11, 1911, engine No. 1131, crown sheet failure due to low water; no contributory cause found; 1 killed; 3 injured.

*January 14, 1912, engine No. 398, valve on smoke consumer defective; 1 injured.

*January 28, 1912, engine No. 420, flue burst; 1 injured.

*Enhanced 21, 1912, engine No. 788, water class cashet blow out; 1 injured.
*February 7, 1912, engine No. 788, water-glass gasket blew out; 1 injured.

*March 8, 1912, engine No. 411, flue burst; 1 injured.

March 20, 1912, engine No. 1136, crown sheet failure due to low water; no contributory cause found; 2 killed, 1 injured.

*May 20, 1912, engine No. 412, flue burst; 1 injured.
    *May 23, 1912, squirt hose burst; 1 injured.
    *May 29, 1912, engine No. 416, flue burst; 1 injured.
    *June 20, 1912, engine No. 493, packing nut blew out of top water-glass valve; 1
injured.
    June 20, 1912, engine No. 1306, squirt-hose valve worked open; valve defective;
2 injured.
    Total accidents, 18; killed, 4; injured, 24.
NORFOLK SOUTHERN RAILROAD
     August 25, 1911, engine No. 100, arch plug blew out; threads defective; 2 injured.
    May 24, 1912, engine No. 115, squirt hose blew off; not properly secured; 1 injured.
NORTHERN PACIFIC RAILWAY:
     *August 1, 1911, water glass burst; 1 injured.
    *October 29, 1911, engine No. 1631, water glass burst; 1 injured.
    *January 15, 1912, engine No. 1650, lubricator glass burst; 1 injured.
    *February 4, 1912, engine No. 1604, water glass burst; 1 injured.

*May 5, 1912, engine No. 61, lubricator glass burst; 1 injured.

*June 9, 1912, engine No. 1605, squirt hose burst; 1 injured.

*June 19, 1912, engine No. 3006, injector "broke"; 1 injured.

*June 20, 1912, engine No. 1044, squirt hose blew off; 1 injured.

*June 22, 1912, engine No. 1601, squirt hose blew off; 1 injured.

*Total eccidente 9: billed 0: injured 9.
    Total accidents, 9; killed, 0; injured, 9.
OREGON SHORT LINE RAILROAD:
*October 7, 1911, engine No. 2823, crown sheet failure; 1 injured.
May 29, 1912, engine No. 814, arch flue pulled out of flue sheet, due to improper washing; 2 injured.
OREGON-WASHINGTON RAILBOAD & NAVIGATION Co.:
    *August 14, 1911, engine No. 363, squirt hose burst; 1 injured.
*September 30, 1911, engine No. 258, arch flue burst; 1 injured.
*October 10, 1911, engine No. 512, right injector "broke" while putting compound
in boiler; 1 injured.
    *November 15, 1911, engine No. 257, arch tube blew out; 1 injured. December 13, 1911, engine No. 382, crown sheet failure due to low water; obstruc-
tion found in bottom water-glass cock; 1 killed, 3 injured.
Total accidents, 5; killed, 1; injured, 7.
PECOS & NORTHERN TEXAS RAILWAY:
 *May 6, 1912, engine No. 779, squirt hose blew off; 1 injured. Pennsylvania Railroad:
     *July 5, 1911, squirt hose blew off; 1 injured.
     *July 8, 1911, squirt hose blew off; 1 injured.
    *July 10, 1911, squirt hose burst; 1 injured.

*July 18, 1911, engine No. 395, squirt hose burst; 1 injured.

*August 1, 1911, engine No. 1121, squirt hose blew off; 1 injured.

*August 8, 1911, flue burst; 1 injured.
     *August 8, 1911, squirt hose blew off; 1 injured.
    *August 29, 1911, engine No. 742, cap nut blew out of injector pipe; 1 injured.

*September 11, 1911, engine No. 529, steam escaping from fire box; 1 injured.

*September 26, 1911, squirt hose blew off; 1 injured.

October 31, 1911, engine No. 2043, diaphragm plate dropped, causing back draft;
 due to bolts breaking where connected to angle iron at flue sheet; 1 injured.
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Pennsylvania Railroad—Continued.

*November 3, 1911, squirt hose blew off; 1 injured. November 21, 1911, engine No. 1126, packing nut blew off injector throttle; threads defective; 2 injured.

*December 5, 1911, engine No. 3352, flue burst; 2 injured.

*December 10, 1911, engine No. 972, boiler-check cap blew off; 1 injured.

*January 8, 1912, squirt hose blew off; 1 injured.

*January 11, 1912, engine No. 1466, packing nut blew out of injector; 1 injured.
*February 4, 1912, engine No. 2751, water-glass gasket blew out; 1 injured.
*February 5, 1912, arch tube blew out; 1 injured.
February 8, 1912, engine No. 6222 (W., N. Y. & P.), boiler check cap blew off;

threads on cap defective; 1 killed.
February 12, 1912, engine No. 1621, crown sheet failure due to low water; no con-

tributory cause found; 2 injured.

April 2, 1912, engine No. 6310 (W., N. Y. & P.), water-glass stem blew out; stem unscrewed too far; 1 injured.

April 5, 1912, engine No. 1676, squirt hose blew off; hose not properly secured;

1 injured.

*April 10, 1912, engine No. 3118, flue burst; 1 injured.

April 22, 1912, engine No. 1082, flue burst; weld defective; 1 injured.
*April 30, 1912, engine No. 276, packing nut blew off right injector; 1 injured.
May 12, 1912, engine No. 4049 (N. C. R.), packing nut stripped off left injector;

threads on injector defective; 1 injured.

May 17, 1912, engine No. 3137, squirt hose blew off; hose not properly secured;

1 injured.

May 22, 1912, engine No. 6053, collar broke on injector steam pipe; 1 injured. June 18, 1912, engine No. 178, squirt hose blew off; hose not properly secured; 1 injured.

June 25, 1912, engine No. 1997, bonnet came off blow-off cock; cock defective;

Total accidents, 31; killed, 1; injured, 33.

PENNSYLVANIA LINES WEST OF PITTSBURGH:

*July 2, 1911, engine No. 7739, squirt hose burst; 1 injured.

*July 15, 1911, squirt hose blew off; 1 injured.

*July 23, 1911, squirt hose blew off; 1 injured.

*July 29, 1911, engine No. 7542, squirt hose burst; 1 injured.

*August 9, 1911, engine No. 7749, squirt nose burst; 1 injured.

*August 9, 1911, engine No. 7749, squirt hose blew off; 1 injured.

*August 21, 1911, engine No. 9054, nipple blew out of injector pipe; 1 injured.

August 24, 1911, engine No. 8428, crown sheet failure due to low water; water in boiler foaming, and gauge cocks found stopped up; 3 injured.

*September 2, 1911, engine No. 7955, squirt hose blew off; 1 injured.

*Sortomber 13, 1911, engine No. 7430 causet hose blew off; 1 injured.

*September 13, 1911, engine No. 7439, squirt hose blew off; 1 injured. *September 16, 1911, squirt hose blew off; 1 injured.

*October 3, 1911, engine No. 9950, squirt hose blew off; 1 injured.
*October 16, 1911, engine No. 7526, squirt hose blew off; 1 injured.
*October 8, 1911, squirt hose blew off; 1 injured.

*October 31, 1911, engine No. 319 (P., C., C. & St. L.), flue burst; 1 injured.

November 1, 1911, engine No. 9032, crown sheet failure due to low water; no contributory cause found; 3 injured.

*November 4, 1911, engine No. 8411 (P., C., C. & St. L.), leak in steam pipe to pump; 1 injured.

December 19, 1911, engine No. 7744, crown sheet failure due to low water; no contributory cause found; 1 killed; 2 injured.

*January 16, 1912, blower disconnected; 1 injured.

March 19, 1912, engine No. 9088, collar broke on injector steam pipe; improperly brazed; 1 injured.

*March 14, 1912, engine No. 8330 (P., C., C. & St. L.), flue burst; 1 injured. April 6, 1912, engine No. 8555, stud blew out; threads in boiler defective; 1 injured. *May 6, 1912, engine No. 7440, squirt hose blew off; 1 injured.

May 7, 1912, engine No. 7723, squirt hose blew off; hose not properly secured; 1 injured.

*May 24, 1912, engine No. 1967, squirt hose blew off; 1 injured. Total accidents, 24; killed, 1; injured, 29.

PERE MARQUETTE RAILROAD:

*July 8, 1911, squirt hose blew off; 1 injured.
*September 2, 1911, squirt hose burst; 1 injured. *November 22, 1911, injector blew off; 1 injured.



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PERE MARQUETTE RAILROAD—Continued.

*December 6, 1911, flue burst; 1 injured.

*December 29, 1911, lubricator glass burst; 1 injured.

*February 15, 1912, squirt hose blew off; 1 injured.
*February 15, 1912, squirt nose blew on; 1 injured.

*March 19, 1912, steam pipe leaking; 1 injured.

Total accidents, 7; killed, 0; injured, 7.

Philadelphia & Reading Railwar:

*September 21, 1911, flue burst; 1 injured.

*November 10, 1911, engine No. 1921, water glass burst; 1 injured.

*November 24, 1911, engine No. 1002, lubricator glass burst; 1 injured.

*December 21, 1911, engine No. 1190, lubricator glass burst; 1 injured.

*December 27, 1911, engine No. 896, filling plug blew out of lubricator; 1 injured.

*Inpurer 12, 1912, engine No. 1193, lubricator glass burst: 1 injured.
*January 12, 1912, engine No. 1193, lubricator glass burst; 1 injured.

*January 26, 1912, engine No. 604, globe valve broke; 1 injured.

*February 3, 1912, engine No. 973, crown sheet failure; 1 injured.

March 1, 1912, engine No. 699, crown sheet failure due to low water; no contributory cause found; 4 killed; 1 injured.
      *April 5, 1912, engine No. 1031, lubricator valve broke; 1 injured.
May 1, 1912, engine No. 1931, horicator valve broke; I injured.

*May 1, 1912, engine No. 248, lubricator glass burst; shield inefficient; I injured.

*May 2, 1912, lubricator glass burst; I injured.

May 21, 1912, engine No. 1583, water glass burst; shield inefficient (injured in shutting off cock); I injured.

Total accidents, 13; killed, 4; injured, 13.

Pittsburger & Lake Erie Railroad:

*November 13, 1911, engine No. 9141, water glass burst; I injured.
      *November 13, 1911, engine No. 9141, water glass burst; 1 injured.
      *November 26, 1911, engine No. 9373, water glass burst; 2 injured.
      July 12, 1911, engine No. 9312, water glass burst; shield inefficient; 1 injured.
 Total accidents, 3; killed, 0; injured, 4. Robbins Railroad Company:
       *February 27, 1912, flue burst; 1 injured.
  ROCK ISLAND SOUTHERN RAILWAY SYSTEM:
 *September 17, 1911, engine No. 210, lubricator glass burst; 1 injured. ROOSEVELT & WESTERN RAILROAD:
 *August 16, 1911, stud blew out; 1 injured.

St. John's River Terminal Company:

*July 26, 1911, engine No. 2, hose blew off blow-off cock during boiler test; 1 injured.

St. Louis & San Francisco Railroad:
       *July 7, 1911, engine No. 572, lubricator glass burst; 1 injured.
*September 28, 1911, engine No. 3669, squirt hose blew off; 1 injured.
 *October 5, 1911, engine No. 220, squirt hose blew on; I injured.

*October 5, 1911, engine No. 220, squirt hose burst; 1 injured.

November 9, 1911, engine No. 1111 (N. O. T. & M.), crown sheet failure due to low water; top water-glass cocks closed; 2 killed, 3 injured.

*January 18, 1912, engine No. 1276, flue burst; 2 injured.

*February 16, 1912, water glass burst; 1 injured.

*February 17, 1912, squirt hose blew off; 2 injured.

Total accidents 7, killed 2: injured 11
 Total accidents, 7; killed, 2; injured, 11.

St. Louis, Brownsville & Mexico Railway:

*August 8, 1911, squirt hose blew off; 1 injured.

St. Louis, Iron Mountain & Southern Railway:
        *July 19, 1911, squirt hose blew off; 1 injured.
       *July 20, 1911, squirt hose blew off; 1 injured.
        *July 31, 1911, squirt hose blew off; 1 injured.
       *August 1, 1911, water glass burst; 1 injured.

*August 17, 1911, water glass burst; 1 injured.

*August 24, 1911, squirt hose blew off; 1 injured.

*August 28, 1911, lubricator glass burst; 1 injured.

*October 2, 1911, squirt hose blew off; 1 injured.
        *October 14, 1911, squirt hose blew off; 1 injured.
        *October 27, 1911, crown sheet failure; 1 injured.
        *December 26, 1911, water glass burst; 1 injured.
        *January 13, 1912, water glass burst; 1 injured.
*January 26, 1912, water glass burst; 1 injured.
*February 16, 1912, water glass burst; 1 injured.
*February 23, 1912, squirt hose blew off; 1 injured.
        *May 17, 1912, branch pipe blew off; 2 injured.
        *June 3, 1912, water glass burst; 1 injured.
        *June 20, 1912, squirt-hose valve open; 1 injured. Total accidents, 18; killed, 0; injured, 19.
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St. Louis Merchants Bridge Terminal Railway:

December 3, 1911, engine No. 80, injector bonnet broke; defect in bonnet; 1 injured.

St. Louis, San Francisco & Texas Railway:

*July 5, 1911, engine No. 616, injector broke; 1 injured.

*October 16, 1911, squirt hose blew off; 1 injured.

St. Louis Southwestern Railway:

*September 11, 1911, water glass burst; 1 injured.

March 10, 1912, engine No. 252, water-glass cock broke off (attempting to remove water-glass packing nut); 1 injured.

Total accidents, 2; killed, 0; injured, 2. San Pedro, Los Angeles & Salt Lake Railroad:

July 3, 1911, engine No. 3630, crown-sheet failure due to low water (flues and fire-box sheets in poor condition); 2 killed.

*August 22, 1911, squirt hose burst; 1 injured.

*August 26, 1911, squirt hose blew off; 1 injured.

*October 19, 1911, injector broke; 1 injured.

March 16, 1912, engine No. 3671, flue pulled through flue sheet; beading on flue defective; 1 injured.

May 27, 1912, engine No. 3672, squirt hose valve accidentally opened; improperly located; 1 injured.

June 22, 1912, engine No. 3653, squirt hose blew off; hose not properly secured; 1 injured.

Total accidents, 7; killed, 2; injured, 6.

SEABOARD AIR LINE RAILWAY:
August 11, 1911, engine No. 904, crown sheet failure due to low water; safety valve leaking badly; 1 killed; 2 injured.

*October 14, 1911, squirt-hore valve open; 1 injured.

*October 19, 1911, engine No. 538, washout plug blew out; 1 injured.
*October 20, 1911, engine No. 783, flue burst; 1 injured.
*November 25, 1911, engine No. 634, flue burst; 1 injured.
*December 1, 1911, defective ash-pan blower; 1 injured. *December 16, 1911, defective boiler check; 1 injured.

*January 4, 1912, engine No. 90, blow-off cock opened while repairs were being made on boiler; 1 injured.

*January 10, 1912, squirt hose blew off; 1 injured.

*January 17, 1912, engine No. 748, squirt hose defective; 1 injured.

*February 15, 1912, engine No. 728, flue burst; 1 injured.

*May 21, 1912, engine No. 600, lubricator glass burst; 1 injured.

Total accidents, 12; killed, 1; injured, 13.

SOUTHERN RAILWAY

*July 23, 1911, engine No. 863, crown sheet failure; 1 injured. *July 31, 1911, blower pipe disconnected; 1 injured.

*August 17, 1911, injector broke; 1 injured. *September 13, 1911, injector broke; I injured.

*September 15, 1911, engine No. 860, crown sheet failure; 2 injured.

*March 9, 1912, steam-heat valve blew out of boiler; 1 injured.

March 19, 1912, engine No. 678, stay bolt blew out; bolt smaller than tap applied

in sheet; I injured.

May 22, 1912, engine No. 276, stay bolt blew out; bolt smaller than tap applied in sheet; 1 injured.

*June 14, 1912, squirt hose burst, 1 injured.

*June 25, 1912, engine No. 3406, squirt hose burst; 1 injured.

Total accidents, 10; killed, 0; injured, 11.

SOUTHERN KANSAS RAILWAY CO. OF TEXAS:

*October 5, 1911, water glass burst; 1 injured. *December 4, 1911, water glass burst; 1 injured.

SOUTHERN PACIFIC Co.:

July 1, 1911, engine No. 1680, flue plug blew out; 1 injured.
July 3, 1911, engine No. 3045, crown sheet failure due to low water; water foaming badly in boiler (appurtenances removed prior to our investigation); 1 injured.

*September 14, 1911, squirt hose burst, 1 injured.

*October 17, 1911, squirt hose burst; 1 injured.

November 3, 1911, engine No. 418, crown sheet failure due to low water (influenced by broken stay bolt); 4 injured.

*November 5, 1911, squirt hose blew off; 1 injured.

*November 8, 1911, engine No. 2683, squirt hose blew off; 1 injured.

*November 11, 1911, engine No. 1538, collar broken on pipe to injector; 1 injured. *December 1, 1911, engine No. 74, water glass burst; 1 injured.

Southern Pacific Co.—Continued.

*December 3, 1911, flue burst; 1 injured.
*December 9, 1911, squirt hose blew off; 1 injured.

January 3, 1912, engine No. 510, fusible plug blew out; plug improperly applied; 1 injured.

January 5, 1912, engine No. 2763, crown sheet failure due to low water; fire box in defective condition (appurtenances had been removed prior to inspection); 2 killed; 2 injured.

*January 6, 1912, engine No. 1729, injector throttle blew out; 1 injured.

*February 13, 1912, engine No. 257, stud blew out of boiler; 1 injured.

March 18, 1912, engine No. 704 (G. H. & S. A.), boiler explosion; overpressure due to screwing down safety valves by employee engaged in setting same; 26 killed; 32

April 4, 1912, engine No. 2538 (O. & C.), crown sheet failure due to low water;

water glass too low; 2 killed.

April 9, 1912, engine No. 2739, crown sheet failure due to low water; fusible plug defective; fire box in defective condition (appurtenances removed prior to inspection); 1 killed; 1 injured.

April 18, 1912, engine No. 849 (G. H. & S. A.), crown sheet failure due to low water:

threads on crown bolt defective; 2 injured.

May 2, 1912, engine No. 2701, flue pocket blew out; improperly applied—not pros-

sered; 1 injured.

May 14, 1912, engine No. 424 (G. H. & S. A.), crown sheet failure due to low water; engineer and fireman on duty for excessive period; condition of fire box and fusible plug defective; injector, water glass, and gauge cocks defective; 2 injured.

June 26, 1912, engine No. 838 (G. H. & S. A.), crown sheet failure, due to low water;
no contributory cause found; 1 killed; 1 injured.

Total accidents, 22; killed, 32; injured, 58. SPOKANE, PORTLAND & SEATTLE RAILWAY:

*November 5, 1911, collar on steam pipe to injector broke; 1 injured.

STANDARD & HERNANDO RAILROAD:

March 10, 1912, engine No. 7, crown sheet failure due to low water; no contributory cause found; 1 injured.

TAGOMA EASTERN RAILROAD:

*June 28, 1912, engine No. 3, squirt hose blew off; 1 injured.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS:

*April 25, 1912, engine No. 6418 (M. P.), water glass burst; 1 injured.

*June 7, 1912, engine No. 52, squirt hose blew off; 1 injured.

TEXAS & PACIFIC RAILROAD:

*October 6, 1911, engine No. 314, crown sheet failure; 2 injured.

*November 20, 1911, water glass burst; 1 injured.

*March 20, 1912, flue burst; 1 injured.
*March 31, 1912, water glass burst; 1 injured.
*May 28, 1912, squirt hose burst; 1 injured.
*May 30, 1912, squirt hose blew off; 1 injured.

*June 27, 1912, engine No. 354, stay bolt blew out; 2 injured.

Total accidents, 7; killed, 0; injured, 9. Texas Central Railroad:

*October 20, 1911, engine No. 121, boiler check blew out; 1 injured.
*November 6, 1911, engine No. 121, squirt hose blew off; 1 injured.
*April 10, 1912, engine No. 125, boiler check broke; 1 injured.

Total accidents, 3; killed, 0; injured, 3.

Toledo & Ohio Central Railway:

*November 20, 1911, engine No. 5536, water glass burst; 1 injured.
Toledo, Peoria & Western Railway:
September 8, 1911, engine No. 7, crown sheet failure due to low water; bottom water-glass cock found stopped up; 1 injured.
*September 21, 1911, squirt hose blew off; 1 injured.

Toledo, St. Louis & Western Railroad:

*July 5, 1911, squirt hose blew off; 1 injured. *August 5, 1911, squirt hose blew off; 1 injured. TRINITY & BRAZOS VALLEY RAILWAY:

*July 21, 1911, water glass burst; 1 injured. *October 25, 1911, injector broke; 1 injured.

October 28, 1911, engine No. 17, crown sheet failure due to low water; no contributory cause found; 3 killed.

TRINITY & BRAZOS VALLEY RAILWAY—Continued.

December 13, 1911, engine No. 41, crown sheet failure due to low water; bottom water-glass cock found closed; 2 killed; 1 injured.

*January 18, 1912, water glass burst; 1 injured.

February 26, 1912, engine No. 40, crown sheet failure due to low water; no con-

tributory cause found; 1 killed; 3 injured.

Total accidents, 6; killed, 6; injured, 7.

Union Railroad:

April 27, 1912, engine No. 98, crown sheet failure due to low water; no contributory cause found; 2 injured.

Union Pacific Railroad:

*August 30, 1911, squirt hose burst; 1 injured.

*September 28, 1911, engine No. 103, soft plug blew out; 1 injured.

November 19, 1911, engine No. 300, crown sheet failure due to low water; gauge cocks defective, water glass not registering correct water level; 2 injured.

*January 17, 1912, engine No. 131, injector broke; 1 injured.

*January 23, 1912, flue burst; 1 injured.

March 7, 1912, engine No. 290, threeds stripped on injector steam pine: 1 injured.

March 7, 1912, engine No. 290, threads stripped on injector steam pipe; 1 injured. April 15, 1912, engine No. 323, steam pipe to right injector broken; brazing defective;

2 injured.

June 9, 1912, engine No. 1904, injector broke while engineer was injecting water compound through overflow; 1 injured.

Total accidents, 8; killed, 0; injured, 10.

Vandalia Railroad Co.:

November 8, 1911, engine No. 442, crown sheet failure due to low water; 2 gauge

cocks stopped up; 3 injured.

*December 3, 1911, engine No. 528, crown sheet failure; 1 injured.

January 16, 1912, engine No. 349, crown sheet failure due to low water; bottom end of water glass stopped up with asbestos (had been reported by another engineer, but repairs were not made); 2 injured.

Total accidents, 3; killed, 0; injured, 6.

VINEGAR BEND LUMBER Co.:
February 20, 1912, engine No. 9, boiler explosion; old crack in barrel of boiler; 1 killed; 7 injured.

VIRGINIAN RAILWAY:

*July 30, 1911, engine No. 438, bad leak in flue sheet; 1 injured. Wabash Railroad:

*August 18, 1911, engine No. 2082, squirt hose blew off: 1 injured.
*October 2, 1911, engine No. 857, squirt hose blew off; 1 injured.
*October 5, 1911, engine No. 607, flue burst; 1 injured.

October 31, 1911, engine No. 852, crown sheet failure due to low water; no contributory cause found; 1 killed; 2 injured.

*November 30, 1911, engine No. 2328, squirt hose blew off; 1 injured.

*December 11, 1911, engine No. 873, washout plug blew out; 1 injured.

December 30, 1911, engine No. 1890, crown sheet failure due to low water; no contributory cause found; 1 killed; 1 injured.

*January 3, 1912, engine No. 803, lubricator glass burst; 1 injured.
*February 20, 1912, engine No. 2059, blower pipe disconnected; 2 injured.
*March 4, 1912, engine No. 864, water glass burst; 1 injured.

*May 2, 1912, engine No. 558, water glass burst; 1 injured.
June 1, 1912, engine No. 29, crown sheet failure; overheated, due to scale on sheet and bolts; 1 injured.

*June 27, 1912, engine No. 250, water glass burst; 1 injured.

Total accidents, 13; killed, 2; injured, 15. WESTERN MARYLAND RAILWAY:

*September 5, 1911, engine No. 1603, squirt hose valve defective; 1 injured.
*October 21, 1911, engine No. 616, broken collar on injector pipe; 1 injured.
February 7, 1912, engine No. 320, lubricator glass burst; follower to bull's-eye glass

loose; 1 injured.

*May 4, 1912, engine No. 102, squirt hose burst; 1 injured.

June 10, 1912, engine No. 321, squirt hose blew off; not properly secured; 1 injured. *June 28, 1912, engine No. 512, squirt hose blew off; 1 injured.

Total accidents, 6; killed, 0; injured, 6. WESTERN PACIFIC RAILWAY Co.:

April 22, 1912, engine No. 49, crown sheet failure due to low water; water in boiler foaming badly; 3 killed.

WHEELING & LAKE ERIE RAILROAD:

*July 25, 1911, squirt hose blew off; 1 injured.

*August 5, 1911, squirt hose blew off; 1 injured.

*September 5, 1911, water glass burst; 1 injured.

March 24, 1912, engine No. 355, blower pipe loose and leaking in front end, causing back draft; 1 injured.

Total accidents, 4; killed, 0; injured, 4.

Wichita Valley Railway:

*August 19, 1911, injector broke; 1 injured.

*November 17, 1911, washout plug blew out; 1 injured.

*March 1, 1912, engine No. 1, injector broke; 1 injured.

March 22, 1912, engine No. 302, squirt hose blew off; not properly secured; 1 injured.

Total accidents, 4; killed, 0; injured, 4.
YAZOO & MISSISSIPPI VALLEY RAILROAD:

*September 1, 1911, squirt hose disconnected; 1 injured.

*October 14, 1911, water glass burst; 1 injured.

*February 2, 1912, crown-sheet failure; 3 injured.

*June 13, 1912, squirt hose blew off; 1 injured. Total accidents, 4; killed, 0; injured, 6.

Classification of the foregoing accidents showing in each instance the number of accidents, number of deaths, and number of injuries resulting therefrom.

Nature or cause of accidents.	Number of accidents.	Killed.	Injured.
Shell explosions.	3	27	41
Crown sheet failures due to low water (no contributory cause found) Crown sheet failures due to low water, where contributing defects were	69	35	129
found	25	19	39
Defective blow-off cocks	23	2	22
Defective washout plugs.	11	2	14
Burst water glasses	165	1	168
Burst flues	56	1	62
Steam leaks obscuring engineer's view	Ī	1	********
Defective steam pipe joints		2	.7
Defective boiler checks		1	11
Burst lubricator glasses.		ARREADA.	49
Defective squirt hose and connections	243		248
Defective injector steam pipes			38
Arch tube failures	18	Water Street	22
Injector failures	46	******	47
Defective water-glass cocks and appurtenances	8	· creering	1
Flue plug failures	7	.0200	
Defective studs	12		13
Defective lubricators	11		1:
Defective blower pipes	9		10
Defective staybolts			11
Defective dome caps	2	william.	
Defective draft pipe and bracket		*******	
Burst water bars	3	******	
Defective arch studs	2		
Defective threaded plug (flue sheet)	1		1
Defective ash-pan blowers	3		
Defective cap on branch pipe	1		
Defective valves			
Defective mud ring.	1	· · · · · · · ·	
Defective patch bolt	1	Inches !	
Defective whistle elbow	1	factions.	9 7
Defective arch tube plugs	2		
Defective blower throttle bonnets	2	liver and	
Burst steam pipe in smoke arch	1		1
Defective diaphragm plate	1		
Defective fusible plug	1		
Defective flue pockets	3		
Defective gauge cocks	- 4		-
Defective heater pipes	13	la mark	
Defective superheater pipe	1	100000	
Defective gasket handhole plate.	1	10000000	
Defective flue sheet.	2		1 3
Total	856	91	1.00

TABLES SHOWING NUMBER OF LOCOMOTIVES OWNED, INSPECTED, FOUND DE-FECTIVE, AND ORDERED FROM SERVICE; AND NUMBER AND KIND OF DEFECTS.

{The ownership is generally in a railroad corporation and the abbreviation for railroad or railway is omitted in most cases. In designating other corporations the abbreviation "Co." is added.]

Defects.	Aberdeen & Ash.	Aberdeen & Rock.	Abilene & Sou.	Addyston & O. Riv.	Akron & Bar. Belt.	Alabama & Miss.	Alabama Central.	Ala., Tenn. & Nor.	Alcolu.	Alderman Lbr. Co.	Aliquippa & Sou.	Amador Central.	Amer. En. Tile Co.	Amer. Sheet & T. P.	Amer. Signal Co.
ay bolts broken	1			2				2	1		2 2				
igid bolts leaking 1											2			****	
exible bolts leaking 1					are.	0.6	0.75		025	< + < +	0.00	4-29			
elitales closed 1	1121			1	111	22.5	2010		1		100	50.20	1177	2120	4.43
av holts not drilled 2		9		1	1 2		200	100		3.8	0	223			100
rown sheet leaking	9001	2000		1.0	1000					300	311				
ther sheets leaking				1		1000	3000		1	700		100	200	C.L.	
re-box sheets bulged							3								1
ues leaking 1				22.82			108-	4984	2	×	1		***		
lues plugged	17	****			***	1		2020	712-	7131	9	1871	2-44		100
rch pluce leaking '	****	*****	****			****	****	4371		****	1	444	515.	++++	70
usible plug leaking					100	1818			1	200			1	1	
arrel leaking	1										1	-	1	1	
ome leaking				1741	1	1	24.07	1		42.17					
hroat sheet leaking				11.55	55.87	****		****	117.0	0-10-0	1200	100		11.05	6 .
ud ring leaking	500	****		1	****	17.8.24	1+11	1000	2	A XIII Is	- (- 5	25.00			1.5
ashout plugs leaking l		100.0	1	1	****		1276		1 1 1 5		i	177.1	1.00	1.000	100
afety valve missing	****		0.5				2	1000	1001			133	1	100	1
lety valve stuck	S.,	1011					10.3		10			200	0.0	0.8	
fety valve leaking			44.77				+200	22.5			250			Car.	
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phon wrongly applied	9	1	10	1000	4.22	1	9	4	2	1.0	1000	i	1	1110	100
phon leaking				3000			1.7	Air.	1.0	D.		1.0	1.10		
age cocks wrongly located			Land.	- 44	1000					1012	200	-300	200		
age cocks stopped up	54.00	15000	7-77		-69	12231								VIV :	4.0
age cocks inoperative	3.00	2	-3	100		100	23.11	100	110	100	0	HK T	0	100	10
age cocks blowing	1	1	1-8-3	9	1 × 2 5	4	12.11		0	1	1 3))) +-C-	14.00	3	10
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ipples defective or missing	200				-		View.				1000		100	1000	40
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ater glass stopped up	000	the earl	31751			1220	VIII Y			100	- 11	Yes			13.
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Vater-glass blow-off cock defective	1	1	1	100	1	10.0	1		100		100	1		100	
Vater-glass tube broken			1987	4000			100	1259						100	
amp missing							5.0	3							
Vater-glass shield missing	-00	111111	13.000	-			100	6-1	- 0-81	1.58	1.8	158		100	
Vater-glass snield delective		1.5430	10070		100		No. X					155			
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ubricator shields defective		111911		10011						100				11.	1
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ire box plug not soured	- 3			- 1		l li	3 "	-						- 3	-
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		13													

¹ Number of locomotives reported with this defect.
² Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

tay bolts broken igid bolts leaking ' lexible bolts leaking ' lexible bolts leaking ' elltales closed ' elltales stopped up ' lay bolts not drilled ' rown sheet leaking ther sheets leaking ther sheets bulged lues leaking ' lues plugged reh flues leaking ' reh plugs leaking ' reh plugs leaking ' reh plugs leaking ' usible plug leaking arrel leaking ome leaking hroat sheet leaking ud ring leaking dow-off cock leaking ' ashout plugs leaking '						1			1777	3	20				
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ashout plugs leaking	1300		1	** * *	10				4000		2	1		****	
afety valve stuck						000									6
nfety valve leaking							****	***	6660			****	4.4.4		
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ial glass missing	1011									***	4	****	1731		
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age cocks wrongly located															7.
age cocks inoperative				241.	4		1277		1			3			
age location improper age incorrect, ial glass missing. phon wrongly applied phon leaking age cocks wrongly located age cocks inoperative age cocks inoperative age cocks blowing. ge-cock handle defective age-cock drip defective age-cock handle defective rip pipe missing ipples defective or missing. 'ater glass stopped up.' ater glass blow-off cock defective 'ater-glass blow-off cock defective 'ater-glass blow-off cock defective 'ater-glass shield missing.' ater-glass shield missing.' ater-glass shield defective 'ater-glass shield sheetive 'ater-glass shield sheetive 'glector throttle defective jector tank valve defective jector throttle defective jector delivery pipe def	25.1	1			16	1								****	
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ater glass missing		1	2.2.						-12-			uu.			
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amp missing							124				20.00		1200		
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jector inoperative	1000	1924	2	11.	e e e e e		1111		100		*****		1000	1	
jector tank valve defective	12.13			1455	*****		44.4	19.49	1212	28.34	6	1	1,854	1	
jector feed pipe defective			1	Coo.	i	3				300				1	10
jector throttle defective	1555	OTF.	5559	****		1	1			5887	2	10.75			-
jector delivery pipe defective	1000	1		****			1000			3.5	10000	233		i	11
dector boiler check defective	9	1		9934	2 3		1 V = X		-7-7		9	2-5-4		1	
adge plate missing	2	1			2	4				000	1		T	2	:
re-box plug not secured	0.81	444				- 2.		-5-5-			1	5			1.0
ater-glass drip defective	3350		1110	12.11			1177	2000	****	****	12.134		1077		1
ater-g'ass drip wrongly located age-cock drip improperly located re-box sheets corroded	18.3	13-4	1,00			()(=2	1 4 × X		-2-3	-2-1	+5-7-	1100	243.57		-
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		-			14	ă	-		-	-		4	00	9	• •
Number of defects	9	4	4	1	110	33	1	31	3	27	160	25	3	23	L
ocomotives owned	1	6	171	1	58	8	2	Ī	2 2	10	24	5	4	4	ſ
ocomotives inspected	2	1		1	28	5	1	1	2	57	24	5	1	7	

¹ Number of locomotives reported with this defect.
² Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Ark., Sh. L. Lbr. Co.	Artesian Belt,	Asherton & Gulf.	Ashland Coal & I. Co.	Ashland, Odanah &	Atch., Top., & Santa Fe.	Atlanta & St. And. Bay.	Atl. & W. Point.	Au. Bir., & Att'c.	Atlanta Jt. Term.	Atlantic & Western.	Atlantic City.	Atlantic Coast Line.	Atlantic Nor. & Sou.	Augusta Northern.
Stay bolts broken				4		949		24	44	4		13	425		
Rigid bolts leaking 1						146		1				1	11	- 18	
Flexible bolts leaking 1	****	***	***	2020		71	2.44	4	1	***	1021		14		
Telltales closed ¹ Telltales stopped up ¹ Stay bolts not drilled ² Crown sheet leaking	1		20.20	2224		729	3		11	2		8	126		
Stay bolts not drilled 2				3	1931	170	48.15		1	440	2.22	2.63	. 7		
Orber sheet leaking	44.5			115	1157	200	3	-	· ·				11 48	150	
Other sheets leaking Fire-box sheets bulged			1000			60				****			13	130	
Flues leaking 1				1	1131	65.	21.72	1	1	2010			31	100	
Flues plugged			+352	-5.49	151	32	1	0.00	1	2020	YATE	6.91	95		
Arch flues leaking ¹ Arch plugs leaking ¹					****	125	100	1	1.1.	****	1444		41	3.	
Fusible plug leaking					22.22	44.77				2101				116	-1
Barrel leaking		None.			655	42								134	
Dome leaking Phroat sheet leaking			1321	***		52 65	1000	1	1	1000	2005		10 23 45 29		***
Mud ring leaking						52	1		1	1	****	5	23	23	4.
Blow-off cock leaking 1	,			12.5		389	8080		1	1		0	45		10.00
Blow-off cock leaking !		****	+2+2		****	335	(4.5.4	(95)	9	1	2.70	0	29	1.00	(-
Safety valve stuck	75.50	111	1000	200			1444				225		200 000		0
Safety valve leaking				0.00	See all	12		-0.00-		W.			2		
Tage location improper		444	5555	2051	100	17	7.75	1778		1 503	3434	+	2000	1000	-
Page incorrect	****	2152	1.50	****	2135	16.	ï	1000	2010	1	****	34			-
Siphon wrongly applied				4		223 55	1		1		1	200	22		1
Dial glass missing Siphon wrongly applied Siphon leaking Gage cocks wrongly located			2.5.5			55		1	3	1		18	18	50,0	
Jage cocks wrongly located		1471	2525	1	T	10.		1898	1191		21,11	2421	1 0	494	100
lage cook inoperative						1220	1000					100	11		
lage cocks blowing		100		6		85	1		7	2	2223	3	85		
Jage-cock handle defective	1125	20		1	2071	28	(1-11	8-2.5	1000	1181	3755	3711	0	17.5	77
Sage cocks blowing Sage-cock handle defective Sage-cock drip defective Orip pipe missing	1197	7.000	80.5	1	85.67	164	4 . 60	6.50	1	778 - 1781	YAY.	1151	. 2	1111 1110	2.0
Nipples defective or missing Water glass missing				2331	-5-1	101	1	1550	10.38	1000	149		1	10.00	See
Water glass missing	1400	livel	1501	25	9191	1122.00	35	13	17	1.01	3	63	58	111	
Water glass stopped up Water-glass cocks defective		1,600	10000			.58					****		23	254	7.
Water-glass cock handle defective	3			000	1000				T.	10.		1000	4		
Water-glass cock handle defective Water-glass blow-off cock defective . Water-glass tube broken	1	-970	2222	2		-53	1	1	1	2 2	1115	100-	24		1
							10.50	9.00	32.81	2	3755	1151	13		200
Water-glass shield missing.		1000		1	27.5	9				10134			15	110	
Water-glass shield defective	2	1411	55.5	-9-1	0101	:91					2122	21.22	10		13
Mater-glass shield missing. Water-glass shield defective. Water glass improperly located Labricator shields missing Lubricator shields defective	400	-7		-		2	- 2		-35	-71-		11	73.750		-
Lubricator shields defective	1,000	1		30		215	3	13	1	1		29	00		
micciol more atty of the second						74		2000					11		
njector tank valve defective njector tank hose defective		0.4(4)	$ F+ \in \mathcal{B}$	1	- (+)	95			- 61		0.81	12.52	110		= 1
njector feed pipe defective	****	(4)		1	157	31 S4	D(40		1		Cox.		2.1	y 4 10	- X -
mentor throttle defective				7		220	1	1	2		12.71	2	56:		
njector steam pipe defective njector delivery pipe defective njector bofler check defective ab card missing	1.44	220		1		161			1			2	33		
njector delivery pipe delective	4 - 9 3			1		44			2			1	116		
ab eard missing			1	10	1	374	19	9	1		7	J.	27		
ab card missing ladge plate missing lire-box plug not secured		S	1500	12		20	19	5	35		1	13.	13		- 4
ire-box plug not secured			1000			162	36.65		- 7		3.		74		- 1
Water-glass drip missing			1911			11			- 1		-99		100		
water-glass drip wrongly located						2									
age-cock drip improperly located.						141							1		
Fire-box sheets corroded				- 0		20							(56		
Inclassified steam leaks,	4			-		1,000	1	0	0	J		8	2012	5	
Number of defects	-8.	2	T	91	2	7.113	10.	15.	124	15	12	237	1,000	2	12
Locomotives owned	-		- 0	8		2, 300	-0		63		-	10	720		
Locomotives inspected	2	2	2	300		1 470	0	101	(5	120	-	01	1.19	-	- Paris de la constante de la
Locomotives defective	. 2	. 1	1	30	1	1,081	1.5	3/0	(15)	-		550		0.0	1
ocomotives ordered from service	0	1	()	0.	()	251	()			13	():	11	225	1)	- 1

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

63667-12---3

Defects.	Augusta Southern,	Au Sable & N. W.	Baltimore & Ohio.	Balto., Ches. & Atl.	Bangor & Aroostook.	Bartlett Western.	Bauxite & Northern.	Bayfield Transfer.	Bay Point & Clayton.	Bay Terminal.	Bearden & Ouachita R	Beaumont & Gt. Nor.	Beaumont-Sara-Trans	Beaver Dam.	Bellefonte Central.
Stay bolts broken			831		16	7	1	55	1	2		1			
Rigid bolts leaking			77												
Flexible bolts leaking		40.00	67	***		****	****		****	***	****				***
Celltales closed		****	82 98	****	4	****	****			1		100	353	****	
stay bolts not drilled			21	5				1			13.1				
Frown sheet leaking			143 183				***			er.			edes	***	
Firebox sheets bulged	100	101	27												
Unag laaking			109												
flues plugged		****	36	2		****		++++		2320			1220	2	
Arch flues leaking			42												
fusible plug leaking				iii					1						
Barrel leaking			137				****	1		1					-50
Phroat sheet leaking		***>	214 55	***	****				***	1	****	***	133	****	
and ring leaking		22.65	143	423				1.2.		1			100		
Blowoff cock leaking	****		123	1									1000		
Vashout plugs leaking	***	2	259	133		355	1100		****	77.77	1000	1011	100		
afety valve stuck			1		***				2080			17.55	1440	20.00	
Safety valve leaking			78	3											
Page incorrect		2022	23	****					0.20	****	****	9	1.00	70.5	**
lial-place missing			47							47.0			135.2		1
iphon wrongly applied	1		. 68	8		1						2		200	
Siphon leaking	1		207			****	:	****	48.48		2143	1		***	**
Siphon wrongly applied Siphon leaking Sage cocks wrongly located Sage cocks stopped up.	****		28	1	2	337	1711	****	1	224		15.	1944	****	***
sage cocks inoperative	20.00		1.2	4	000		0.0	000							
Fage cocks blowing	***	37	469 13	2	****	***	7	1	***	2	7433			1	
Pagecock handle defective	CH.		7						1	000					111
Orip pipe missing			6	- 3			****		15000		4000			40.00	
Vipples defective or missing	4	****	84	6	***	1717	7100	****	****		****	***	****	****	56.
Vater glass missing Vater glass stopped up			21												
Water-glass cocks defective		Tax . C	149	2	1750	24.64	****		****		2121	in			
Water-glass cock handle defective Water-glass blow-off cock defective .	****	****	279	11	***	****	****	4.34		1		100	4.00		
Water-glass tube broken			30												111
amp missing			20	****	4.444	****						114	1137		
Vater-glass shield missing Vater-glass shield defective			19	2	****	****	****	1		1	1	1	1		150
Water glass improperly located			13								200				C
Lubricator shields missing		1	301	7	2	2	4999	1		1	1	2	1		
Lubricator shields defective Injector inoperative			108	4	4455			T	****	****			****	****	
njector tank valve defective			6										000		
njector tank hose defective			86	6	-		4112			2		200			
njector feed pipe defective njector throttle defective			356	8	***	*			AVE		****	1	44.49	****	
njector steam pipe defective	2000		303		****		44.	2271	2101		1420		1		
njector delivery pipe defective			171								1.5	1000	Sec.		
njector boiler check delective	1	****	121	28		1	1	1	175	1		1	1	***	***
Badge plate missing			214		1		1	î		î			4444		
njector boiler check defective ab card missing Badge plate missing Firebox plug not secured			7	000	***			:- * *	****				I		1-
Water-glass drip missing Water-glass drip defective			1,3			3.45	e = X =	****	****						
Vater-glass drip wrongly located			. 1	2434	541	Coli	1444	5141		Y.		1,000	622		1
Gage cock improperly located Firebox sheets corroded			1.9-145	****			-0.4					-4.	***		1.,.
Fire bose defective	1900	1111				-			5585		42.85			11.43	
Fire hose defective Unclassified steam leaks	2.50		1,724	19			2	1111			200	2	2010		
Number of defects	_	_	7,850	_	27		-	63	-3	17		13	4	4	
Locomotives owned	6	=	2,076	-	98	-2	1	2	2	ī	2	3	1	1	
Locomotives inspected	4	3.	2.892		59	3		3	2		2	3	I	2	
Locomotives defective	4	- 2	2,029	18	18	3	1	-24	1	2	1	- 3	1	1	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Belt Ry. of Chicago.	Bennettsville & Cheraw.	Benwood & Wheel. Con.	Bessemer & Lake Erie.	Big Falls,	Big Sandy & Cumber,	Big S. Gap & P. Valley.	Bingham & Garfield.	Birmingbam & Atlantic.	Birmingham & S. E.	Birmingham Belt,	Birming., Cols. & St. A.	Birmingham Southern.	Black Bet. C. & M. Co.	Bloomshire & Sullivan
Stay bolts broken	13	5	5	17					550			5	3		
Stay bolts broken Eligid bolts leaking ' Flexible bolts leaking ' Flexible bolts leaking ' Felitales closed ' Felitales stopped up ' Stay bolts not drilled ' Crown sheet leaking Other sheets leaking Other sheets leaking Other sheets bulged Flues leaking ' Fliebox sheets leaking ' Fliebox sheets bulged Flues leaking ' Fliebox sheets leaking ' Fliebox sheet				1											
Telltales closed 1			1	4					::::	****	2021	11.31	****		**
Telltales stopped up 1	3		2	4	****			1							
rown sheet leaking	4	**.*	111	3	****	****	****	****		100		****			240
Other sheets leaking	2	1	1	15					****	***					1
Firebox sheets bulged		2100	***	1 2			1000	***			****	1			
Flues plugged		7			200				****		100	1011	:00	****	
arch flues leaking 1						-5-6									
usible plugs leaking	+4.00	1111	2532	*****			****			****			****		
Barrel leaking		133	1	2				****	****				5.91		
Chrost sheet lanking	1	1175	3	1			. (**)-					2011		÷	
fud ring leaking		ï	****	5				1072						24.11	• •
low-off cock leaking				8								4244			
Vashout plugs leaking 1	1	4.4.4.4	1.7.4.2	14	****			4.41	8000		112	1000	1		24
afety valve stuck		5				1000							200	****	10
afety valve leaking			5499	1					-10	22.1		2111			Ç
age incorrect			****	*****	233		1717		4,4,4.7	****			***	erte	**
ial glass missing		129.	1	*****											
iphon wrongly applied	2	1	14.44	0				****	1150			4.5 117	1	+4.6.4	+=
age cocks wrongly located					2557	****	****	3				****	11.0		•
age cocks stopped up	2			1			12.7		. 2.7	2121		1044			-
age cocks thoperative		223	1	2	Ca Ea Y	4255	- 25 17			****		****		132	9.0
age-cock handle defective	1	155.	7141	inite			1,00			1212		1		1	
age-cock drip defective				1	1.40	1200			****				0.0	1240	4.4.5
ipples defective or missing		200			1000	****									*
Vater glass missing		L	10		1	41.42	14.5	-(*)	3	3		23.42	1	1	
Vater glass stopped up		7.77	****	1	***	4.5,4	L. P. L. L.	1 2 2 4	****			81	1555		5,0
Vater-glass cock handle defective				esving.						120-2		1221	****		
Vater-glass blow-off cock defective.	1.	1	****	1	2500		150	1	1 2 2 1	rxee.		17.02			
Tater-glass tube broken amp missing "ater-glass shield missing "ater-glass shield defective "ater glass shield defective "ater glass improperly located "ubricator shields missing, "ubricator shields defective njector toperative, njector tank valve defective njector tank hose defective njector teed pipe defective njector throttle defective njector delivery pipe defective njector boiler cheek defective njector boiler cheek defective njector boiler cheek defective njector stans njæ					10.00				****	2.8		1115		200	å
Vater-glass shield missing	1			3	****	1-21	100.00		Valua I	4.00.0	5893	2			
Vater glass improperly located	9	.3.	2.5	9	20.00	*****		***					***		
ubricator shields missing		3		1	000	1	2			1	1	2	2	1	10
ubricator shields defective		9	1		001					1		1000			e V
jector tank valve defective		1		*****	2011	1181								1161	38
elector tank hose defective	1553	1	200	1	12.85	0.00	< · × -			-		1001	2.00	1	- 43
jector throttle defective		****	2	4	1-77	1000		2122	1			4000		19.00	- 12
jector steam pipe defective		. V.	7	1										1144	
lector delivery pipe delective			- 3	2		1						5 5 P.O.	5 × ()	0.000	
ab card missing	4	2		Ĩ	i	1114	2		1	2	2 DOG		1	DATA DIS	
adge plate missing	4	10	13.50	1	- L	1-811	2	4	3	5.	722 F	101	1	1	
ab eard missing adge plate missing. ire-box plug not secured ater-glass drip missing.	100	16	. 2 . 2		CO X S	1110	****	X+X+0	1010		i	4	0.00		
ater-glass drip defective	val.	282-	8110	1											
ater-glass drip defective. Vater-glass drip wrongly located. age-cock drip improperly located. tre-box sheets corroded.		-1-1		******										16.11	1
ire-box sheets corroded				2									5-51	-	
ire hose defective		×: +1	17.9	37		100				2				28.0	
nclassified steam leaks	-	- 2.7	-4	- 111	100	-		-		-2				00,0	
Number of defects	_		43	155	2	2	6	15	14	I^2	2	17	11	6	
ocomotives owned	201	4	7	169	1	4	4/	12	1	2	2	2	30	1	
ocomotives inspected	21	3	33 23	01	1	2	100	T.	3	3	1	1,5151512	11	1	
						0									

¹ Number of locomotives reported with this defect.
² Number of locomotives reported with this defect.
Also includes stay bolts not properly drilled.

Defects.		. & M. River.	L. & A. S.	lton.	stern.	bany,	ine.	Boyne City, G. & Alpena.	k Bowman,	Saco River.	Way.	oad.	Saliroad.	squehanna.	CS & Arc.
	Blue Ridge.	Blythevl., B.	Blytheville, L. &	Boca & Loyalton.	Bonlee & Western.	Boston & Albany	Boston & Maine	Boyne City,	Branchville & Bowman,	Bridgton & Saco River.	Brinson Railway.	Bristol Railroad.	Brooksville Raliroad.	Buffalo & Susquehanna.	Buffalo, Attica & Arc.
Staybolts broken	4			3		350	425	3	2000		2	12.		56	
Rigid bolts leaking 1	1355	25.00	140	1	* 100	1	1				6.65				-
Flexible bolts leaking ¹ . Telltales closed Telltales stopped up ¹	1	5.4.		1-41		13	16	1201	1.90			100		5	Ð.
Stay bolts not drilled 2			277			6	13		100		- 3	1000		11	Ŗ.,
Stay bolts not drilled 2 Crown sheet leaking		10			101	21.53	12224		112	5561	2701	1	1000		1
Other sheets leaking			100.0			- 36	7		1	1,000	1	Sec.	10.55	4	14.
Fire-box sheets bulged Flues leaking 1 Flues plugged	123	i			51.51	3	5	X - 22	1131	2491	2260	13	12.21	11	10.
Flues plugged		2.20		Y . Y I	K+ X I		1								
Arch flues leaking ¹ Arch plugs leaking ¹ ² usible plug leaking	244.6	****	444	94.94	2101	13	4	271				3.5	333	100	B.
ruce pingged rrch flues leaking ! rrch flues leaking ! rrch plugs leaking ! surble plug leaking sarrel leaking Jome leaking Throat sheet leaking Jud ring leaking Judetry valve missing Judetry valve missing Judetry valve stuck Judetry valve stuck Judetry valve leaking Judetry valve stuck Judetry valve leaking Judetry valve leaking Judetry valve stuck Judetry valve Judetry Judetry valve Judetry J		ç				1	1000	6111		1131	1111	16	124		1
Pome leaking		3			1101	1 0	3		3 . x .		150		1		14-
hroat sheet leaking			1 . Y .	7424	200	1	2	3.71	7:31	2121		2.0	100		
Ind ring leaking	1249		1.55	1011	1123	29	31	5191	10.50	25.94	2191	2.75	1	7	1
Vashout plugs leaking 1	Ĭ	7.00	25	5000	200	19	21				1	i	1	1	10.
afety valve missing									1			512			
afety valve stuck	1875	9190	17.5	EFRI	1761	1000	2	17.5	110	- X	1	***	*×**	1	× .
lage location improper								12.41	11.65		111	2.5	1010	1117	12
lage incorrect	2191	+8+P	4 X = 1	1111	421	11211	10	1241	1000	da Fa		114		40.00	
iphon wrongly applied	2	2	1	1	2		- 10		1			20	-32/	73.00	
iphon leaking	1	40		1		3	13	100				207		6	Ð.,
lage cocks stopped up	*17:0		1111	1	300	6	97	001	- 1 41		9	100	3	1	
lage cocks inoperative		****	-221		1	16	8	-2		2 10-1	1	119		1	
lage cocks blowing	5		1121			34	45	19,75	1		2		2		
age-cock drip defective	333	1100			1	T.	8		1		1	100	-100	187	15
Orip pipe missing		5.00	1	2		5	3				1121		1100	13.0	
Vater plass missing	6		17.71	3		1	6	13.91	17	4	3		1111	12.	11.
Vater glass stopped up	1	* X + X	1017	1 X 1 2	-2.1	100	1	2101	111	1		1 2		1	
Water-glass cocks defective	1141	1113		2		8	2			-00-0-		- 10	100	2	1
Water-glass blow-off cock defective.						TI.	13			4000	171		ī	12	
Vater-glass tube broken	2	2.00	-3+1	.,.,			5		23.51	13.00	1		1-54		
Vater-glass shield missing	****	i	2	181)	1151	9	925.655	-×-	*×*×	4.8 = 1	-10.0	*8.*	110-3	1501	4.
Water-glass shield defective			1	2		4	107	2	. 219	2		1		7	
Vater glass improperly located	9	1129	7		1911	ty.	9 46	100	- 1	9				-100	Ŋ.,
ubricator shields defective		****		2			1							150	L.
Water-glass cocks defective. Water-glass blow-off cock defective. Water-glass blow-off cock defective. Water-glass tube broken. Amp missing. Water-glass shield missing. Water-glass shield defective Water glass improperly located. Moricator shields defective Moricator shields defective Missing. Moricator shields defective Missing. Missi				1011	1611	10114	2			0.5+3	1	174	1	(-1)	
njector tank valve delective	1	1000	* X * Y	****	1011	2	19	11-1	F3-3	ary 4 s	3	135	3	T.	-
njector feed pipe defective		1141		1441		100	7	11.54	100	Jal	3			1	
njector feed pipe defective	Salar.	15,5	1145	1	19.1	1	1		- 5		2		2	9	E .
njector delivery pipe defective	2	10000	100	200			10	100.000	-	~1		***			Ē.,
njector boller check defective				-191		1	- 3.	11.41	1	1	115	- ; -	1	2	0.
Badge plate missing.	1	X 8 = 1	1150	1		11	190	-2	1		3	1	1	7	4.
HO-DUA DIUS HOLDOUGHER	3			1		114							3		
Vater-glass drip missing Vater-glass drip defective		1	-3	1		- 1	1					-		3	0.
Water-glass drip wrongly located			-										- 1	101	8
age-cock drip improperly located	(31)											11	100	X > 3.1	0
'ire-box sheets corroded'ire hose defective	153-1		35		1150	150	FILLIAN					116	H X	2123	
Inclussified steam leaks	9	1		12		19	107		1	1	3.		6	12	
Number of defects	41	7	12	41	4	589	1,331	14	12	11	44	5	30	169	1
ocomotives owned.	.5.	4	-5	- G		364	1,246	11	4	5	11	1	1	77	=
ocomotives inspected	17	-33	0.	-	2 3 3	396	1,012	12	1	10	13	20		.51	
ocomotives defective,	12	0	4	É	3 1	240	362	1	0	7	71	0	2 2 22	43	
CONTROL OF THE PARTY OF THE PAR	17.0	17	47			9.7	411	1.4	10	100	1.0	17	13	78	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects. tay bolts broken ligid bolts leaking¹. lexible bolts leaking¹. lexible bolts leaking¹. leltales stopped up¹. tay bolts not drilled⁴. rown sheet leaking. ther sheets leaking. ther sheets leaking. ther sheets leaking¹. lues plugged reh flues leaking¹. lues plugged reh flues leaking¹. reh plugs leaking¹. roh plugs leaking¹. roh plugs leaking i moat sheet leaking dud ring leaking dud ring leaking. low-off cock leaking. //sabout plugs leaking¹ slety valve missing slety valve missing slety valve stuck. slety valve stuck. slety valve leaking iphon wrongly applied liphon leaking. sage cocks wrongly located sage cocks inoperative. sage cocks inoperative. sage cocks inoperative. sage cocks hondle defective rip pipe missing. lipples defective or missing. 'sater glass missing. 'sater glass stopped up. 'sater-glass cock handle defective. 'rater-glass cock sheetive. 'ater-glass cock handle defective. 'ater-glass blow-off cock defective. 'ater-glass blow-off cock defective. 'ater-glass shield missing. 'ster-glass shield defective.	Buffalo Creek.	Buffalo Creek & Gaul.	Buffalo, Roches. & Pgh.	Burr's Ferry, B. & C.	Butler County.	Butte, Anaconda & Pac.	Butte County.	Cache Valley.	Cadiz Railroad.	Cairo & Kanawha.	Cambria Steel Co.	Campbells Creek.	Canadian Pacific,	Carland, J.C. (Const.Co.).	Cariton & Coast
tay bolts broken	4	****	128	3		9	1				4	200	13	8	
lgid bolts leaking 1		****	1		****	1							1,15.		
elltales closed 1			15						3						10
elltales stopped up 1		1.00	21		4444	9	1.000	51.85	3		9	***	1200	-200	
rown sheet leaking			1				1111				2002		****	1	133
ther sheets leaking			18		2	5		Y. Y.	1.21	1611	1923	1		4151	1
irebox sheets bulged		****		****	717.	1			3 - 4 -	1.05	4.4(4.6				
lues plugged			1			5		2		100					150
rch flues leaking 1													esta y		
usible plug leaking		1611	*****	****		****		2000	***		1 = 0 X	1500	FIRE	****	100
arrel leaking			1	1220	1000	1	1010		1000	D.	3-11	1		10.0	
ome leaking		18.07	9	41.44						***		2			
nroat sheet leaking		1923	13	11.98	2.94	1	2491	1191	2455	***	1	246.5	1	-	
low-off cock leaking			1				C								
ashout plugs leaking 1			5			1			1111		1111	1	1		
afety valve stuck		3530	*****	****	1111	7720	2000	2020	***	4	****		1150		
fety valve leaking		12.5	2						4481		7.91	200	1131	2001	
age location improper		-5.0	*****	22.69	100	9	100	45.54	-941			2121		721	
ial-glass missing		1111	121111	10.11	1111	2	4	4540	1000			1895			
phon wrongly applied						2	1		1	1				1	
phon leaking	-	444	3		-000			-			2				
age cocks stopped up		5000	18	11111		50.00	2111	COLUMN TO A STATE OF	1	110	-	101	2		
age cocks inoperative			13			3	93.6-	411-61	1113	41.0	1191		1131		
age cocks blowing			1	+3-1	120	1	28.60	-	2	- 25-		11195	1010		
age-cock drip defective	++-	14.4	2	22.25	. 22		- 1								
rip pipe missing		1000							1				10		
later glass missing		1				9			2		3				
ater glass stopped up	157-		2	2001	351	0180									
ater-glass cocks defective		23.71	5	48.	X = 3.	-17				2					
later-glass blow-off cock defective	-2"	(0.40)	9	4441	Y-1	2							.1		
ater-glass tube broken										2		1			
amp missing							-7								
ater-glass shield defective.			24						3				7		
amp missing fater-glass shield missing fater-glass shield defective. ater glass improperly located ubricator shields missing ubricator shields defective.		100	150.00	- 21			10		-17						
ubricator shields missing	1	1	10)	2			2	1	3		8		1	4	
Hector inoberative			1						-						
jector tank valve defective		1-5	4		2		1								
lector feed pine defective	T	2	×			T									
eter tank hose defective			.50			1									
nlector steam pipe defective			- 5			-3			1						
jector delivery pipe defective	255	***	ñ									- 1			
ab card missing			27			15			I	13	1		33	3	
adge plate missing.			(0)			-3				-3	1		15	3-	
ater-glass drip missing						I	1								
ater-glass drip defective															
ater-glass drip wrongly located age-cock drip improperly located															
ire-box sheets corroded						71									
ire hose defective							-				7	0	-		
nclassified steam leaks		1	-337		2	-3	4		A			2	4		
NY	tte.	8	39%	.5	5	14	10	13	2)	11	31	10	.00	15	
Number of defects	-														
ocomotives owned	12	2	294	3	2	27	7	8	2	3	35	3			
ocomotives owned	12 10 2	91	294 182 121	12127	2	35 35 34	15,10,21	8 1	51 - 15	1010101	35	3	37 127	9	

 $^{^1}$ Number of locomotives reported with this defect. 3 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects. Stay bolts broken Stigid bolts leaking 1. Plexible bolts leaking 1. Plexible stooped up 1. Itay bolts not drilled 2. Trown sheet leaking. Strebox sheets bulged Plues leaking. Plues leaking. Plues leaking 1. Plues leaking 2. Plues leaking 3. Plues leaking 4. Plues leaking 4. Plues leaking 5. Barrel leaking 6. Barrel leaking 6. Barrel leaking 7. Prostibe plug leaking 8. Barrel leaking 8. Bow-off cock teaking 8. Washout plugs leaking 9. Bafety valve missing 9. Bafety valve stuck 9. Bafety valve stuck 9. Bage locoks stopped up 1. Bage cocks wrongly located 1. Bage cocks wrongly located 1. Bage cocks blowing 1. Bage cocks blowing 1. Bage cock of pled efective 6. Prip pipe missing 9. Water glass ock handle defective 1. Water-glass cock affective 9. Water-glass shield missing 9. Water-glass shield defective 9. Water-glass shield defective 1. Water-glass shield defective 1. Water-glass shield defective 1. Water-glass shield missing 9. Water-glass shield missing 9. Water-glass shield missing 9. Water-glass shield defective 1. Water-glass shield defective 1. Water-glass shield defective 1. Water-glass shield defective 1. Bage-cock defective 1. Bage-cock defective 1. Bage of the missing 1. Water-glass shield defective 1. Bage cocks stopped 1. Bage cocks stopped 1. Bage cocks defective 1. Bage cocks stopped 1. Bage cocks stopped 1. Bage cocks 1.	Carolina & N. W.	Carolina, Clin. & O.	Carroll, & Worthyl.	Carthage & Copen.	Catskill Mountain.	Cazenovia & Sauk C.	Central Indians.	Cent, of Georgia,	Cent. New England.	Cent. Ry. of Ark.	Cent. R. R. of N. J.	Cent. R. R. of Pa.	Central Vermont.	Charleston & W. Car.	Charleston Term.
tay bolts broken	1	13		1	1		9	28	36		81		506	12	
Rigid bolts leaking 1							1	1	****		1		3	• • • •	
Telltales closed I		5		****				3	****	****	4		12	··i·	• -
Celltales stopped up 1	1	6			1	1	1	41		1	16		12	13	
tay bolts not drilled 2	****		7444		2494		14	1	***		4	2	1	·	ļ
Other sheets leaking			::::	***	1		1	7	3		34	117	6		
irebox sheets bulged							2							i	
lues leaking 1	177	1	1	****			1	12	2	****	16		4	.1	
rch flues leaking	11	3			***	****		****	****		••••	****	0	18	
rch plugs leaking 1		****						5				1	7		
rusible plug leaking							. 25.0							2	
Dome leaking		3	****				1	1			9		3	•••	İ
hroat sheet leaking			1011	1	1000		1	3			5		2		١
fud ring leaking	1	1	1			5575	1775	6	8		29	***	22	:-	
Vosbout place leaking	5.5.5.3	6	1			1		12	1	****	17	1	10	I	••
safety valve missing.	200	2		231	::::	100		10			11		10		
afety valve stuck			2.00	1.22	244		52.2						*****		ļ.,
afety valve leaking		2									6		4	• • • •	1
lage incorrect		1		****		***	177	1		777	1	****	2	• • • •	ļ-·
Dial-glass missing		1		1276	1000		****	î	****		36		16	,	
iphon wrongly applied	6	1					4	2	1	1		3	13		į.,
Save cocks wrongly located	1	1			****			7	L		27	****	3	4	j
age cocks stopped up		100	1	11.	110	1	1	2	3	771	7	1000	4	3	1::
age cocks inoperative		1					1		2		63		16	3	١.,
lage cocks blowing		7	1	1			2	31	3	1150	25	***	42	8	;-·
age-cock drip defective	300	****	1177	22	5000			3	2000	****	8	1111	1		l.,
Orip pipe missing									1	1	6000	2511			١
Vater glass missing	2.24	1	0		24.42	1655				.219	.7.2	1240	40	11	• •
Water glass stopped up			2261	1	110	340	2001	1	2000	1071		1000	3	13	• •
Water-glass cocks defective				1.00	1000		3	4		1	5	Line		2	٠.
Water-glass cock handle delective	2700	2	-100	****	1500	1500				1	10	2000	13	1	1
Vater-glass tube broken	****	1	3525	1077	1177	74.00	0	10	44.45		10	13.43	6		:
amp missing				2-3-1	100			1000	-2-9			200			
Vater-glass shield missing				2 < 0.1	****	20.5	-4		4911				De Se Ve	٠٠٠	١.,
Vater glass improperly located				1141		1.85	2240	-95.9	2672	2229	10.00		5	2	! • •
ubricator shields missing.	4	1		7		1	5	5			51		18		• •
ubricator shields defective		335	447	-				-	***	-45	16	17.00	Corre		<u>.</u>
njector inoperative		3344	1	2000	54.00	-	1222	1	2010	141	1	4.4 () +		1]
njector tank hose defective			1	200	198	1000		2		î	10	1	6		1.
njector feed pipe defective	132	Year	1	440.5	2242	-1-8	1191	7	-8-1	0101	12		3		
njector throttle delective	1	1000	3	2242	24.8		0	9	7	-2	16		12	2	ļ.,
njector delivery pipe defective		3	T	1	3000		1	4	1		34	1.3	8		
njector boiler check defective		2		12.	17282	-173	2	3	****		12	1.0	1	i	į.,
ab card missing		. 1	17 (2)	1	* 2.02	1	***	4	****	1	252	4	10	2	!
ire-box plug not secured.	11		0.000	1448	. (-)		ı	96	8	-	124	4	38	33	
Water-glass drip missing				11.5	2000	1		1		1			3		١.,
Vater-glass drip defective.	200	-575	+111	42.5	11.1	- 193	11.45	19.00					1	3	١.
Vater-glass drip wrongly located				5000										• • • •	
fire-box sheets corroded		-		1000				7							
Fire hose defective			- 6		2000		8151	-							
		- 6	.0	(A81	250	A.841	3	28	8	1	100	2	73	18	_
Number of defects	39	72	23	5	2	6	72	320	82	20	899	19	1.015	160	_
ocomotives owned	13	45.	2 3	212121	4	1	10	312	59		486	1	102	5.5	
ocomotives inspected	19	23	3	9	7		27	122	34		349	12	202	66 47	
														4/	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Charlotte Har. & N.	Charlotte, Mon. & Col.	Chateaugay Ore & I.	Chattahoochee Valley.	Chesapeake & Ohio,	Ches. & Ohio of Ind.	Chesapeake Beach.	Chesapeake Western.	Chesterfield & Lau.	Chestnut Ridge.	Chgo., Anamosa & No.	Chicago & Alton.	Chicago & Calumet Riv	Chicago & East. III.	
ay bolts broken				1	154	65						199		105	
igid bolts leaking 1					10	2						13		8	
lexible bolts leaking 1		22	20		33	3	333			111		9		3	1.
elltales closed 1elltales stopped up 1tay bolts not drilled 2	4	0.0		2	40	1	1		1			62	****	18	1
tay bolts not drilled 2	****			****	46	50			i'			11	****	8	t
rown sheet leakingther, sheets leaking	2000	2000	1		43	7	***	1	22.			27		9	1
irebox sheets bulged				.,,,								4			
irebox sheets bulgedlues leaking llues plugged	1				19	1 43			3			0	::::	8	
rch flues leaking 1		100	188		21	1			9		12.	100		25	
rch plugs leaking 1					8	2	2.0	1	,					6	
usible plug leakingarrel leaking.	1			5555	10						****			1	ŀ
ome leaking					21	5			***		****	4 2 5 24 8 36	****	2	1
broat sheet leaking				144	- 6	3		1				5		1	1
ud ring leakinglow-off cock leaking		****	1		21	4	***	****		****		24		7	
ashout plues leaking					42	13	111	1		****		36		7	
ashout plugs leaking 1															
Mety valve missing						30	110			10.47					ė
age location improper	333	****		I.	0	10	112	****	33			*****			1
age incorrect					1							2			
ial-glass/missing					6							17		20	
phon wrongly applied	****	4	00	OF.	31	3	***		1000	-		3		3	
age cocks wrongly located											-5.0	3			1
age location improper age incorrect lal-glass/missing phon wrongly applied phon leaking age cocks wrongly located age cocks inoperative				000	53	4			1597	****	- 448	6	2	8	1
age cocks inoperative				17	170	50		AYA?			****	90	4280	19	Ŷ
age-cock handle defective			1		4	2		****	2			. 9			
age cocks inoperative age cocks blowing age-cock handle defective age-cock drip defective				1343	8	1	22.5	****	12.50	1121		50 29 9 2 18	-844	2	
ipple missing. ipples defective or missing. ater glass missing. ater glass stopped up.		****	***		1	-	2:3			****		18		3	
ater glass missing		L.	****	2	80.	1				1	112	7			
ater glass stopped up	-945	****		F9-25	2									95.1	3
fater place cooks detective		****			174	1						9		23	
later-glass blow-off cock defective.	1		0.0		24	14			0.0			34	Civ.	8	
Pater-glass blow-off cock defective. Vater-glass tube broken. Amp missing. Vater-glass shield missing. Vater-glass shield defective.	-2	do			24	7	110	->	2			34 1	3000		
amp missing		12	15.54	-	2	11	129	17.42		***	1	- 14.55	1	1	
ater-glass shield defective					19	36						9 2	2	-	Ì
Vater glass improperly located ubricator shields missing ubricator shields defective	27	120	1000			90	15	-	35	4.		- 2	1-0	- 2	
ubricator shields defective	4		9 8 8 7	1	1	4	0			-	110	1		-13	
jector inoperative		***		iene-	14	1	7.4	- X+1	3		000	119	1125	2	
ijector moperativeijector tank valve defective ijector tank hose defective	3	***	44.65	4 4 9 9	8	***	2.25	0 Y 21	170		284	12	-0.80	4 - 7 -	-
ilector feed pipe defective				1001-	200							119	0 1 10 0 10		
jector throttle defective ijector steam pipe defective ijector delivery pipe defective ijector boiler check defective		1	1		74	×			1			10		4	
jector steam pipe defective	1011	3	1	-55	100	19	115		- 1		1	17	10.00	15	
nector boiler check defective			0.0	47.0	2.7	13.9			28.00			10	11111	-2	
ab card missingadge plate missing	48.4	10	100.00	- 1	17	7.9								3	
adge plate missingire-box plug not secured	88,00	. 1	-		T0	117				-					
ater-glass drip missing	1				-11	30						191			
Vater-glass drip missing	45.18	ETAS	1984		1	U									
Vater-glass drip wrongly located age-cock drip improperly located	* ***	10.80	1(-2	100		T)									
ire-box sheets corroded	16434	MEND	10000	200								14			
ire hose defective								- 4				71.0		i ke	
nclassified steam leaks	4000		. "	1	453			- 1				7107	3	-18	
Number of defects	18	11	7	10)	2,008	513	1	-	15			1,000	5	0/2	
ocomotives owned	-10	92	1.00	3	715	40	-1	-1	4			35%	1	30	
ocomotives inspected	- 4	19	13	1	1.184	Mā	A	1	X	-	3	-011		1	
ocomotives defective	4	17	- 22		9.79	1100	3		-1			21.44	-1	157	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Chgo, & Lake Superior.	Chgo, & North Western.	& South Bend.	& Wabash Valley	& W. Ind.	Chgo., Burl. & Quincy.	Chgo. Great Western.	Hts. Term. & T.	id. & Southern.	Chgo., Indpls. & Lovil.	netion.	Kalam. & Sag.	Chgo., Memphis & Gulf.	Mil. & Gary.	
	Chgo, &	Chgo, &	Chgo. &	Chgo. &	Chicago	Сћдо., В	Chgo. Gr	Chgo. H	Chgo., Ind.	Chgo., L	Chgo. Junction.	Chgo., K	Chgo., M	Chgo,, M	100
tay bolts broken		468			1	326	79	4	22	268	5	8	2	5	
ligid bolts leaking 1		41	100	111	000	23	2	12.53		. 8	110				Ų.
Texible bolts leaking 1	+6.0	18	- 200				1		T'i	14		10.70	100	1	
'elltales closed 1'elltales stopped up 1		103			1	158	25	2	10			33.5	T	î	
tay bolts not drilled 2 rown sheet leaking		12	2	4	15	15	.9		. 18	60			1	1	
rown sheet leaking		9	1.80	1	1	23			2	8		3.0	2	T	
ther sheets leaking. Trebox sheets bulged		69		asy.			8		13			1350	2	100	4
lues leaking 1		25	1500		100		9	15.00				2011	1550	100	
lues plugged		219	1.85	1		11	4	1		. 50	100	1			
lues plugged reh flues leaking ¹ reh plugs leaking ¹ usible plug leaking		50	250	***	100	4	-7.00	Jakes.	100	10000	X+2		120	1-35	
usible plug leaking		33		100	13	1		-5.70	1	1					
Sarrol leaking		. 24	17.85		225	15	1000	1000	1000	9	1000		Service.	100	
ome leaking		39			100	11	2050	100	3						
fired sing leaking	4.55	47	100	-	100	11	100	-310	- 7 1	1 2	Cen	12.5	1	199	15
low-off cock leaking	1	94	1		100	51	11	421	2	15	100	5550	1	4	
llow-off cock leaking. Vashout plugs leaking lafety valve missing afety valve stuck. afety valve stuck. age location improper age incorrect.		97		10.11			11	23.45	1 8	17	line.		-	200	15
afety valve missing	216.	255.00	100		150		5101		111	1528-1	100	112.		250	k
afety valve leaking		2	100	T	300	7 00 22	2	25.51	4	28					
age location improper		. 0		1	1.5			1841	1.5	-0			12020		
age incorrect		- 4	I E S S	2213	12.	3	10000	10021		1225.00				100	
ial glass missingphon wrongly applied	is i	51	2		47.0	11	2	Low	10.00		100		1		
iphon leaking		36	2	1	1	106 24	1 4	- 3 3 1	4	12	-01		VX.03		
age cocks wrongly located		19					1				100				
age cocks stopped up		. 52		4822	1.2.	19	12	2335	iv.	1.5	2			3	ľ
age cocks inoperative	612	97		24.00			7		-21	41	3				
age cocks blowingage-cock handle defective		97		****			24	I	3.00	39	1	5175	1	1	l.
age-cock drip defective	new.	11					1	1000		2			1	100	L
rip pipe missing		22	2.5	244	- 85	64	1	9-6 117	1000	-X+2+1	1000	2222	FREEZE	28.	
ipples defective or missing	+>+1	1,27-8-	1000		124	184,231	22,67			15.13	1111		2000		
vater glass stopped up			130		1000	2					10.0				E
ater-glass cocks delective		- 22				23	6			11 11	1.11		199	- X+	
Vater-glass cock handle defective.			600	-9-8	- 17	200	132	100	04	exext.	1-1-	7-71		-33	
Vater-glass tube broken	- 2.17	4	(0.5		***	63	14	-	1	-11	1.	2100	1	1	
amp missing		Divini.			1.20							100.		300	ľ
ater-glass shield missing	1	17	2	1		11.	16		1000		5	12.61	2		
ater-glass shield defective	5550	50	4	1		17	8	2	8	89	818	150	4	2	
ubricator shields missing		-9	3	2	1	279	47	177	3	10	1	2	2	1114	
ubricator shields defective	1946	2	4		100	22		1	1	30	212		2	1	
dector inoperative		9				2	3		3	- 8					
jector-tank hose defective		18	100			20		1110		4	19.	1051	12.4 11.4 1.4	510	è
nector feed pipe defective		7			100	67	14			-2	100		110		1
njector throttle defective		:30	-14		110-	80	7	2150	1.	27	1104		TOY :	110	
ajector steam pipe defective	-2-1	18		1		83	4			15				1	
jector boiler check defective		24		T.		14	2	-	3					233	
ab ourd missing	1	:30	1	1		23	7	1	9	-3	1		2	0.0	
adge plate missing.		61	4	2	2	103	(4)	2	70	23	1		1-24	1	
ire-box plug not secured ater-glass drip missing		105	103		XX **	13		DON'T I		72				2.24	
ater-glass drip defective		10				12		20.1		Ť.				200	
ater-glass drip wrongly located															
age-cock drip improperly located		1				5				1				300	
ire-box sheets corroded ire-box defective		- 4				13	-1					100		241	
nelassified steam leaks		241	1	-1		316	367		17	165	12			2	
Number of defects		2.543	27	92	16	2,560	197		130	1.144	34	11	22	21	-
ocomotives owned	1	1,639	2	3	87	1:600	310	6	150	127	147	5	- 6	15	= 1
ocomotives inspected	33.	2, 197	2 7	= 0	3	1,727	300	Ť	136	224	72	0	6	22	1
ocomotives defective	-	1,230			op	953	2119	3	74	197	116	- 1	-6	8	

Number of loc motives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not projerly drilled.

Defects.	Mil. & St. Paul.	Chgo., Peoria & St. L.	Chgo. River & Indiana.	Chgo., Rock I. & Gulf.	Chgo., Rock I. & Pac.	Chgo., St. P., M. & O.	Short Line.	Chgo., Terre H. & S. E.	Chgo, Union Transfer.	Choctaw, Newcast. & W.	ati & Westwood.	Cincinnati, Bluff. & C.	Cintl., Flemsbg. & S. E.	Cintl., Georgetown & P.	Cinti., Hamilton & Dayt.
	Chgo., Mil.	Chgo.,	Chgo. 1	Chgo.,	Chgo.,	Chgo.,	Chgo. 8	Chgo.,	Chgo. 1	Chocta	Cincin	Cincin	Clutt,	Cintl.,	Cinti.,
Stay bolts broken	642	8		55	1,018	185	1115	44	3	16	11	1		4	423
Rigid bolts leaking 1 Flexible bolts leaking 1	60		***	9	135	4		1	741	2.6	100		1.66.	.111	1.3
Telltales closed 1,	48		100	2	32	10	1997	2	2		1			1 2	40
Telltales stopped up 1	100	3		21	325 52	33	****	4	1		1	7	2	2	68 57
Crown sheet leaking	11	2		4	55	5		6			1		2		29
Other sheets leaking	54 26	4	12.2%	10	130	24	19.00	17	835	* **	a	1	1	****	83
	11	1	-3.	5	70	20			7		2			1121	25
Flues plugged Arch flues leaking 1 Arch plugs leaking 1	33	43		- 6		128	+ + = +		180	2	50,		1	1	92
Arch plugs leaking 1	67				13		7000	****	100	22.0	100	7176			
Fusible plug leakingBarrel leaking			33.			1					4.7	.,			·····
Barrel leaking	14	3	155		9	1	13,67	35.95	93	*3	1.45	-11-3	2	****	17
Throat sheet leaking	21	2000	16.00	200	9 29 75 63 175								2	112	31
Mud ring leaking	42	2	277	2	75	3	1,677	1	100	1	3	1	2		.26 50
Blow-off cock leaking Washout plugs leaking Safety valve missing.	74		***	13	175	7		4	1110	1	2		2121	7037	-87
Safety valve missing	25-125	1694	311	1121			14.55	10.55	200	-x+		****			
Safety valve stnck	1	***	121		10		116		557	-8-	117	-1-1	1911	****	2
Gage location improper	1				2	3335	1000			-11					
Gage incorrect	27	24	-	1	29	2	950	700	22.	- + 1	444	- 15.	****		
Dial glass missing Siphon wrongly applied		1	30.5	ā	144	11	100	100	100	1	157	1			13
Siphon wrongly applied Siphon leaking	- 6				43	2	28.11	4	953		9.1	-	× + ×	***	3
Gage cocks wrongly located	172	3	1.27	5	112	21	111	2	148	- 9-	22.5	-12.	1843	1	22 18 31
Gage cocks cocks inoperative	126	1	ì	6	+30	7		1		1	100				- 12
Gage cocks blowing	127 93	9	100	9 5	79	79	27.13	G	578		8		44	. 1	14
Gage-cock handle defective	1.1			1	15	2			111		105		22.22	2227	
Drip pipe missing Nipples defective or missing Water glass missing	9	1841			65	-44-	-141	9.91	715	1	X+3.	122-1	1000		
Nipples defective or missing	1	1545	100	1	- 4	1000	- 2		1101		1.5	200	2	4340	
Water glass stopped up	_1	8459			1	1		1							
Water-glass cocks defective Water-glass cock handle defective	-0.0	1	107	10	70			2		1	170			- 1	35
Water-glass blow-off cock defective.	62	4	2.5	1	65	20	1271	6	155	210	2	8.4.98 [4.50] [1000	3
Water-glass tube broken	ā	1210	1115		3			1	919	-13	113	17-0		1	
Lamp missing		2	221	70	316			1		1	2	1	22.10		7
Water-glass shield defective	253			1.15	326	5	2	6			1	-1		2	15
Water glass improperly located Lubricator shields missing	294	12	0.14	110	211	21		6		1	9	79.			0
Lubricator shields defective	161	1,551		2	113	-5		17	107	M.	1	5			- 5
Injector inoperative	12	1	1	100	10	1		4		1	11.6			- X-	
Injector tank valve defective Injector tank hose defective	12		-		24			1						185	1
Injector feed pipe defective	- 8				465	1		2			2				13
Injector throftle defective Injector steam pipe defective	18			14	105	-7		-0		3	13.	-1	-		10.
Injector delivery pipe defective	- 01		116	2	(3	1		- 6	10.	М.	1				3
Injector delivery pipe defective Injector boiler check defective	25	3	-		107	19		Ü		1			1	1	11
Cab card missing	1.4.1	- 0		0.0	214	14		1		1		- 5	2		1
Fire-box ping not secured	- 3			1.4	17.8					-					1
Water-glass drip missing Water-glass drip defective	40 21				10	- 1-1		ï		1					
Water-glass drip wrongly located		-													
Gage-cock drip improperly located	3				(17)			1							
Fire-box sheets corroded		-				100-				1	10	-		-	
Unclassified steam leaks	481				511	201		128		. 1	10.	1	11	1	32
Number of defects							4		18		15	31	30	18	2, 14
Locomotives owned	2,301		2	5.5	1.77	130	7	123	10	1	1	11	1	-	30
Locomotives defective	1,050	31	- ()	3 (1)	11.423	230	-2	-03	11	1		71	F	- 1	15
Locomotives ordered from service	88	100	-01	33.	111	18	11	24	1		11	11	- 33	-X	- 69

¹ Number of locomotives reported with this defect.
2 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Cinti., Lebanon & North.	Cinti. Northern.	Clarendon & Pittsford.	Clev., Akron & Cintí.	Clev., Cintl. C. & St. L.	Cliffside.	Clinton & Okla. West.	Coal & Coke.	Colfax Northern.	Colo, & SoEastern.	Colo. & Southern.	Colo. & Wyoming.	Colo, Midland.	Colo. Spgs. & C. C. Dist.	Columbia, Newb. & L.
tay bolts broken	8	120	9	19	1,125		4	55			69	6	5	3	1
tay bolts broken. igid bolts leaking¹ lexible botts leaking¹ elitales closed¹. elitales closed¹. elitales stopped up¹. tay bolts not drilled¹. rown sheet leaking. ther sheets leaking. irebox sheets bulged lines leaking ¹ lines plugged. reh flues leaking¹. lines plugged. reh flues leaking¹. lines plugged. reh plugs leaking¹. usible plng leaking¹. usible plng leaking¹. usible plng leaking¹. low-off cock leaking. low-off cock blowing. lage cocks wrongly located. lage cocks wrongly located. lage cocks blowing. lage-cock handle defective. lage-cock handle defective. lage-cock firp defective. lage-cock socks defective. lage-cocks socks defective. lage-co		1	1		50 16		1	****	12.7		7	1	2	111	::
elltales closed 1		8		1	106		;	5			1	2		10	
tay bolts not drilled 2		18	3	1	179	****	1	3			21	2	8	13	
rown sheet leaking	1.3.	2			66						3		5	100	
ther sheets leaking	6	14		2	115			2			12	2	4	1	
trebox sheets bulged		5		2	42	****	***	1			2	1	2		1
lues plugged		4	100		11		10	3			66		5	5	
rch flues leaking !				****						****		2,434		1,45.0	- 1
usible plug leaking			****	****	1	****	1	2000	1000	1111		117	155	123	13
arrel leaking		3	1		31	1000		1		0000	5	1	4	1	1
ome leaking	1	3	43.45	1	35		2	4			3	1	1	****	
lud ring leaking	1	4	3		113	7.1.		7.1			5	1	1		
low-off cock leaking	2	3	1	2	249			5			7	2	124		1
ashout plugs leaking 1	5	8	2	1	200			2	****		23	****	4	Di::	
afety valve stuck		187				135	57.67				1273	1.24			0
afety valve leaking	1	4834	1	£3.43	51		***	2			2		2	1	-0
age location improperage incorrect			13.53	1000	T	1	200	22	100	100				1.5	
ial glass missing		1			9								****		
phon wrongly applied					20	***		***	1		1 5	6	12		Г
age cocks wrongly located	2	2		14	04						5		2		
age cocks stopped up		1		00	37	w.		1			6	27	1		1
age cocks inoperative	13	15		4	363		****	8			27	1	15	3	Į.
age-cock handle defective		2			13	2461			141	23	1	5			100
age-cock drip defective		***			15	2500	25.25				2	10.5	200	6	-
innles defective or missing		134	15.17	****	34		1000		130	3	2	7	3	5	
Vater glass missing	L.		6	***	de lay			36			4	8	7844	1781	6
Vater glass stopped up	1011			177	106	7000		1	.96.	Free	****	***		-344	
Vater-glass cock handle defective	1.5.	0			8	200						5	1.0	111	0
Vater-glass blow-off cock defective.	5	(313		3	57	214	1-12	7	525.6	****	10	3	6	3	D
Valer-glass tube broken	55.5)	1	****	114	5						2	****		1000	h
Vater-glass shield missing		200		2	14	1			2	2122	1	2	2	1	
Vater-glass shield defective	1	27	1	1	464			44.07	****	****	150.00	257.5		4.7	
ubricator shields missing	22.00	5	6	1	22	1	1	3	i	1	1	4	23	1	1
Vater-glass shield missing Vater-glass shield defective Vater glass improperly located Albricator shields missing Albricator shields defective	1			3	73	2000	1961	640	1129		1935				
njector inoperative	177	6.99			1 2		* * * *		1			2	100	1	13
njector tank hose defective	1		1	2	44	8000	1	7			10	13		Av	Į.
ajector feed pipe defective	100	1	icex.	***	61		100	95	*2.73		15	17	10		1
pjector tank vslve defective njector tank hose defective njector feed pipe defective njector trottle defective njector steam pipe defective njector delivery pipe defective njector delivery pipe defective	. 0	7	15.15	1	253	X	1000	24	2744		17	2 1 1 2 13 1 2 1 2 3 4	3		
njector delivery pipe defective	1	3		1	58		1111	19	9521	1421	1.4	1	1	2	2.
					44	2	I	2		****	13	3	2	5	ď
ab card missing	1	5	10.6		183	2	1.40		1		33	4	1	6	12
tre-pox ping not secured	De a	10.74		3.1 8.1	20	1500	- 62.8			810	31	1	11	1	-
Vater-glass drip missing Vater-glass drip defective	10.0	100	100	2010						9.00		4			
Vater-glass drip wrongly located				2111					2711			-0.85		4424	
age-cock drip improperly located			1		- 3	-		-1-1	43.00		- 1	918	1	2254	ďθ
ire hose defective															E
nclassified steam leaks	23	47	6	21	994		3	.56		1	196	42	128	23	
Number of defects	77	351	43	73	5,054	5.	25	290	Ú	9	713	143	309	89	
ocomotives owned	13	-32	×		757	-2	2		3	4	204	50	66	146.63	
ocomotives inspected	. 44	36	×) ± 7 =		I, 410		2,7	57	3	2	2005	34	87 67	25	
ARCOTTO LIVES OPENCIAVE	13	35	1	200	1,1054		- 6	560	- 4	12	170	20	07	2.9	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Cols. & Southern.	Colusa & Lake.	Concrete Mat. Co.	Cornwall & Lebanon	Cornwall.	Cornwall Ore Banks.	Coshoct., Otsego & E.	Coudersport & Pt.	Cov., Cin. Trans. & B. Co.	Corvallis & Eastern.	Crane Iron Co.	Crane Railroad.	Crittenden.	Crooked Ck. R. R. &	Crosbyton-South
Stay bolts[broken	2			46.											
Signed holts looking 1	1			0.5511				***				-444	-+>:	****	
Telltales closed 1				*****		1000			****		2000				
Celltales stopped up 1				2	4	1100		2			1	3			
tay bolts not drilled 3	1	***		7 9	6	2	***	2	****				****	***	
Other sheets leaking				2				111						1	644
ire-box sheets bulged		2000							++++					200	
lues leaking 1	1	47.50	****	2 3					****	****		***	***	***	111
irch flues leaking 1									****						
arch plugs leaking 1	10.00	++++		448424			1 445		1000				****		985
lexible bolts leaking ' lelitales closed ' lelitales stopped up ' lelitales stopped up ' lay bolts not drilled ' lay bolts not drilled ' lay bolts not drilled ' lives leaking ' lives leaking ' lives leaking ' lives plugged ' lives plugged ' lives plugged ' lives held leaking ' lives plugged ' lives held leaking ' lives plugged ' lives held leaking ' lives held lea	****			1		****	1511	17:00	1000	****	100		A Car		201
Dome leaking		13.5				1		3.0	2000						
Throat sheet leaking	2552	1	****	100	100	1757	554	177	11 to 2				200		
Blow-off cock leaking	1151		311	2				1	1		1777	1			
Vashout plugs leaking 1		2000		10	1			1	2						
safety valve missing		12.45			1244	1-2	22.42	2+42	-+-		1100		3		
afety valve leaking		1000		2000	33	100	****	1					1	100	
lage location improper			20.00						1000			1100			
age incorrect. Dial glass missing iphon wrongly applied iphon leaking age cocks wrongly located		12.51		81855			5 11.5	1997			4,500	395	200	***	
iphon wrongly applied	T	1010	I	200001	35.70	3 9 7 1	1977	2	1000	1			3	1	
iphon leaking				1	1				2						
lage cocks wrongly located	14.11	14.15	25.81	247131	224	1107	1504	14 67	list	1-5-5	11 - 5	1 (25	1977		- 8 *
Sage cocks inoperative									1000			. 10.	12.9		
Jage cocks blowing	2				1	1		1	1			100			423
Page-cock handle delective	**15	10.50	***									***	455.1	1000	100
Orip pipe missing		X+ X+	9.21	Servery.		2 4 - 1	7 6 + 1	1144	1150		1117	100	- 1		158
Nipples defective or missing	144	1.2.	2174	200	1000	0.00			((-)		113		181	+3+3	4.5
Water glass stopped up		1874		99	10	37				22.0		1	1111	5.8 + 1	187
Water-glass cocks defective			1	esta ne				I	I						
lage cocks wrongly located lage cocks stopped up lage cocks inoperative lage cocks inoperative lage cocks handle defective lage-cock handle defective lage-cock drip defective lage-cock drip defective lage-cock drip defective lippies defective or missing lippies defective or missing lippies defective or missing lippies defective or missing lippies defective defective lippies cock handle defective lippies cock handle defective lippies cock defective lippies de		oyo-	570-					1	1				1		
Water-glass tube broken	171	1151		10000					10.	100					
water-glass thoe broken Lamp missing. Water-glass shield missing. Water-glass shield defective. Water glass improperly located. Lubricator shields missing. Lubricator shields defective. Injector inoperative. Injector tank valve defective. Injector tank hose defective. Injector tend nine defective.		7+8+		S-1-71		-	-123	01,023		ren i	111		53.5	-32	
Water-glass shield inissing	***	1 7	921				1	1	9.		- 811		- 2	- 2	
Water glass improperly located									100		-100				
Lubricator shields missing	1	2		8				-1		3				2	
niector inoperative															
njector tank valve defective		1110	101												
njector tank hose defective njector feed pipe defective	3.5	171-					- 1								
injector throttle defective	127								2						
Injector throttle defective Injector steam pipe defective Injector delivery pipe defective Injector boiler check defective	2							-2	A						
njector delivery pipe delective															
Cab card missing	1	1		111		4	1	1			Ū		3		
Badge plate missing		4		100	1	- 4		1				70	3	20	
Ab card missing. Badge plate missing. Fire-box plug not secured. Water-glass drip missing. Water-glass drip defective.		3.000													
Vater-glass drip defective															
Water-glass drip wrongly located															
Gauge-cock drip improperly located.															
Fire hose defective		- 3													
Unclassified steam leaks	1	1		1			1	11	10.			1			
Number of defects	33	20	2	109	33	10		21	/41	1		T)		77	
Locomotives owned	10	-7		13	11	0	T					- 1		175	
Locomotives owned Locomotives inspected Locomotives defective		1	1	-11	18 18	11	I		10	17		TU		100	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Crossett.	Crystal City & Uvalde.	Cyrstal River & S. J.	Cumberland & Penna.	Cumberland.	Cumberland Val-	Danias Term, Ry. & U. D.	Dansville & Mt. Morris.	Danville & West- ern.	Dardenelle & Russy.	Dardenelle, Ola. & Sou.	Davenport, R. I.	Dayton & Union.	Day, Leb. & Gin.	damare
tay bolts broken ligid bolts leaking ' lexible bolts leaking ' elitales closed ' elitales stopped up ' elitales stopped up ' lay bolts not drilled ' rown sheet leaking ther sheets leaking ther sheets leaking ther sheets leaking ' lues plugged rech flues leaking ' lues plugged rech jugs leaking ' lues plugged rech jugs leaking ' lues plugged rech glues leaking ' lues plugged rech jugs leaking arrel leaking owne leaking ' hroat sheet leaking hroat sheet leaking dow-off cock leaking afety valve missing afety valve stuck afety valve stuck afety valve stuck afety valve stuck age location improper age incorrect fal-glass missing iphon wrongly applied tiphon leaking age cocks wrongly located age cocks inoperative age cocks inoperative age cocks inoperative age cock shoped up lage-cock drip defective rip pipe missing ipples defective or missing vater glass missing vater glass sussing vater glass stopped up vater-glass cock safefective vater-glass cock safefective vater-glass sube broken amp missing vater glass shield defective. vater-glass shield defective. vater-glass shield sefective undertor shields missing where glass improperly located unbricator shields missing where glass improperly located unbricator shields defective niector tank waive defective niector tank vaive defective niector tank vaive defective niector thout le defective niector thout le defective niector thout le defective niector delivery pipe defective niector boiler check defective niector boiler check defective age-cock drip improperly located age-cock drip improperly located ire-box plug not secured vater-glass drip wrongly located ire-box sheels corroded		7		1		2		1444	25.64	18	0.61	14	60	12	16
ligid bolts leaking 1	***	****	11.51			i	15.55			****	****	****	- 0		
elitales closed 1,					1			1	****				2		
'elitales stopped up 1	1		1		1	12	4,40		6	1	12.50	1	10		1
rown sheet leaking	****	177		3	0.0	1	900		9.0					5.44	
ther sheets leaking				7		4							4		
Trebox sheets buiged		2				1		1	1	71.7	4284	1		27	1
lues plugged	1		7					20		1	1			2	
rch flues leaking 1		****			,		4.8.8.5			21.25	+++*			****	1
usible plug leaking	****	157		1						****					l
arrel leaking		2		1	43.49						1	cai.	2		17
broat sheet leaking			2			1				4000	7144		1	4	
fud ring leaking													1	2	
low-off cock leaking						7.75	1		1,011	22.02	1		2	1 2	li.
afety valve missing		120		21.1	30		200	27.51	****			37.7	*****		
afety valve stuck				***	48.43	1740				No. a	and.				
afety valve leaking			1			12+4	****		0000	2500	****		2	I.P.	l.
age incorrect								200						1	1
ial-glass missing		***				1848				2000	4				ı
iphon wrongly applied	1	1	.00	3	1	2	****	4,44,4	1	1	1	3		T.	+•
age cocks wrongly located		1311							4250				*****		1
age cocks stopped up		1			44.45	4924	1581	4471	2	4 5 5 4	4000	1	1		
lage cocks blowing		3		100		T	1	13.0	2	1000	2	in.	16	7	L
age-cock handle defective		1	****	22.12			100-			com	1			400	L
age-cock drip defective			1			****	300	1	1 5 7 0	100	112.5	4161	*****		L
ipples defective or missing					-777				13.76				****	1	
Vater glass missing	5000	12.42	9,85.	2	2	+9+0	1936	12226	4	100	1		X-X	3	
Vater-glass cocks defective		1	i	300	CIS	11.2	100	1.00	133	1	1	1010	2	1	
Vater-glass cock handle defective		+=20			***					-15				500	
Vater-glass blow-oil cock defective	2	2	1			1557	1		41.11		T	3707		1	ľ
amp missing	1111		1	8						S		20.74		100	
Vater glass shield missing	1212	1		1116	AV21		117	glib	6111	110 45	in xi	6	10	5171	
Vater glass improperly located		131	1130	500	200	000	1.0			- 1 1			100000	(2.1	
ubricator shields missing	3333	1	1	2	3			. 1	5	1	1	3	5	2	10
ubricator shields defective	3773		***	1.55	11	11.11	1	-1111			181-	100	4	4	
njector tank valve defective		1	î	1593		200			4010	111.84		Lug-	10 8 18 9	1000	
njector tank hose defective	9100	10.0	2	1241		47.00	1			(×-		1	1000	1	ľ
njector feed pipe delective	100	1333	2	22.50	T	2			3		1		4	2	
ector steam pipe defective	3378								1	1	1		3	1000	ŀ
njector delivery pipe defective	1200		* 8.51		1		1	i							ŀ
ab card missing	2		2	-2-0					0.00	2	1	1	6		b
adge plate missing	1	2	2	12.42	2	3		11.50	Hy-	1	2	4	-5	1	4.
Vater-glass drip missing	1,581	0.885	28.25	27.00			-11-1	111	-1	- 15	1010		101100	100-1	
Vater-glass drip defective															
Vater-glass drip wrongly located	0111		1551												
															(.
ire hose defective	6	2 4 3	*1	The street			100 E	-	0-9	154	1	191	19		B
nclassified steam leaks	100		10		3	2	i)		19.	1	3		13	6	I
Number of defects,		26	39	20	17	.88	12	-26	35	28	-21	40	163	2.6	8
ocomotives ownedocomotives inspected		7	J	25	2	65	2	-2	19			39		-5	4
ocomotives inspected	2.2	5	2	14		39	- 3	4	34	4	2	19	22	11	5
ocomotives defective		4	2	9	4	201	11		17	-3	0	13	21	2	3

Number of locomotives reported with this defect.
Number of locomotives reported with this defect. Also includes stay bolts not properly drille 1.

Defects.	Delaware & Northern.	Dela., Lacka. & W.	Dela. River & Union.	Delaware Valley.	Denver & Rio Grande.	Denver, Boulder & W.	Denver, Laramie & NWn	Denver, NWn. & Pac.	Depue & Northern.	DeQueen & Eastern.	Dermott, Selma & No.	Des Moines Union.	Detroit & Mackinac.	Detroit & Toledo S. L.	Datroit Boy City & W
tay bolts broken		180	5		570			3		1			7	2.2.	
igid bolts leaking 1		22			51			2000					Citi	****	
lexible bolts leaking 1elltales closed 1		27			12	1000									130
elltales stopped up	100	62	1		204		1	4		-	core.	1			13
tay bolts not drilled 1rown sheet leaking	•••	6 27	1	100	123	23.34	1577	****	1550			233	1	100	
ther sheets leaking	1	95			77					1	1115	3.04			
irebox sheets bulgedlucs leaking 1					108	2			1.000		000		1443	1,474	24
lues leaking 1		20			48 751	1847	5750	****	****	4	****	6	11		0
rch flues leaking t		*****	1.01	200		000	2266		40.00	exxe	8-8-	***	1711	1788	30
lues plugged rch flues leaking ¹ rch plugs leaking ¹ rch plugs leaking ¹ usible plug leaking					192241	1124	1110	* * * *	4+4+	10.00	A+X+	***	****	****	11
usible plug leaking	***		gui.		.51	200			1201	1010	2020	2.44			3.5
ome leaking		9.			41										
broat sheet leaking		22		142	104	17.12	8-12	4460	-1				3.44		
low-off eack leaking	1	92	3		-60	****	1			SHOW!	1101		000	000	
ud ring leaking		22	2222	200	- 91	2222	4266		40.80	1111			1	3350	
afety valve missing			1212		8,48,171	-1-1	2533	1120	0.71	67.65	8-7-	2080	1130	1,000	50
afety valve stuck		1			1.1										
age location improper		*****			751137	alana.						1000	1.00	2161	2.4
age incorrect		NAKAYA	8.8.	8 2.4	1	1711	1722	1101	6-5-	4 144	12.12			3334	**
Pial-glass missing		11	2-2-	3-0	2	2	1		22.51	101	1	1010			
iphon wrongly appliediphon leaking		45			34	- 3-1 -	1 100	64	-(=×+	1	V-X-	518	1111	545	
age cocks wrongly located		3	100		5	1	-7.7.		15.10		717	1	2-14	1000	0.0
age cocks inoperative		10			19		1	1				1010		2000	×.
age cocks blowing		39	1	1200	79	-	1	1		3		191-		1.04.0	2.2
age-cock handle defective		2	1191								1				
rip pipe missing	20.	24	2211		15										
Vater glass missing	100	210.4	3.5	200	33	XIII + 5	25.79		Y	95 X =	C = X =	0.400	200		
Vater glass missing Vater glass stopped up		Y	4	100	20		100		1.71		101				
Vater-glass cocks defective		11		1000	40		1							II Xin d	
Vater-glass cock haudle defective		22	1 - 5 1		60			188	179						
Vater-glass blow-off cock defective			69.94 69.93		1	0.000	1313								
amp missing		*****	1000		12		16.74	11.0	1		19.11	1 0			
Vater-glass shield missing		61			1 0			1884	1	200	10	4.	510		
Vater-glass shield defective									1818					200	
Water glass improperly located		56	ï	1	10			1	4,-00-	1	1	3	14	1401	
ubricator shields defective		7.9	1011	1-7	4	-	1		200						
njector tank valve defective	. 22	XIXIG	2411			101.5	Lexi.	0.5	1115					1000	
nlector tank hose defective	100	10	2001	244	54	3	4-2-	1	***** **** **** ****	-	5 5 Y X		1700	11/2	
njector feed pipe defective njector throttle defective	2	22	2	300		1	1	T.	X-X-	1	2-11	5.02			
njector steam pipe defective		50		1000	0.4	1	2.						1000	100	
njector delivery pipe defective	13.4	18	V	7	60	1.1	1							11.5-1	
ab card missing		8	2	v	8	1240				n	-11			-3.	
ladge plate missing	112	70	1	***		0.11	1			- ii	22	1			
Vire-box plug not secured		1 2	2740	E Re	44	YHX+	1-8-	X-X:		1.00	1	-0			
Voter class drip defective		4					1610		1211				10-6-1		
Water-glass drip wrongly located		2000		100										(-)	
Jage-cock drip improperly located				100	0.77	100			Lan.						
ire hose defective	- 24	5-370-3	A Fee	0/2		1819	1030						-	-	
Inclassfied steam leaks	214	247	1169	1	811	2	1	3.		0.0			1		
Number of defects	4	1,465	21	4	4,000	12	1.3	20	60	13	11	17	37	8.	
Locomotives owned	8	759	2	1	550	5	7.5	42	1	3	0	7	103	34	
socomon to a a more a large and a second														1.0	
ocomotives inspected	4	502	3	1	517	3	5	8	2	8	2	111	-21	1	

¹ Number of locomotive reported with this defect.

Number of locomotives reported with this defect.

Also includes stay bolts not properly drilled.

	Detroit, Toledo & I.	Diamond Alkali Co.	Diamond & Caldor.	Doniphan, Kensett & S.	Donora Southern.	Dover & South Bound.	Drummond & S. Western.	Dry Fork.	Due West.	Duloth & Iron Range.	Duluth & N. Eastern.	Duluth, Missabe & N.	Duluth, Rainy L. & Win.	Duluth, S. S. & Atlan.	Duluth Union D. & Tran.
Stay bolts broken	52				2	4		2						5	
Rigid bolts leaking 1	2	****	des.												
Telltales closed 1	11														
Telitales stopped up 1 Stay bolts not drilled 2	11	****			12	1			-7.62			2		1	200
Crown sheet leaking	10									0			****		111
Other sheets leaking	15				1										
Firebox sheets bulged Flues leaking 1	8	7.5	1		1		112	10.1	22.	1	****	****	****		12.0
Flues plugged	28	3 22 2			5			10		4					15.
Arch flues leaking 1							••••					00			4-1
Fusible plug leaking	200.00			2000						27.42		2524			
Barrel leaking	0	1417				1.44	12.4			15334					
Throat sheet leaking	2		X					200							2
Mud ring leaking	8	****			4	****			****	+ + + +	***				
Dome leaking. Throat sheet leaking. Mud ring leaking. Blow-off cock leaking. Washout plugs leaking ¹ Safety valve missing. Safety valve stuck. Safety valve leaking. Gage location improper. Gage incorrect. Dial-glass missing.	25	****			ï			1111		1	****				110
Safety valve missing	1			140.6				-00		43.45					44.
Safety valve leaking	4		****	****	111	***		1111	3555	*X-7*	1777	1071	****	****	
Page location improper							2			-00-	200				75
Jage incorrect									2000	100		****		****	
Siphon wrongly applied	3		3	1	1	1			1	1	2	1		2	1
Siphon leaking	13			1	2	••••	99	****	1					4.00	150
Gage incorrect. Dial-glass missing. Siphon wrongly applied. Siphon leaking. Gage cocks wrongly located. Gage cocks stopped up. Gage cocks blowing. Gage-cock handle defective. Gage-cock drip defective. Drip pipe missing. Nipples defective or missing. Water glass missing. Water glass stopped up. Water-glass cocks defective. Water-glass cocks defective.				-4-4		1000			1	1	****		1	3	100
Gage cocks inoperative	91	5,000				1		****					2	1	
Gage-cock handle defective	2			223		1111		3.5			1		2		2
Gage-cock drip defective				**.**						5557		****			
Nipples defective or missing				****			****			32					17
Water glass missing	8	1			10				2		****	44.0	in.		
Water-glass stopped up Water-glass cocks defective	16		75.7	****	Ť	110	1333	155	****		15000			1111	
Water-glass cock handle defective											1			13.3	7.
Water-glass blow-off cock defective. Water-glass tube broken	14	****	***	****	1		****	****	3000	****	****	4			100
Lamp missing												0.00			1.5
Water-glass shield missing Water-glass shield defective	16						1	22.0	44-0	22.44	2	4445	1		1.00
Water glass improperly located	10	X							100	100	-		100		
Lubricator shields missing Lubricator shields defective	13	40.0	3	1	6		2	2	2	.9	20	nee!		2	
	1	1	1	****	1	123	113	1111			1212		****	230	
njector tank valve defective	1		2576		****					-0.44					
njector tank hose defective njector feed pipe defective	22	377	***	1		****	33	200	1	***	1000	-C- x -	1111	Sek.	
njector throftle defective	32		14.1	****	2		1241	2	-î	19.55		311			
Injector steam pipe defective	14	200	17.18	-424	3				1				****		***
njector delivery pipe defective njector boiler check defective	12		100	 i	4		20.0	100							
Cab card missing	14		3	1		1	2		2	3800	5	7	1	1	
Badge plate missing Fire-box plug not secured	1														
Water-glass drip missing Water-glass drip defective	1		rex					22.24	20.25	-5 va	24.24		1111		
Water-glass drip wrongly located		1000			4	48.21	34.55	3.55				****			
Water-glass drip wrongly located Gage-cock drip improperly located		1254					2	100		100			17.51		
Fire-box sheets corroded Fire hose defective Unclassified steam leaks	*****	777	3		****	****		mo	100	1):00	158.50	2111			
Unclassified steam leaks	88	130	4	2	11		5557	2	2	4324	20.10	111		****	
Number of defects		2	17	8	_	-8	9	18	17	25	15	15	7	16	
Locomotives owned		1	4	2	12	-		6	-	104	-	110	12	85	-
Locomotives inspected	153	1	3	2	19	8	01.2	9	3	21	5	14	12	24	7.07
Locomotives defective	106	1	3	0	19	0	0	5	3.	13	- 5	13	7	11	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

															-
Defects,	Dunkirk, Alleg. V. & P.	Durham & South Caro.	Durham & Southern.	East Berlin.	East Bd. Top R. R. & C.	East Carolina.	East Jordan & Sn.	East Tenn. & W. N. C.	Eastern Kentucky.	Eastern Ry. of N. Mex.	Edgmoor & Manetta.	El Dorado & Wesson,	Elgin, Joliet & E.	& Little Kanawha.	Elkin & Allegheny
	Dun	Dur	Durl	East	East	East	East	East	East	East	Edg	EID	Elgir	4	Ellein
Stay bolts broken Rigid bolts leaking 1 Feltitales closed 1 Feltitales stopped up 1 Stay bolts not drilled 2 Trown sheet leaking Trelitales stopped up 1 Stay bolts not drilled 2 Trown sheet sleaking Tre-box sheets bulged Flues leaking 1 Flues leaking 1 Flues plugged Arch flues leaking 1 Arch flues leaking 1 Arch flues leaking 2 Brustle plugged Arch flues leaking 3 Brustle leaking 3 Brustle leaking 4 Brustle leaking 4 Brustle leaking 5 Brustle leaking 6 Bow-off cock leaking 7 Brown off cock leaking 8 Blow-off cock leaking 8 Blow-off cock leaking 9 Blow-off cock leaking 9 Blow-off cock leaking 9 Blow-off cock cock leaking 9 Blow-off cock leaking 9 Blow-off cock leaking 9 Boge location improper 9 Boge location improper 9 Boge location improper 9 Boge cocks wrongly located 9 Boge cocks wrongly located 9 Boge cock showing 9 Boge cock showing 9 Boge cock showing 9 Boge cock showing 9 Boge cock fip defective 9 Boge leas missing 9 Boge cock drip defective 9 Boge leas stopped up 9 Boge cock showing 9 Boge cock handle defective 9 Boge sock showing 1 Boge cock drip defective 9 Boge cock showing 1 Boge cock showing 2 Boge cock showing 1 Boge cock showing 2 Boge cock showing 3 Boge cock showing 3 Boge cock showing 3 Boge cock showing 4 Bog		-								13	-		-	130	F
Rigid bolts leaking 1	7.5	2.44	3	1000	****	3000	5	9	****	1	1200	100	82		
Flexible bolts leaking 1		1		Las	1-21			1.5		10.		I.J.			13
Felitales closed 1	1		1					4		1111	1177				43
Stay holts not drilled 2	1	2	4	4000	1			1	****	9	1.00	****	11		
rown sheet leaking		1	5	****		****	1011		****	****	Con	100			
Other sheets leaking										1			5		10
Fire-box sheets bulged		****													
Fines placed	+++	22.55	4.72.		14.50			1 7			7757	24.4	2		78
Arch flues leaking 1		XXX.								***				13.0	100
Arch plugs leaking 1			YAVA						2	-	6244	-144	425.55	1.2	10
Fusible plug leaking									400	4,000	1,000	1,000	*****		
Dome leaking		10	***	1717	2.4.5	4.55			00		40.00		*****		
Chroat sheet leaking	12.00	2		****	1			5507	***	44.77	****	****	*****		+ 4
fud ring leaking		1	130					100					2	111	100
Blow-off cock leaking			24.84			-844		1211	-						12.
Washout plugs leaking					1					$\star [*,*]*$	40.00	40.00	3		
lafety valve stuck		15000				25.3	17.55	****	34.85					- X	
afety valve leaking	111	7.00	100	1833	1111	X***	****	1155	5.00.0	1050	100	200	3		*
age location improper			6000		0101	1001			2227						10
lage incorrect						-515	149.	2.272	3000			1442	10012		
hal glass missing	++++	1									4-4-	****			
iphon leaking		1	16.7	1	1		47.41	439.1	1	. 4			- 47	1	111
age cocks wrongly located			100	No. 1		3000	1110					****	1		100
lage cocks stopped up			20.00	(In Vi	vivi	Yeal	2411	1.0.		4 4 4 4	1		2		
lage cocks inoperative	1000	45.65	17.85	222	2.91			2.50	40.30	1	8 - 5 2	1241	1		
lage-cock handle defective				500	1	2200		1	1	* * * *	1	***	1	1	. 5
lage-cock drip defective		1		1777		5.55		1011							100
Orip pipe missing		1	4 + 3 =							2			*****		100
Sipples delective or missing	+111	430 5	43.95		sali	45.55	12.14	9.25	1411	11.60	***	1101	1	-1-3	
Vater glass stopped up	3551	1	117-		1	-		9	***	-11.	1	1142	100591		- 5
Vater-glass cocks defective	1000						111		110					13	100
Vater-glass cock handle defective		12.00	1000		14.0	DO- VI				64					150
Vater-glass blow-off cock defective.		100			4.80		20.50				5590	V = [1,1]	1	3	100
amn missing	1000	1	414.9%	9-41	1244	***		2		1220	****		100,000	-55.	
Water-glass shield missing		1.0		10000	12.00	1				3	8 - 2 /		1	Ï	
Vater-glass shield defective		100	Lane.		6.	12.22			1550			1	9	· con	100
Water glass improperly located	112.52	****	-	10.51	Nege	4-1-	41.00	151			1-51				544
ubricator shields defective		15	79.00		1.1	3	YEX	1	- 1	2	1	3111	A	1.5.43	**
nubricator shields defective neterior inoperative njector tank valve defective neterior tank hose defective neterior tank hose defective neterior throttle defective neterior steam pipe defective neterior boiler check defective sab card missing. Nade plate missing. Nater-elsex drip missing.		2120	20.0		22.44	2000	3010	1000	2000			2221	land and	1	100
njector tank valve defective									1	2				.000	
njector tank hose defective	200	4		444		1000			1	200			Section 1		100
njector throttle defective	21.55		28 811	-21	Total C	1000	15.50	10.50			1-7		6	1	-
njector steam pipe defective		20.00				10.00	1443	***		1000	1		Avr. Co.		E.
dector delivery pipe defective	100	22.12	2222	-ail	1110						Value	1111	111115	01.1	
ajector boiler check defective	13.5	1000		200		-					1-5	-49	1	44.51	
adge plate missing	14 140	4			9	1	-1	3	1		1	1	20	1	
ire-box plug not secured	1000	4	22.25	10000			1010	1211	- 0	1011			0		
ire-box plug not secured			4.15		1000		1	2-7-		1		1	ED-XY)	- X - X	
Vater-glass drip defective		4 4-4			1981		1111				1116		2	avel	-9
age cock drip improperly located	12.523	-011	20.00		1919										
ire-box sheets corroded	/1000	100										-		300	
Vater-glass drip defective Vater-glass drip defective Vater-glass drip improperly located Jage cock drip improperly located Jire-box sheets corroded Jire-box sheets corroded Jire-box sheets corroded Jire-box sheets corroded		1000													
nclassified steam leaks		02.87	Ple ve	Cox		-1	Y-X1	1010	ō	12			11	13	
Number of defects	-	13	_		15	9		40			02	-5	213	24	
ocomotives owned	=	- 2		-	11	4	-	-0	1	-	=	=	24%	- 4	
ocomotives inspected	. 3	13	1.0	2	10	To	3	8	24.04	101-	Ī	3	138	4	-
Lo cmotives defective Lo omotives ordered from service.	2	7	7	1	6	4	T.	6	0	0	10	1	20	9	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

INTERSTATE COMMERCE COMMISSION.

Defects.	El Paso & S - W. Sys.	r.lwood, Ander- son & L.	Emporturn &	angland & Clear Lake.	Enterprise.	Erie.	e vanseffe & Terre H.	Lvansv., Subrbn.	Farmer's Grain & Ship.	Ferdinand.	wernwood & Gall.	Fitzgerain, ociila & B	Flint Riv. &	Florence & Crip-	Florida, Aln. &
tay bolts broken	34					822	7						1777	6	
ligid bolts leaking 1	6			3375		21	2000	***			+ * * *				133
'lexible bolts leaking ' 'celltales closed ' 'celltales closed ' 'celltales stopped up ' 'tay bolts not drilled ' 'rown sheet leaking 'ther sheets leaking 'ther sheets bulged 'lues leaking ' 'lues plugged 'lues leaking ' 'lues plugged 'lues leaking ' 'lues plugged 'lues leaking ' 'osible plug leaking 'arrel leaking 'lues l	1	****			.03	71			44.00	-5-4	000	43.44	4757	0.00	244
Celitales closed 1	78	1		****	2534	136	1.0	.,.,	****			1	4.00	8	
tay holts not drilled 2	22	3		1		84	1307	333	233	200	1			1	100
rown sheet leaking	6			1		52				100		1000		1.00	50
ther sheets leaking	4	·vi.				92									
irebox sheets bulged	112	***		1		4				,		1			- 22
lues leaking 1	7					29	13.00		vice			45.50		See.	160
lues plugged	****	****		****		30 7	2000		13.00			4	25.45	****	
Posible plag leaking	****	12.00		1111		2	1000				12.00		->	77.53	100
Sarrel leaking	1	1000		0.11		44	0.01	100		****	100	1000	1000	1000	133
Oome leaking	1	1223	1			55	1000			10.7	1	111	100	1000	155
hroat sheet leaking						11				11.					1.0
fud ring leaking			200	****		129		1200		49.63		2229	-27.		100
llow-off cock leaking	3	2224		1101		73	1011	1,1,21			444		55.40	4.643	
vasnout plugs leaking	9	* 4,44	****	1	9,000	39 34	3485				200	1995			155
lage logation impropage						2		****	****	1	419.8	1717	255		
age incorrect	1	100			755	6	2075	1083	1000	257	158	11.5	1	55.73	
ial glass missing						37	1000		****			XX	1.0	100	150
phon wrongly applied	2		1	901		16		1000		29.2		1	2010		1
phon leaking	11	2424	1	1961	40.42	88					42.00		5.445	3	
age cocks wrongly located	1	2.44		1191	40.00	5	3784	,					1		
age cocks stopped upage cocks inoperativeage cocks blowing.	5		1	1	****	39 98		130	***	3	200		1257	1	2.8
age cocks moperative	7	1111	2241	40.00	7771	177	2.55	4	***	* * * *	1.524	4 ***	2355		- 5
age-cock handle defective	1		12003	1	5555	- 22	****	75.43	1500	9	* > 5.0				
age-cock drip defective				ì	122	6	100	Lane.			100	100	1.2	1	100
rip pipe missing ipples defective or missing vater glass missing	1	2242		10121	4244	66		1	in	43.0	1000			1	1.0
ipples defective or missing	22	44,84	4.50	6441		7	31.5							2 44 6	100
vater glass missing		****			* * * *	1 3		2	0.00	19.50	1000	1	1	9	
Vater glass stopped up	3		22.00	1		33	5.44		1	1	2074	1555		1500	2.5
Vater-glass cocks defective Vater-glass cock handle defective Vater-glass blow-off cock defective Vater-glass tube broken amp missing	2	531	5.45	1	N. C.	6	100	12.	15.07		***	83	1	100	10
Vater-glass blow-off cock defective.	2		1			34	1.5	125	1	29.43		1000	1000	2	m
Vater-glass tube broken	1	114	2260	(244)	11.5	.5	1724			19.24			22.44	2000	l.
amp missing	2-2	9.85.5			11.20	1	1275	3.0							100
vater-glass shield missing	100		1	1	1	5		-3.0	17.40	40.50	1	25.5	100		124
water glass shield missing Vater-glass shield defective Vater glass improperly located Abricator shields missing Abricator shields defective	1.9	2	2000		1500	1	5550		1775	13/22	1000		****	250	2.5
abricator shields missing	1	****	2	T.	232)	38	3150	3	1255	4	1	338	***	1	+3
ubricator shields defective					1000	14	100					1	2.0		
						21		11.44	1111		beek			2	100
ijector tank valve defective	14	1225	12223	2000		1	33.33	13.00	100			800	1	2000	
lector tank hose defective		0.000		1151		20	40.00	200	1000			100	4000		14
plector feed pipe defective	11	3-10	1	1		30 86		1		1000				1000	
nector througe defective	2	2575	-	150	* * * 2	111	* 5 4 -	1	4000	4 1		68.	i	2	- 9
lector delivery pipe defective				5.5	3300	21		1	0.0		1000	1		14	1.0
jector boiler check defective			1	100	01.5	69	1211		1000	1	100	10.1	16.2	1	100
ab card missing	2		1	1	1	11	12.71	1	11.00		141				
adge plate missing	. 1	2	1	1	1,22-	384	4.50	1			12.00	1	i	3	15
ire-box plug not secured	104	2.4		1000		2	1988		1.4	2	1212	STAT	1889	2500	100
a)ector tank hose defective a)ector feed pipe defective a)ector throttle defective a)ector steam pipe defective a)ector delivery pipe defective a)ector boiler check defective a)ector boiler check defective a) card missing a)dre plate missing ire-box plug not secured vater-glass drip defective age-cock drip improperly located nclassified steam leaks	0	150	1000	1000	FOT	4						C+3.5		1	159
age-cock drip improperly located	555	11 11-5	15 8 7 5	17.5	1010	5	Est	100	D-X-	1000	F-X-	7-2	X-9.	100	1
nclassified steam leaks	121		4	1		844	10.00	3	56.15	2		100	1	33	100
Number of defects	558	-8	17	12	2	4,074	7	14	-	14	2	9	6	73	Ė
	150	2	9	1	-	1,403		N	0	-	2	-0	2	11.7	1
ocomotives owned	112	5	5	1	ĭ	1,422	5	3	1	2	3	2	1	31	1.3
ocomotives defective	109	5	4	i	i	1,076	î	2	Î	2	T	1	1	24	
ocomotives ordered from service	3	0	0	0	0	95	4	0	0	2 2	0	0	2	0	

Number of locomotives reported with this defect
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 Also includes stay bolts not properly drilled.

Defects.	Florida Central.	Florida East Coast,	Florida Ry.	Fonda, Johnstown & G.	Fordyce & Princeton.	Ft. Smith & Western,	Ft. Street U. Depot.	Ft. Worth & Denver C.	Ft. Worth & Rio G.	Ft. Worth Belt.	Fourche R. Val. & I. T.	Franklin & Abbeville,	Frederick.	Freeo Valley.	Gainesville Midland.
Stay bolts broken		56		17		17	7	60	1	3				1	
Rigid bolts leaking 1		3	1811	1177	****	1		2	1		1	1011	12.		
Telltales closed 1		12				G.	****	200							1
Stay bolts not drilled 2				****		1		100	1		1			1	
Crown sheet leaking					****	5	1261	2	1 3	11.5	100	195.8		1721	110
Firebox sheets bulged	741.00							3	2			1			
Flues leaking 1		5			1	2	57.97	3	5	4	1			7177	1
Arch flues leaking 1		000	1111					2	1 4 4 4			- 5-3			****
Rigid bolts leaking ' Flexible botts leaking ' Flexible botts leaking ' Telltales closed ' Telltales stopped up ' Stay bolts not drilled ' Crown sheet leaking. Other sheets leaking. Firebox sheets bulged. Flues leaking ' Flues leaking ' Flues plugged. Arch flues leaking ' Arch plugs leaking ' Arch plugs leaking ' Busible plug leaking. Barrel leaking. Throat sheet leaking. Mud ring leaking. Blow-off cook leaking. Washout plugs leaking ' Salety valve missing. Salety valve missing.									1224	A.Kad	1.00			****	-×-,
Barrel leaking.	*****					2			-2.0						
Dome leaking	2				1	2	.80	4	2						
Mud ring leaking		11	1001				1101	1,500	1		Tier t	1127	TERT.	25.84	
Blow-off cock leaking	*****	1 2	1121		***	3		17	1	2	1	-4-X	- (+)	100	
Salety valve missing			444	1948	7.7.	1111	100	100	1111	1911	1000	1000	15.45	5111	2521
Safety valve stuck		1.5				9	1544	180	1555	45-45		1.4 1.0	1000	100,000	100
Gage location improper	3000				200		100		100		1841	24.0			200
Gage Incorrect	10000				12.51	1711	1111		11.0	1511	5 = 0 1	1	1171	777	Chie
Siphon wrongly applied	1				1	1		3	5	1	1	1	2	122.0	
Siphon leaking	******	2	-52.0	10.00	15.51	1	25	4	2172	2212		1410	14(8)		1
Gage cocks stopped up		5				2		8		1					3
Gage cocks hlowing	1	5	1 2 4 9	1	100,00	9		11	3	4	178	1585	1581	1989	000
Gage-cock handle defective		3				(10)	1	2	(8.8	10.51	GE	5181		(+31)	123
Gage-cock drip defective	****	13.00	13.61	100	- ;	9	1100	1 7	3	9	1.81	1171	1-11	133.0	
Nipples defective or missing.		12.00							11.00	5.	1.50		22.1		1212
Water glass missing	1	14	3					22.37						18	- 6
Water-glass cocks defective		9					2.1	3	10.00	1142	100		12.42		1014
Water-glass cock handle defective. Water-glass blow-off cock defective	****	6	180		4 4 1 1	9		4	3		(+×2	(+2.11	1171	-;	1225
Water-glass tube broken	1		17.1	11.00	241	0.0		1411			1010	15-91	54.	1011	2
Water-glass shield missing	135.55	741	0121	3.4	2821	12.0		-8	9	4	300-		1000	1	15.4.5
Water-glass shield defective	11111				1	1		12	1	-2				1	0.0
Lubricator shield missing	1	î	2	1111	1	1		3	3	2	ï	1	2		1
Lubricator shields defective	STREET	1511		X-1		1510						- 1	14.7		ex.
Nashout plugs leaking ' Salety valve missing. Salety valve stuck. Salety stuck. Salety valve stuck. Salety stuck. Salety stuck. Salety valve stuck. Salety stuck. Salety valve stuck. Salety stuck. Salety valve stuck. Salety val	1	1	ï	219	(4.0)	X-X	-11	1		-	111	141	211		1974
Injector tank hose defective	10000	1	2			2			1	1				- 1.1-	3
Injector feed pipe desective		13	1	777	-	6		5			1				2.5
Injector throttle dedective. Injector delivery pipe defective. Injector bolier check defective. Cab card missing. Badge plate missing. Fire-box plug not secured. Water-elses drip missing.	1	1		1	1	10		3	1	2	1				
Injector boiler check defective		4	101	5+1			10.50	2	1	1	121				0010
Cab card missing	1	3	141	5	2	7		1	2	3	1	1	- 1	1	-
Fire-box plug not secured			177		2				-1-1	-	1				4
Water-glass drip missing Water-glass drip defective Water-glass drip wrongly located Gage-cock drip improperly located. Fire-box sheets corroded.						-		10						1	
Water-glass drip wrongly located	000000							2		15	1				
Gage-cock drip improperly located.		ā	(=)		101	-4.	-		-						
Fire hose defective	2440	75	-1												
Unclassified steam leaks		41		0	3	200		61	2		J				7
Number of defects	13	225	9	31	14	(7.1)	8	287	50	45	10	4	ā	101	17
Locomotives owned	3	50	4	T	1	100		88	L	y	-	ij		T	1
Locomotives inspected	2	0.1	0	12	4	53-	1	10%	12		3	7		2	17
Locomotives defective	0	71	3	1	I	309	1	SI	10		8	T	1	4	W.

Number of locomotives reported with this defect.
 Number of lomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Galesburg & Great E.	Galveston, Hrsb. & S. A	Galveston, Houst. & H.	Galveston Wharf Co.	Genesee & Wyoming.	Georges Creek & Cum.	Georgetown & Western	Georgia & Florida.	Georgia Coast & Pled.	Georgia, Fla. & Ala.	Georgia Northern.	Georgia R. R.	Georgia Sn. & Fla.	Georgia SW. & Gulf.	Oldoon & N. Island
stay bolts broken		114		1	3		21	1	3	12			17		
Cipid halte leaking I		14											3		
Plexible bolts leaking 1 'elitales closed 1 'elitales stopped up 1 tay bolts not drilled 2 tay bolts not drilled 3	1	1	1111	18.7				177	1			2	122	-0.	
elitales stopped up 1		33	2	8	2		1	4	5	4	1	10	8	1.30	
rown sheet leaking		22			i	****	****		****	2	***	1	2		9
ther sheets leaking		18		1			1	1	133	2		2	2	1	
rebox sheets bulged	22.00	2										1	1		
lues leaking 1lues plugged			1	1	1	1	11	*810	5	17	8	5	2 5		
															15
ren lines leaking 'reh plugs leaking ' reh plugs leaking arrel leaking ome leaking hroat sheet leaking ud ring leaking low-off cock leaking. 'ashout plugs leaking ' sahout plugs leaking ' sahout plugs leaking ' fety valve missing fety valve stuck fety valve stuck fety valve stuck lety valve stuck lety valve stuck age location improper age incorrect lal-glass missing phon wrongly applied phon leaking age cocks wrongly located age cocks stopped up age cocks inoperative												+4.0		-16.	
arrel leaking		5			14.44	1	****	13.0	200	150	****		1		1
ome leaking	200	1					1			3				100	
hroat sheet leaking										1			2		١.,
low-off cock leaking.	200	5			1	****	****	300	****	15.7			5	****	
ashout plugs leaking 1		2		22	1		2		1	3		3	9		
dety valve missing	• • • •		****					1,00			***		42.44		
fety valve leaking			200				1	****	1111	200		1	****		150
age location improper															1
age incorrect	••••	3				***				****	****	1	1		
phon wrongly applied				100		2	1	4		i		11		2	
phon leaking		10						1		1		8	5	42.44	1
age cocks wrongly located	1	3		***			****				****				
age cocks inoperative		11						100			111	133			
age cocks blowing		31					2		1	2	1	14	17	1	
age-cock handle defective	****	1		:*:*	****	****	****	****	2	1	1	****			1
rip pipe missing					100000			1					1		-:
ipples defective or missing		4				de		eige				4954			
pples defective or missing ater glass missing ater glass stopped up	****		***	1111	111	***	4	D.	9	1	0	D.	13		74
ater-glass cocks defective		3			200			2	4			1	8		1.
ater-glass cock handle defective.				****		***	****	1	155		-	1	****		+ 4
ater-glass tube broken			****					4	1			3	2	1000	
ater-glass cocks defective ater-glass cock handle defective. ater-glass blow-off cock defective. ater-glass tube broken. ater-glass shield defective. ater-glass shield defective.												440			10
ater-glass shield defective	1	1	****		A	****	***	1484	14.54			140.0			
ater glass improperly located	Î.	12									1				1.
ubricator shields missing		4			1	2	1	4	2	1	1	10	5	3	
Jector Inoperative	1						1	37.5	25.	1	***	2	2		**
ater-glass sheid defective ater glass improperly located abricator shields missing abricator shields defective jector inoperative jector tank valve defective															3
lector feed pipe defective		1 2		529.0	••••	****			9	3		2	1		
ector throttle defective		14				200	10.1	3	2	3	1	ĩ	22		15
lector steam pipe defective	1	4						1.			1	5	2	****	
lector boiler check defective		3						****	1	4	225	2	3		++
b card missing	1	12					5	3		2	2	9	.3		1
jector tank valve defective, jector tank hose defective, jector feed pipe defective, jector throttle defective, jector steam pipe defective, jector delivery pipe defective, jector before check defective, jector before check defective, jector polity missing, re-hox piug not secured.	1	22		8	9		5	2	2	3	4	3	10	4 6	
ater-glass drip missing		1						9				4		6	
aler-glass drip defective															
age-cock drip improperly located			200	1-10							17.55	STAT	1949		
ater-glass drip wrongly located age-cock drip improperly located re-box sheets corroded		141111		33		10.00		2	12.57	4	2110	33.5	10		
TE HOSE GETECHACTURE CARRACTER CONTRACTOR		F7 5555	6000	0.000	(000)	100		(- X +	30×30×1	X 2 4 4	20.00	2472	3000		
uclassified steam leaks	* * * 1	88	000	200		4911	2	- 6	7	19	5	22	37		44
Number of defects	0	503	3	18.	18	б	45	52	50	0.7	44	206	223	20	
ecomotives owned	2	295	12	. 19	3	10	1.5-	29	7	17	8	76	61	6	
ocomotives inspected	1	198	10	15	ra.	2	13	17	9	13	13	70	63	5	
ecomotives ordered from service		31	0	0		0	D	10	0	T	14/3	5	550	-0.	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

	tern.	Co.	tern.	Ind.	r. Sys.	St. L. Term.	r, Lbr. Co.				estern.		oxville.	&W.	r Tex.
Defects.	Glenfield & Western.	Goetchins Stone Co.	Gould Southwestern.	Grand Rapids & Ind.	Grand Trunk Ry. Sys.	Gran, C. & E. S	Graysonia Nashv, Lbr. Co.	Great Northern.	Great Southern.	Great Western.	Green Bay & Western.	Greene County.	Greenville & Knoxville.	Griffin, Magnolia & W.	Gulf. & Inters. of Tex.
tay bolts broken					161			947		1	13		1		
ligid bolts leaking 1. lexible bolts leaking 1. elitales closed 1. elitales stopped up. tay bolts not drilled 2. rown sheet leaking. Uther sheets leaking.		1111			5 2	::::		2		****	1			::::	
Celltales closed 1	****				8			236			- 1				
tay bolts not drilled 3	1		1111	11	38	****	****	236	1	1	5	333	4	1181	
rown sheet leaking					1			18							
Itahor sheets leaking				****	3			33							200
lues leaking 1					1			22		****					133
lues plugged				3				35	5000						100
town sneet leaking fire-box sheets bulged fire-box sheets bulged fire-box sheets bulged fires leaking 1 fires plugged treh plugs leaking 1 fires bulgs leaking 2 fires bulgs leaking 3 fires leaking fires bulgs leaking					7			1					22.0		**
usible plug leaking						1111	1		Law in	Sec.	200			1000	
Sarrel leaking					5			31					1.00		
Throat sheet leaking		****	****	****			****	2					1718		1.5
fud ring leaking		1111	74.4		6	1		8			3		13.5		12.
Slow-off cock leaking				2	1		1	13		24.1			17.0		44.
afety valve missing.	200	177	i								L.C.	000			1
safety valve stuck															
age location improper		****	****	7		****	****	1	****	1505		333	2.7	400	**
age incorrect					1			2				10.0			
Throat sheet leaking. dud ring leaking. slow-off cock leaking. Washout plugs leaking 's safety valve missing. safety valve stuck. safety valve leaking 's safety valve leaking 's sage location improper. sage incorrect. lial glass missing. sliphon wrongly applied. sage cocks wrongly located. sage cocks stopped up.					2			18	1859	42.4					4.0
iphon leaking		111	1111	135	· i		1	30					1	1	1
age cocks wrongly located					****				1500	1212	***		1000		
lage cocks stopped up lage cocks inoperative lage cocks blowing lage-cock handle defective lage-cock drip defective lage-cock orip defective orip pipe missing lipples defective or missing Water glass missing Water glass stopped up Water-glass cocks defective						****	****	23			5			****	
age cocks blowing		2		1	2			20		110	5	1	2		
sage-cock handle defective			1473	1×3,0	2	****	4-12	8		STAR	1	40.00			24
Orip pipe missing.		135	1000		3		****	32	300		1111			1	
ipples defective or missing								80							
Water glass missing	****		****			1555			****				2	****	
Water-glass cocks defective							1	10		100		1	1		-
Water-glass cook handle defective		100	24.82	1970	1-1-	****	****	17	+9+9		12.53	****		++++	
Water-glass tube broken		1	100					1		1111		2200	7 100		-
amp missing			1557	in.					115		dres	cere			
Water glass shield defective	Ť.	1	2		10	1	4	70	1	. 2	7		1	2	-
Water glass improperly located				les.	3		10.0	*****	11.50	-144					
Aubricator shields missing		100	2	31	24		1	13	1		19		3	2	
injector inoperative			7.00		2	1000	2751	1			-3.0	-5.00			
Injector tank valve defective		***	1	100			1		Pers		-340	-30	1	-	
injector feed pipe defective		311	12.	12.1				18	****	1315		DO:	1.5	****	15
njector throftle defective					1			156				10.44		I	
njector steam pipe defective	****	****	140	201	2		1	2	10.0	4900		1000	1	1984	-
njector boiler check defective			4.67.7	4000	Residen	-354	1921	12	3.0		1	+00.00			
Badge plate missing	100	1	2	3	30		1	10	4 - 1	1	-	-	3	528	
ire-box plug not secured		2						59						112.	12
Orip pipe missing Vipples defective or missing. Vater glass missing. Vater glass stopped up. Vater glass scocks defective. Vater-glass cock handle defective. Vater-glass cock handle defective. Vater-glass blow-off cock defective. Vater-glass tube broken. Amp missing. Vater glass sheld missing. Vater glass sheld missing. Vater glass sheld missing. Vater glass inproperly located abricator shelds missing. Aubricator shelds defective. Injector inoperative. Injector tank valve defective. Injector tank valve defective. Injector tank hose defective. Injector steam pipe defective. Injector steam pipe defective. Injector boller check defective. Injector boller			1	1255	2	- 8-5	****	121	Sec.	1,8 9,5	2		U.X	300	٠,
Water-glass drip defective Water-glass drip wrongly located Jage-cook drip improperly located.	100	26-5	1-423	1000	- 1	- X+5				0.00	-	100	10.2	212	
dage-cock drip improperly located	No.		2111	19.1	1701	9331	27.21	10							
Fire hose defective								-)					1000		
Fire-box sheets corroded. Fire hose defective. Unclassified steam leaks		-19		5	26	-1-	. 3	201		- 1			16	1	
Number of defects	-	-	11		HIN	3	12	27.751	4		70	-11	100	7	
	-		10		4.0	-						-	-	-	
Locomotives owned Locomotives inspected	1	6	200	0.5	170	10	- 5	1.57	1	1	27		- 4	d	
Locomotives defective	Ť	- 1	-1		157.4		1	1.7%	11		10	- 1	1	- 6	
Locomotives ordered from service	. 13	1						71							

¹ Number of locomotives reported with this defect.
² Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Gulf & Sabine River.	Gulf & Ship Is-	Gulf, Colo. & S. F.	Gulf Line.	Gulf, Texas & Western,	Hampton & Branchville.	Harriman & N. E.	Hannibal Connect- ing.	Hearne & Bra- zos Val.	Helena, Parkin	Hicks Run.	Hillsboro & N. E.	Hocking Valley.	Holston Valley.	Holton Interur-
tay bolts broken		3	48	ap			1	43.64	1			3	66		ļ.
tigid bolts leaking 1			5		T.								3		١
elltales closed 1		1000	6		1							1316	0	000	1
elitales stopped up 1			39		3		1	2				****	3		
tay bolts not drilled 2rown sheet leaking	****	****	21	.000	1		****	10.65	cete	****	00		11		
ther sheets leaking			22	200	3								36		â
ther sheets leakingire-box sheets bulged			2												g.
lues leaking 1	200	7677	0	1				***	2	- 4 4 4	***		26 10	1	1
lues leaking 1. lues plugged reh flues leaking 1.								1780		****				200	
reh plugs leaking 1 usible plug leaking				1							000		2		
usible plug leaking		2000	A		****		++++	13,25	***			****	6		1
ome leaking		1111	1	000	100		111			100		1715	12	333	á
reh plugs leaking usible plug leaking arrel leaking ome leaking ome leaking low-off cock leaking low-off cock leaking low-off cock leaking low-off cock leaking lafety valve missing lefty valve missing lefty valve stuck fety valve leaking age location improper age incorrect lal glass missing phon wrongly applied phon leaking age cocks wrongly located age cocks stopped upage cocks stopped upage cocks blowing age cocks blowing age cock showing age cock showing age-cock handle defective age cock drip defective age-cock drip defective rip pipe missing leaking age-cock showing later late			2	1	1949			****					2	7275	ij.
and ring leaking		1	18		-	1.44.7	****	0.0		****	***	• • • • •	18		ŀ
ashout plugs leaking 1			14										31		ı.
afety valve missing				49,11	4,4,4,6									40.00	ĕ.
afety valve stuck		1000	***								****	***	2	1255	ď.
age location improper	200	1000	100					****		****		****		177	1
age incorrect		ino	3	1	000	00				2444			*****		
ial glass missing		1,100	80		++41		++++	4	****		6	***		1,000	1
phon wrongly applied		1111	7	177		200		1030		1111	1		16	100	á
age cocks wrongly located	L.			-	100		Jan	9777		****			1		1
age cocks stopped up		1 2	15	111	12.50	40.00		1		6199	erre.	****	2		1
age cocks inoperative	000	1	11	1	133	200		4	0.00	1	****	211	46	***	d
age-cock handle defective			2	22.23	1.,,	14.25		2			1		2		i.
age-cock drip defective	****		10			de en		iles:					1	1999	ŀ
inples defective or missing	****	****	6	100	1835	****		17.5	1710	9.13	7			****	1
ater glass missing	1			4	100	10.0		4	00				1	2	
ater glass stopped up			0	***	0.00		***	+24+	11.00	1 2			30		ķ.
ater-glass cock handle defective.	i			100	17.7	1			23		133		1	5.31	
ater-glass blow-off cock defective.		1	3	1	1111			1					5		ľ
ater-glass tube broken		100	1	3	49.53	44.05	4.4 4.5		****	0.0	0.05		1		ď.,
ater-plass shield missing		110	4		100		22.0		****	1	3	2	2.1.2.2		3
ater-glsas shield defective	5,432		1		3					44.71					ı.
ater glass improperly located		12.00	92	114	****	1		- 8	20	1	5		79	0	٠
abricator shields defective	200	1000			150				110						J.
age-cook firip defective. rip pipe missing . rip pipe missing . ater glass missing . ater glass stopped up . ater glass stopped up . ater glass scock defective . ater glass stopped up . ater glass blow-off cock defective . ater glass blow-off cock defective . ater glass tube broken . amp missing . ater-glass shield missing . ater glass improperly located . ater glass defective . ater glass defective . ater glass defective . ater glass defective .			1										1		Ĭ
jector tank valve defective	****	111	2											1000	1
lector feed pipe defective			1	111	133				1001				18	13.	1
lector throttle defective	See C	Jes.	16	1	****		50.50	1	2				43	***	ſ
jector steam pipe defective jector delivery pipe defective	****	***	4	1	***			15.5	****	9.6)		***	37 14		
lector boiler check defective	100		-8								1		16		4
lector boiler check defective ab card missing. adge plate missing. ire-box plug not secured	1	5 V 5 2	13	4	3	1	-0.41	6-	100	1	100	45.85	5	2	ŀ
adge plate missing		- 18		0	3	13.0	****	.0	-	. 1	1		53		1
afer-class firm missing			1	1.0		1197					2.0				ľ
ater-glass drip defective	32.0				.21)										1-
ater-glass drip wrongly located age-cock drip improperly located	= X = 1	5841		-X-3	GAS		22 6 1	100	112	11-1		2000	*****	2000	1
ire-box sheets corroded			1921	1	-3.9						1			100	1
ire hose defective			25	1			-	- 70	-17	-				1-27	
nclassified steam leaks	-111	818	20	5	1		1	- 3	1	1	1	- 12	155	1	1
Number of defects	10	11	448	49	11	2	3	37.	6	0	21	8	748	8	
ocomotives owned	12	48	277	7	-6	2:	2	5-	1	(-1	6	2	145	- 3	ľ
ocomotives inspected	4		248	7	5	Ti-	1	10	Ţ	1	15	6	277	2	1
ocomotives defective ocomotives ordered from service	4	8	175	ń	(3)	1 1	J.	70	1	70	2	0	186	0	

¹ Number of locomotives reported with this defect.
² Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	Hoosac Tunnel &	Houston & Texas Cen.	Houston Belt &	Houston E. & W. Texas.	Huntingdon & B. T. Mtn.	Idaho & Wash, N.	Idaho Southern.	Illinois Central.	Illinois Const. Co.	Illinois Northern.	Illinois Southern.	Illinois Terminal.	Independence & Monm.	Indiana Harbor Belt,	Indiana Northern.
tay bolts broken. Itigid bolts leaking ' 'lexible bolts leaking ' 'elitales closed ' 'elitales stopped up ' tay bolts not drilled ' rown sheet leaking. 'ther sheets leaking. 'ther sheets leaking. 'thes plugged 'the plugs leaking ' 'the plugs leaking ' 'urch plugs leaking ' 'urch plugs leaking 'urch plugs leaking. 'hoat sheet leaking. 'one leaking. 'hoat sheet leaking. 'du ring l		188	12	34		2		823		1	6		2	1	
ligid bolts leaking 1		15	6	••••			***	14	****		***	****			
'elitales closed 1		3	2	1	130			32							
'elitales stopped up 1	1	27	13	4				231		4		in			
tay bolts not drilled 2	****	35	1 2	2	5	.,,,		34	***		***				
Town sheet leaking		25	3	1	i			50	5000			1000	1011	1111	
ire-box sheets bulged		14		1				19	2				2		
lues leaking 1		22	3	1	- 22.	5.552	****	61							
lues plugged	****	94	4	2	10	0.0	****	184	****	****	****				***
rch phies leaking 1		100		12.7	1.51	1	100	11.	200						
usible plug leaking		2						1	10.20		2424			****	
Barrel leaking		6		1				15 31		1					- * 5
broat sheet leaking	331	6		1	.2			21		1830					11
fud ring leaking		8 11			- 2	****		29		1				1	
Blow-off cock leaking		11	2	2				30						****	
Vashout plugs leaking 1	****	8	45.47		***	****		83	****	****					
afety valve stuck	MI	100		1	3111	Cit									
afety valve leaking		i						6			1.50		icin		
age location improper		0	4444		49.50	****	****	5							
Pial-glose missing	****	2	4 1	1 4	7 * * *	****		38		1111	****			1	
iphon wrongly applied		44	4					173			2		1		
iphon leaking		44	1	1		1		42						****	
lage cocks wrongly located		4						75			****	****		34.44	
lage cocks stopped up	1000	11	1	100	577	1000	1000	75	2000					1	
age cocks blowing		5	2		i			182							
lage-cock handle defective		5	1	2750	-	49.00		22 10	2				* * *	2000	
rin nine missing		3		***		7.55	2001	17	1177	100	5577	100	17.40	100	12
lipples defective or missing				11124		2									
Vater glass missing	- 1	44.20	222	1241	5	69.65	4113	*****				***			
Water glass stopped up	***	2	T	1		73.5		23	1244	1000	7.50	3445			1
Water-glass cocks defective Water-glass cock handle defective Water-glass blow-off cock defective . Water-glass tube broken		2 2		1.2		1	50.8	- 2		IC.					
Water-glass blow-off cock defective.	****	1	5	1111			-	118			***				
Vater-glass tube broken	4000	4541	1000	199.68	40.00	12.50	2021	8	5151	1891	5.65	1171	****	7.423	200
Vater glass shield missing.	12.0	8	1	-1	200		577	192	1	4			2		17.77
Vater-glass shield defective		4 3	1	2110	200			355	vies.			2	1		
Vater glass improperly located		34		112	100	2.45	+1.8.	197	3.72.1	1	****		1	64.02	10.43
Amp missing. Vater-glass shield missing. Vater-glass shield defective. Vater glass improperly located unbreator shields missing. ubricator shields defective.	***	2	-	0	2			160	1	1		***	1	3000	
njector inoperative		4		2				21				1		Luc	
njector tank valve defective								4			-				rists
njector tank hose defective	4.2	3	4121	1	1	2.2	200	8	THEX	1,491	(++)	100	77.88	10000	**)
niector throttle defective		13	3	2	2101	1141	224	28	7.10			2.	100		-
njector steam pipe defective		4	9	- 6				35	224	1000	2244		1141	2444	-5
obricator snields defective njector inoperative njector tank valve defective njector tank hose defective njector ded pipe defective njector steam pipe defective njector steam pipe defective njector delivery pipe defective njector boiler check defective njector boiler check defective ab card missing sadge plate missing Water-glass drip missing Water-glass drip defective		3		1	2			21						-45.5	
ah card missing	1	18	2	T.	3	100		218		100		100		3.00	
Badge plate missing.		5.4		4131	. 5.	000	1	235 (1)	Viene	-2	1	2		
ire-box plug not secured	3.11	4	200	1	100	X	358	16	PETE	[sel	115		11.0	A 1.1	0.8
Water-glass drip missing	2.3.	3.5	2121	X = 3.1	THE STATE OF	13.00		20	XX-1	7	10 (-)	100	-1.0		- 8
Water-glass drip defective Water-glass drip wrongly located Bage-cock drip improperly located Fire-box sheets corroded.	221	224				2262	1981	2211		-30	2121	0161	PILL	5011	
lage-cock drip improperly located										- kel	-00		-1-1	-111	4.6
Fire-box sheets corroded		1				1-1-				-	-08-	- 14			
Fire hose defective			12	4	1		2	278			***		2		
Number of defects	4	710	94	77	38	5	3	4.401	4	14	to	- St	14	2	-
Cocomotives owned	- 6	06	5	17	22	14	13	1.410	-	13	1s	6	3	16	=
ocomotives inspected	1	270	2.7	3.1	16	1.0	1	1. (871	1	în.	8	- 1	3	9	
	. 1	1.70	1977	24	70.0	d	- 1	Tyllon	· V		6	1.0	-2	- 2	

¹ Number of locomotives reported with this defect.
2 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Indianapolis Union.	Indian Creek Valley.	International & G. N.	Interstate.	Ironton.	Iowa Central.	Iron Mount. & Greenb.	Island Creek.	Island Creek Fuel Co.	Ivorydale & Mill C. V.	Jacksonville Terminal.	Jamestown, Chau.	Jonesboro, Lake	Kalamazoo, L. S.	Kanawha & Mich-
tay bolts broken	58	4	117			25				1	13	7	3		1 ,
							****				1				1
lexible bolts leaking 1elltales closed 1		***				2									925
elltales stopped up 1	2	****	97	1 2		11			****	2	1	***	****	****	1
tay bolts not drilled \$	11		2		2	2				1		1			
rown sheet leaking	2		8		1	1						1		2	
ther sheets leaking	5		11	1	¥195	1				2	2	3	4	4434	1
light botts leaking leixible botts leaking leikales closed 1 elitales stopped up 1 tay botts not drilled 2 rown sheet leaking. ther sheets leaking. ther sheets leaking. lues plugged. reh flues leaking 1 reh plugs leaking 1 reh plugs leaking 2 reh plugs leaking 3 reh plugs leaking 3 reh plugs leaking 3 reh plugs leaking 4 reh plugs leaking 3 reh leaking 6 leaking 6 leaking 1 low-off cock leaking 1 sahout plugs leaking 1 saking 1 lety valve missing 1 lety valve stuck 1 safety valve stuck 1 sage incorrect 1 sal glass missing 1 phon wrongly applied 1 phon leaking 1 sage cocks wrongly located 1 sage cocks inoperative 1 sage cocks inoperative 1 sage cocks inoperative 1 sage cocks inoperative 1 sage-cock handle defective 1 rip pipe missing 1 later glass missing 1 rater glass stopped up 1 sater glass stopped up 1 sater glass stopped up 1 sater glass cocks defective 1 sater glass cocks defective 1 sater glass cocks defective 1 sater glass cock shoundle defective 1 sater glass cocks defective 1 sater glass cocks defective 1 sater glass cocks defective 1 sater glass blow-off cock defective 1	1			****	****	1	****			****	2	4	***	***	
lues plugged	2		1			132							2	100	
rch flues leaking 1			****								****				
usible plug leaking			1	****		2		****	****	****					
arrel leaking			5						1111					1	
ome leaking		2	,,,,			·····		1	2		4.735				
nroat sneet leaking		1	2	****		1 2	4.44				-664	***	****		
low-off cock leaking	2		3	****		. 0		****		2	777		1	1.77	
ashout plugs leaking 1	7		5			2			****	2 2 2	2	ï	3		
afety valve missing										ires				,	
afety valve leaking	·-ō-	****	0		****			****	***	****	***	****		1	15
age location improper				1	****		100		inh.		111	173		****	
age incorrect															
ial glass missing						1			î			****	****		
phon leaking	1	2	8	2	***	16	Car	****	1	727	***	****	2	****	
age cocks wrongly located														177	
age cocks stopped up			1			1						8	3		1.
age cocks inoperative	16	90	8		****	5	****				****	3	2		
age-cock handle defective	10	111		****		2	1			1	0				1
age-cock drip defective	de								5000		5000	1	3000	100	
inples defective or missing			4	****	****					****		****	***		
ater glass missing		54.45	****		3	******	****		1	****	****	100			15
ater glass stopped up		00							in		12.1		33.	19.5	10
ater glass missing ater glass stopped up. Inter-glass cocks defective ater-glass cock handle defective ater-glass blow-off cock defective. Fater-glass tube broken	2					*****		1		3	1	1	1		
ater-glass cock nandle delective	1	1	6			7	****							****	
ater-glass tube broken		1						1		550				200	15
amp missing						1	****								6
ater-glass shield missing	10		6	13.57		- 6	2100	3		1	23,63		2 2	1	10
amp tussing 'ater-glass shield missing 'ater-glass shield defective 'ater glass improperly located ubricator shields missing ubricator shields defective dector inoperative	10				99	1	227		1.21		100			***	100
ubricator shields missing	15.0	2	11	1	****	6				2		4	2	4	100
ubricator shields defective	4	+4+4		+5.05		2.000	2543			2 1					
lector tank valve defective	****	****	49.00			77.74	***		****	1	****	1	1	***	
Jector tank valve defective jector tank hose defective jector feed pipe defective					****	1		2			1	127			1
dector feed pipe defective	123		3			1		8-50	1000	1	****				16
Jector throttle defective	7	2557	3	1	****	*****	3.41	3	35.54	8	1		2		
lector delivery pipe defective			2	1000	4140	1	100	1	100	i		1.00		1111	
lector botter check defective		1	3	1111	200	1	1595			1		1		3	II.
jector feed pipe defective. jector throttle defective. jector steam pipe defective. jector delivery pipe defective. jector belier check defective. h card missing. ndge plate missing. re-box plug not secured. ater-glass drip missing. ater-glass drip defective.	11.75	3	3			3	1	4	1	2	2		5		1.0
ire-box plug not secured	9	- 2	21		27	5	****	1	1.	2	1511	1170	2	****	1
ater-glass drip missing				1			1001	***					2	000	10
ater-glass drip defective				->-0	*)-(*				1951		2001	2	100		10
ater-glass drip defective. ater-glass drip wrongly located age-cock drip improperly located ire-box sheets corroded.	23.51		-1-1	10,00	1111		310	VIVI.	Year	YELL	1261	1.55.0	2000	352	
ire-box sheets corroded		001	1		50	1000	177	100	2000	0.00	1	1000	200	130	150
re hose defective		5000				15								2.3	-
nelassified steam leaks	23	1	14		****	15	4	-7	3	11	5	6	7		1
Number of defects	77	20	294	11	11	278	3.	24	8	(13	38	41	47	13	4
ocomotives owned	21	3	165	5	11		1	4	1	3	4	5	10	7	
ocomotives inspected	40	0	100	12	ő	61	1	3)	i	9	1.5	13	7 6	11	16
	36	74	77.76	79	100	-50	1.1	1.0	1.	8	Di	9	-15	5	1:

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	Defects.	Kanawha & W. V.	Kanawha Central.	Kanawha, Glen	Kane & Elk.	kanona & Pratts- burgh.	Kansas City & Memphis.	Kans, C., Clinton & Spgfld.	Kans. C., Mex. & Orient.	Kansas City Southern.	Kansas City Ter-	Kansas South- western.	Kaul & Hall Lum- ber Co.	Kani Lumber Co.	Keeseville, A. C.	Kelly's Creek.
Number of defects	oolts broken							1	27	115	9	1			6	5
Number of defects	holts leaking 1								4	3	2					
Number of defects	les closed I	****	150					****	****	*****	***		****		***	
Number of defects	les stopped up 1			3		1	2		8	27	4	1		111	****	
Number of defects	bolts not drilled 2								1	2	1					
Number of defects	sheet leaking	****	24.55	****				1	0.0	2	2		****			
Number of defects	ox sheets bulged	111	100	250			7000	100	6	4			****		22	1
Number of defects	leaking 1		1				1		4	8					1	
Number of defects	plugged				****		43	****	4	39	****				120	
Number of defects	nlues leaking 1		****		1377	135	***	****				****	****	****	****	
Number of defects	le plug leaking															
Number of defects	l leaking				4.00		1,000			1					174	
Number of defects	leakingt shoot looking	****	1		44.45	****	17.5	· · · · ·		1				****	1.49	
Number of defects	ing leaking						ï	1111	12	5		i			1	1
Number of defects	off cock leaking						a.		13	18						0.
Number of defects	out plugs leaking 1			****				***	9	22	2		1		1	
Number of defects	valve missing	***	****	3.00		13.50	****	***			***	4-8-				* *
Number of defects	valve leaking									22.2	i			111	000	15
Number of defects	location improper		2.52								200.	2.24				11
Number of defects	incorrect	2-51	1			1297	1							****		1.3
Number of defects	n wrongly applied	****	1	****	1		2		1	7	****	1	3	1	44.64	5 -
Number of defects	n leaking	3		125.					3	7	2	****			122	
Number of defects	cocks wrongly located					***			2	1						
Number of defects	cocks stopped up		***	****		****		1	9	31		434-		- 1	¥180	1
Number of defects	cocks blowing	2		1000	2			****	5	13			1		122	10
Number of defects	cock handle defective					4,650	2			1		000				100
Number of defects	cock drip defective		15-1	:500	***			-121	EAY!	*****	***	5-5-	2005	***	5167	
Number of defects	es defective or missing		01.11	25.70	5177	1 444				11	13.55	***	****	***	****	*
Number of defects	r glass missing			1										1		22
Number of defects	r glass stopped up	2.50		2244			***	43.5	1111		2103		24.54	25.44	25.93	33
Number of defects	r-glass coeks defective	5-3-	4.5.	2555	1441	24.00	-1-1		3	A	2	++++	1		200	
Number of defects	r-glass blow-off cock defective.	1			1				1	ō	1			Con		1
Number of defects	r-glass tube broken		1	1	de	41.00	1	***	1	1	50.0		****			
Number of defects	missing		57.55	2557	57.75	+ 4 = 5	-222	1.00	. 55.	*****	3195	-1-		1251	Gr	-
Number of defects	r-glass shield defective	1	***			7.555	1			11	****	10.50	2	35	4-1-	
Number of defects	r glass improperly located	1		2.34	2423	1000		****	2010	1	11-				2011	100
Number of defects	cator shields missing	1	1	4	1	DANCE	-180	1	200	.8	4.00	1	3	1		1
Number of defects	icator shields defective	2000	2000	-6		5.77	1000		9		4			77	1	-
Number of defects	or tank valve defective			200	350			1900		2	343			250		22
Number of defects	or tank hose defective			5551		11500	1		1	3	5	55.00			0.00	100
Number of defects	or feed pipe defective	1		3.75			1	1.00	97	- 1	100	+× (4)	25.00			
Number of defects	or steam ping defective	T	2.01	2.0.		3 - 23	***		2	7	-	23.00	2		1	
Number of defects	or delivery pipe defective			7454		2350		1000	20			135				
Number of defects	or boiler check defective	28.84				1	I	100	2	*****	215	-700	44.5	292		-
Number of defects	ard missing		- 1	****	1		13		0	7.4	3	700-	3	13		11
Number of defects	oox plug not secured			2011		100		112	100	*****						
Number of defects	r-glass drip missing	-	100	1	(-)	X + 3.0		1900	3	- 5.	+4-	# 1 Da				
Number of defects	r-glass drip defective	Pexe	3-11	2521	3.40	X		2111	5065	1	1118-			-51-		
Number of defects	r-giass drip wrongly located	****	101		222	2200			100	DIAVEL DIGITAL			-			
Number of defects	ox sheets corroded	1.11				1.00										
Number of defects	nose defective			-30		-		7.	335	1.15						
	assified steam leaks	3	i)	1	11-			22	at	3/3	Ţ		6.		1	
	Number of defects	14	14	10	7	2	0.5	9	270	473	-39		2)		12	
	notives owned						B	72	715						7	
ocomotives inspected	notives inspected					8	0	-2	33		1/3				- 7	
	notives defective	- 50												- 7	6	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Kelly's Creek	Kennebec Cen- tral.	Kentucky & Ind. Term.	Kentucky & Tennessee.	1.3	Kentucky Mid- land.	Kentwood & Eastern.	K e ti t w o o d, Greensb. & SW	Keokuk & Ham. Water P.	Kingsdale Lum ber Co.	Kinston & Snov Hill.	Kinston, Caro- lina.	Kish acoquillas Valley.	Knoxville, Se-	Lucy, D. B. Con.
Stay bolts broken Rigid bolts leaking 1 Felltales closed 1 Felltales closed 1 Felltales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking Dother sheets leaking Dother sheets leaking Flues leaking 1 Flues leaking 2 Fre-box sheets bulged Flues leaking 1 For the speaking 1 Flues leaking 2 For the speaking 3 For the speaking 3 For the speaking 4 For the speaking 4 For the speaking 4 For the speaking 4 For the speaking 5 For the speaking 6 For the speaking 6 For the speaking 7 For the speaking 9 For the speaking 9 For the speaking 1 For the speakin	2		6	1					24.74		6	5		2	
Rigid bolts leaking 1					***			****		****	****	2		****	
Pulltules closed 1		100	1	1	133	3	****	****		****	****	****		***	100
Telltales stopped up 1			2	3		1							*****		1
Stay bolts not drilled 2		2	1									****	1		
Other sheet leaking	****					****				100			*****	4255	5.4
Fire-box sheets bulged													*****	1	
Flues leaking 1				1			1			****	1				
Flues plugged	***	****		***		1		140.	***	****	443.0	2	*****		100
Arch plugs leaking 1	10.0						1011	ac.						1111	10
Fusible plug leaking	10:21		***												
Barrel leaking	1		****	****	****	200					****			1000	300
Phroat sheet leaking	4	200										0.00		1	
Mud ring leaking	1111														
Blow-off cock leaking			2	++-+	****	****						****		483.	*X
Washout plugs leaking	****	****			***	****		50.3		****	****	****			
Safety valve stuck														200	1.
Safety valve leaking			00												-,2
Page location improper				***	****			****		****					
Dial-glass missing	***	-	20			7.5	1						121		-
iphon wrongly applied	J	3.0	1				3						1		E
iphon leaking			2					44.84						1	100
rage cocks wrongly located	****	1000		****		****									
age cocks inoperative	1111	100				1				1					11
lage cocks blowing			1	3	6.0	1	1							1	10
Fage-cock handle defective					00								1	****	64
Orio pipe missing	333	3.7				7.11		211			****			***	1
Vipples defective or missing															1.
Vater glass missing		2		1						2		1	*****	***	15-
Vater-glass cocks defective	****	1115	1	2	****			****	111			200		111	**
Vater-glass cock handle defective				1											12
Vater-glass blow-off cock defective			0.0	1			4	****				1	*****	1	+1
amn missing	2	***	****		-5.44			****	***		18.4	****		1	
Vater-glass shield missing									2		1	000	3	1	1
Vater-glass shield defective			···	****		2	1	1						1	+3
vater glass improperly located		****	- 1		5,500	100	9.00	17	0.00	1	****	4	4		- >
ubricator shields defective						2									
njector inoperative					1	rees			2000	24.51				1	
njector tank valve defective	20		11			1645	0.0	25.24	0.0	20		63.50		****	
njector tank hose defective		****	1	****	****	20,100		1000				.0.0			**
njector throttle defective		(,8)	2				1	1011			2				
njector steam pipe defective		****	2		****		1111	1110		****	****		*****	1	
njector denvery pipe delective		****	1	1		19.50	0.0	9.0	***		****	2.5			
ab card missing	2			2			5		2	2	2	1.4.	2	1	12
adge plate missing	2	2	.2-1	2121	. 924		1000		-5.00	1					
re-nox plug not secured				***											~ *
ater-glass drip defective		333		200						25.55				1000	
ater-glass drip wrongly located			1155			0.11									
age-cock drip improperly located					0.00	- 6 4 1						2+			
ire hose defective	****	va.0			25	***	9.0	900			0.00			100	17
'ire hose defective Inclassified steam leaks	1		3	3	3	1625	434			20.00		2	15.15.2	1	0
Number of defects	15	n	20	21	1	12	24	9	-	-	12	18	14	19	-
	10	_		=1	=	-				-	16	1,0	-	174	_
SECONTRACTIVESS OFFICE		2	14	6	1	3	14	3	10	0	6	6	2	2	+27
ocomotives inspected	2	2	0	0	1	3	10	3	2 2	2	3	6	4	4	
ocomotives ordered from service	0	0	0	0.	0	-0.	- 11	0	T	D.	.0	2	0	2	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	La Crosse & S. E.	Cake Champl. & Moriah.	Lake Charles & N.	Lake Erie, Alli.	ake Erie & Ft. Wayne.	Lake Eric & West- ern.	Lake Shore & M.S.	teside &	Lake Sup. Term.	8	Lake Terminal.	Lancaster & Ches- ter.	Lancaster, Oxford & S.	Jane, C. W., &	Caramie, Hahns P
-	H	7	H	7	7	a	7	7	7	7	7	7	7	H	H
Stay bolts broken		2		5		122	428	11	10		2				
Rigid bolts leaking 1						7	12								
Flexible bolts leaking 1						1	13	****							***
Telitales closed 1	+ 42.	1	100			20	90		1.5		0	1			
Stay holts not drilled 2		1			100	77	35		5						
rown sheet leaking		1				6	4		1						
Other sheets leaking						25	37		1		****				400
Firebox sheets bulged	****				****	3	3	17.1			***	1		****	***
Flues leaking 1				****	2.00	0	17	****		****	****	1	100		
reh fines leaking 1	2011	1000				0.00									
Arch plugs leaking 1,						21	45	4444							
Fusible plug leaking	****	200		****		****	17					****	****		
Sarrel leaking	****					2	33		î	100	î	000	1100		10
Phroat sheet leaking	1					1	12		,,,,				J		
Mud ring leaking				1		3	41	1	1		- 1	1			
Blow-off cock leaking				2		36	48	****	100					****	***
Washout plugs leaking 1	***			3	****	41	134	4	1						
Safate valva strick	****	133		1333	1011	0000		0000		100	773				
Safety valve leaking				3		30	17								24.
Gage location improper														40.00	
Jage incorrect			142-				10	****		****		1	****		
Dial glass missing		1000		7.00			1.2						2		
Siphon looking				****		2	4		2						
Gage cocks wrongly located															
Gage cocks stopped up						8	1	1	2			9999	1200		***
Gage cocks inoperative						12	46		2			1	5000	***	***
Gage cocks blowing						1	20	i	2	77.77				211	000
Gage-cock drip defective	1001	5		2.01		Coc.			1						
Drip pipe missing						18	6					100			+0
Nipples defective or missing				***		2225	****	****		67.43		1	0		***
Water glass missing		1.44	375	****		****		8.777							15
Water-glass cocks defective		1000		200	****	11	7		5		1				
Water-glass cock handle defective					A		1			**->					
Water-glass blow-off cock defective.	40.00			1		4	22	4917	7			1	****		
Water glass tube broken		49.59		inis	****		- 3	****	1626	****		****	****	-0.44	20.
Water-glass shield missing							1	4	3		2499				
Water-glass shield defective			2		1	68	41								
Water glass improperly located				200		3745		-11	-177	1			-455	20.00	
Lubricator shields missing	1			****	1		*****	2	3	1000		2		1	***
Injector incorptive	****		X4X-			****	4	100	0	PXPe		1			00
Injector tank valve defective							1 41 41								
Injector tank hose defective				1		1	. 9		1	11.4			-5-1		
Injector feed pipe defective				1		3	6			4000	1255	1	-500		
Injector throttle defective	2285	3443	117			21	13		100,000			7.000	-954	200	
Injector delivery nine defective	1000	****		1491	1555	3	9	1	-				2100		30
Injector boiler check defective		1111				7	31	1111	3	1777	2227				
Cab card missing	141.				2	2	8	3	8	1.00		2	2	1-	
Badge plate missing	1	944.	1111	2020	1	44	38	18	1	4	-1-1	2		2	
Fire-box ping not secured		***	3.50		24	1111	1	-111	1451	-4-1	1000	12.18		0	35
Water-glass drip defective	12.3	200				4	1		000	****		Dice			
Water-glass drip wrongly located								3 3			- 40			1111	
Gage-cock drip improperly located			44)11	4450	11.50	-	1	1		1177					
Fire-box sheets corroded		7-0-		1.91		110	151117			11.00		2777	- 551		38
Inchesified eteem looks	244.6	1400	1	1.00	0	96	150	- 202	0.0	4	7	1117	7101	2377	
water glass tube broken. Lamp missing. Water-glass shield missing. Water-glass shield defective. Water glass shield defective. Water glass improperly located Lubricator shields fusising. Lubricator shields defective. Injector imperative. Injector tank valve defective. Injector tank hose defective. Injector feed pipe defective. Injector steam pipe defective. Injector steam pipe defective. Injector delivery pipe defective. Water-glass drip ribssing. Water-glass drip missing. Water-glass drip wrongly located Gage-cock drip improperly located Fire-box sheets corroded. Fire-box sheets corroded. Number of defects				- "	-6	- with	F (fair	-	-	-	-	-		-	-
Number of defects	3	- 8	Ť	20	8	740	1,453	31	81	9	15	10	11	8	
Locomotives owned	3	N		1.0	1	130	0.07	4	14	4	18	2	-3	. 101	
Locomotives inspected	2	4	- 5	43	17	SH	I. Det	16	51	4	31	0	1	9	
Locomolives delective	2	1	-3.	12	27	245	dV	()	30	d.	12	ī.	11	- 4	
Locomotives ordered from service	- O	(1	- 0	0	- CE	10	177	1	- 4	(1)	10:	- 11	- 11	U	

¹ Number of locomotives reported with this defect.

³ Number of locomotives reported with this defect.

Also includes stay bolts not properly drilled.

Defects.	Las Vegas & opah.	Laurel Fork.	Laurel.	Laurinburg Southern.	Lawndale Ry. c	Leesville East West.	Lehigh & Hud-	Lehigh & New England.	Lehigh Valley.	Lexington & Kast- ern.	Lewisburg Rone, El.	Liberty-White.	Licking River.	Ligonier Valley.	Litchfield & Madi-
tay bolts broken	3	-					70	11	161	22					1
tigid bolts leaking '- lexible bolts leaking '- lexible bolts leaking '- leltitales closed '- leltitales stopped up '- tary bolts not drilled '- trown sheet leaking '- trown sheet leaking '- trown sheet leaking '- tre-box sheets bulged '- lues leaking '- lues plugged '- tre flues leaking '- borne leaking '- broat sheet leaking '- fluer in leaking '- tre flue leaking '- tre flue tre flue tre flue tre flue tre flue leaking '- leaking '- leaking '- leaking '- leage location improper leage cocks wrongly located leage cocks wrongly located leage cocks inoperative leage cocks inoperative leage cock flue defective leage cock flue defective leage cock flue flue flue flue leaking '- lage cock flue flue flue flue flue flue flue flue	1	13.5		200		****		11	3				::::		10
lexible bolts leaking 1									1						
Celltales closed 1	2	****	****		****	1000	2		15	2			++++		
tay bolts not drilled 1	2	77	17.	*	***	****		2	10	5 3			i	1000	11
rown sheet leaking							2	1	33	3 2 1					1
Other sheets leaking	1	***	8555		****		4	3	95	1		***	****	****	
lues leaking 1							-8	3	45				****	2	
lues plugged									70		3	1		26 26	П
rch flues leaking 1			***											****	
ren plugs leaking		1	100			****									1
Barrel leaking									47		2000	Jan-			
Dome leaking						1			8					1000	1
fud ring leaking		100	****		****	****	10		1 79 6 68	****			00	1	
Blow-off cock leaking	1	100						1	6	2	1				1
Vashout plugs leaking 1							12	2	68	2			1		
afety valve missing		****	****					****					4		1.0
afety valve leaking			1	1111			1	i'i'	1			13.	1131	377	E
age location improper							****								
lage incorrect			****	2	****	****		2	17		****		1		1.9
iphon wrongly applied	i	2	1111		2		9	1	02	1	ï	3	2	4	1
iphon leaking			1	1000			7	2	65	2			1	3	133
age cocks wrongly located															1,3
lage cocks stopped up		****							6		****		1	****	15
age cocks blowing				227	200		5	6	52		ï	1	1515	i	Ь
age-cock handle defective			1	2					4	1	1	1	1		
age-cock drip defective		****		****			5000				****		***	****	
lipples defective or missing		100	100				***	1411		200				****	b
Vater glass missing					1		4.55	2	114	4		12	2	2	
Vater glass stopped up		***							5		2527				,
Vater-glass cock handle defective .		6311		1550	1111	102	1		7	****	****	****	i	i.	E.
Vater-glass blow-off cock defective				2			4	2	15				1	3	1
Vater-glass tube broken				4		4471			13						÷.
Vater-glass shield missing				****		3	. 97.4	****	8	-14.		12.17	4	11	1
Vater-glass shield defective		1					11.5	111	7		00-7-1			î	E.
Vater glass improperly located		****	1475		1131	1445	1		2	1					12
ubricator shields missing		- 2	1		1	2	1	1	19	1 2	1610	9	6	4	
jector inoperative	151				1007		1	5073	11				1	1	Ė
alector tank valve defective						·vir							1		
njector tank hose defective		***	YA			***	190	1	13	-2 × 5	44.5		1	1	
lector throttle defective	10		100			2001	1	3	22	2	1111	****	1		
njector steam pipe defective	2	1174			1212		7	4	30		0,00				L
alector delivery pipe defective		2000	1000		****			1	12	43.87	7777	5177	****	1	
ab eard missing	î	1050	CO.	3	2	3.31	3	3337	29		2	i.	2		1.
adge plate missing					2		222	1	112					8	
ire-box plug not secured						51.5	1357	1444	38	1142				8	
ater-glass drip defective			1.10		****	1000	0.635	1431		19.51		0.00		"i"	10
ilector tank valve defective jector tank hose defective jector feed pipe defective jector throttle defective jector steam pipe defective jector delivery pipe defective jector boiler cheek defective ab eard missing adge plate missing ire-box plug not secured ater-glass drip missing ater-glass drip defective afer-glass drip morngly located age-cock drip improperly located.	1011	2.4.	2.24		2454	4.00	1224	1		3(0)		2101			10
age-cock drip improperly located.			1.000				1200	Such	·	100			****		1
								***		****					1
ire hose defective nclassified steam leaks	2	1475	1855	1150	1117	3	21	16	377	8			14	ii	
Number of defects	-	5	4	17	8	-	175	-	1,862	60	7	32	49	81	-
ocomotives owned	14	2	6	3	Desire	3	46	26	890	15		9	5	6	-
ocomptives inspected	- 3	19	- 4	4	2	- 3	170	34	751	28	2	15		29	
ocomotives defective	. 3.	7	1	0	4.8	3	47	26	553	21	2 0	15	7 7 3	16	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Stay bolts broken Rigid bolts leaking 1 Feltiable bolts leaking 1 Feltiable bolts leaking 1 Feltiales closed 1 Feltiales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking 2 Fire-box sheets bulged. Fires plugged Arch plugs leaking 1 Arch plugs leaking 1 Arch plugs leaking 2 Brus plug leaking 3 Borne leaking 4 Brusible plug leaking 4 Borne leaking 5 Borne leaking 6 Borne leaking 7 Borne leaking 7 Borne leaking 8 Bow-off cock leaking 9 Bow-off cock defective 9 Borne 9 Bow-off cock leaking 9 Bow-off cock defective 9 Bow-off cock leaking	Little Falls & Dolge.	Little River.	Little R i v e r Valley.	Little Rock,	Live Oak, Perry & Gulf.	Livingston & SE.	Long Island.	Lorain & South- ern.	Lorama Railroad.	Louisiana & Ar- kansas,	Louisiana & N. W.	Louisiana & Pa- cific.	Louisiana & Pine B.	Louisiana Central.	La. Ry. & Nav. Co.
Stay bolts broken	5	2			3		33			9					
Rigid bolts leaking 1			15.5	13.0	1		1			er.,			25		
Telltales closed !				1			4	7777	****					1	
Telltales stopped up 1		3			4		2			6	1			1	1
Stay bolts not drilled 2		-313		1840	40.0		4					4000			
Crown sheet leaking		,						****	***	****		****			
Sire-hov sheets bulged		1	0		200			200	****	****		22		133	0.1
Thes leaking 1		1016			2		3			1		****			
lues plugged	1911			0.0		1				40.00					1 5
Arch flues leaking 1															
Fueible plug leaking	100.5	70.0	555.				*****	1133			***			****	***
Barrel leaking				1.44											
Dome leaking							2	00		0.0	1			1	
Throat sheet leaking		12-1		13.13	1		19	****	****		44.4				100
Blow-off cook leaking			110	100			6					****	****	****	
Washout plugs leaking 1	1111	1	11	100	1	11.0	31								10
Safety valve missing					ai.										
afety valve stuck				1555	50.00		*****			***	***				20
Safety valve leaking							****	****	000			****	****	****	
lage incorrect	1		***		1333			****	****		****		****		
Dial-glass missing			1		100		2	123	1					1	100
iphon wrongly applied	19.2	1	1	12.55	.6:		44.65		3	1		1		3	
iphon leaking			2025	-9-5		18:50	7			1			-5-15		
rage cocks wrongly located	0.00	1555	1	****	1	119			***	1	27.00		1	- 1	25
lage cocks inoperative	1	1311	1000	1111			1	1000		2	****	OTT.	î	1	7.7
Dage cocks blowing	1						7			- 1				···	
Gage-cock handle defective			1		2	1				2		++++	1	***	
Drip pine missing		-7-5	****		****			4944	17.77	-9:-	***		1	****	15
Nipples defective or missing	111	COL	5.50	1000	20.71	0.00	22.00	1000						0011	10
Water glass missing		1			6	7871			4					Lil.	LJ.
Water glass stopped up		1	10.80	33.00	34.50		4	100	7037			2.4-2		Stat	3-
Water-glass cocks delective	a	1518	1818	1111		1995	9	1227	-1-	2	****	****	177	2-2-	200
Water-glass blow-off cock defective	1	100	0.005	1000	1000	1	9		6	2	****	2		1.5	
Water-glass tube broken			1				3		2574			1444			22
Lamp missing	1000	4.055		1741	1911	120	11,3755	22.50		-3-5	-	45.77	17.50		10
Water-glass shield flussing	1383	1	1.000		23.22	1	3			2	108	- A	9		M
Water glass improperly located.	020		0.00	0100	100	****		1000			04.00	6.1		7	13
Lubricator shields missing		2			4	1	G	1	4	3	I	27.18	2	3	13
Lubricator shields defective					12.1	. 8 . 5		1,610					00		400
injector inoperative	17.5			EXAM	2		2	***		1911	1260	4 10 6 6	- P.C-	***	
injector tank hose defective	131	100		1	-743	24.5	3	12.12	1	2	++==	211	-	14-3	4.4
Injector feed pipe defective	2112	-955		1950	3101		7			1					
injector throttle defective	2		1000	-00	2	1	4		-	5			2	-	m
njector steam pipe delective	4	-4-			-		10		1				1777		
Injector boiler check defective	**	1	1	Tere		1	5	- 6 11-	1557	221.6	Tree-	150	11111	100	
ab card missing			1	1	1	1	12.223		3	2	2	1	1		
Badge plate missing	1100	1	1200	1	2		7	100	5	5				1191	14
rire-box plug not secured	A X = 4	1508		-5-8	18	1101	1×1111		0.00				-12.9%	10.00	
Water-glass drip defective	0.654							100							
Water-glass drip wrongly located	1000			-											
Gage-cock drip improperly located		-,-,-					-1-75-								
Fire-box sheets corroded		7227	1101			- 512		17(10)	13,111						
Unclassified steam leaks	7	120	9250	5	4	10.00	200		1	1		7	1	1505	25
Number of defects	29	17	6	- 11	ni.	à	258	2	21	AG.	W.	8	10	131	-
Locomotives owned	X	10	3	0	7	1	181	-	-3	28	LI	11	18	10	
Locomotives inspected	-5.	4	-	1	E)	1	1.0)	2	545	134	2	3	3	.7	
MODULINE YOU MEND ON THE PROPERTY OF THE PROPE	-5	16	1	1	8	1	100	1	2	14	2:	50	3.5	77	
Locomotives ordered from service													111		

¹ Number of locomotives reported with this defect.

8 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	South-	West	& Atl.	& J. B.	k Nash	& Wad	H. &	N. A.	R. &	Lumber	iver,	t Con-	r Ter-	West-	blin &
Defects.	ouisiana ern.	Louisiana ern.	Louisville &	Louisville &	Louisville & Nash	Louisville & Wad- ley.	Louisville, E	Louisville, 1	Lowville Beaver R.	Luckie L	McCloud River,	McKeesport nectg.	McKeesport minal.	Macomb & ern Ill.	Macon, Dublin
Stay bolts broken Rigid bolts leaking ¹ Flexible bolts leaking ¹ Felitales closed ¹ Telltales closed ¹ Telltales stopped up ¹ Stay bolts not drilled ² Crown sheet leaking . Other sheets leaking . Other sheets leaking . Firebox sheets bulged Firebox sheets bulged Firebox sheets bulged Firebox sheets bulged Firebox plugged Arch flues leaking ¹ Flues plugged Arch plugs leaking ! Forsible plug leaking . Barrel leaking . Dome leaking . Dome leaking . Dome leaking . Washout plugs leaking . Safety valve missing . Safety valve stuck Safety valv			3	3	248		19		::::		2	1		20	1
Rigid bolts leaking 1	***			****	5 3	****		****							
Fulltales closed 1				2000	47	1	2			22		133	102	1	
Celltales stopped up 1					68	1	2		1000		1				
Stay bolts not drilled 1					25		1	2			1				
rown sheet leaking					9	4.44								****	-
Other sheets leaking				1	29	****	2						****		***
Thes leaking 1		1111	100	100	12		1				1			123	1
lues plugged					5		3				2			7	
rch flues leaking 1															
rch plugs leaking 1				****	2									***	
Rorrel leaking		****	1	150	13	****	1		****						12
Dome leaking					13					200					10
hroat sheet leaking					10										
fud ring leaking	****		1		6							****	1	1	24
slow-off eock leaking			1	1	23 60	****		***	****	****	***	****	****		
vasnout plugs leaking *	****		- 2		- 00	****	1		****	****			****		
afety valve stuck		1													
afety valve leaking					19										
age location improper										17.00					
lage incorrect					25 11							****		10.00	3.5
inhon wrongly applied			2	3.44	39	1111	1111	1	****	1	3	2 1			**
iphon leaking		1	1	1	37	300	1111		133	î		1	1000		
age cocks wrongly located															
lage cocks stopped up					6	****	****	****					12252		
lage cocks inoperative	****	****	****	****	161	****	1			****		2		****	**
lage cock bandle defective		1			7		î	****		7575	77.7	0		****	
age-cock drip defective				10.0	3										15
Orip pipe missing					1	· ven					1				
lipples defective or missing	****				182	911					-3				
Vator glass mussing	****	****	4	****	3					1				****	
Vater-glass cocks defective					8		1								
Vater-glass cock handle defective					1	40.0									
Vater-glass blow-off cock defective			-1		129		3								
Vater-glass tube brokenamp missing	****		****	****		***	***	****	****	****			****	1994	5×
Vater-glass shield missing				****		1			1,655	****			****		
Vater-glass shield defective					1		1								100
Vater glass improperly located	****	1													
ubricator shields missing	2	****		****	9 48		2	-1		-1				****	40
dubricator smeids delective		****		****	11	1750	1	****		47.75	****	****		****	
nlector tank valve defective		1101		1333	1		1000	200		110	3	100	133		
njector tank hose defective					4									1	
njector feed pipe defective					- 5				****	****	- 1				
Vater-glass shield missing. Vater-glass shield defective. Vater glass improperly located ubricator shields missing ubricator shields feetive njector inoperative njector tank valve defective njector fank hose defective njector feed pipe defective njector trottle defective njector steam pipe defective njector steam pipe defective njector boiler check defective njector boiler check defective lab card missing		2	3	***	52 19	449.6						****	***		
nlector steam pipe delective	****		9		31	11303			****						7.
nlector boiler check defective	1010				20	1000	100					1000	1000	1337	30
ab card missing					6	1200	1			I				1	15
ladge plate missing				1100	1	rine's				1					20
Vator glass drip priceing	4070	55.74	4.11		28	0.03	1	****	- 47.	-100	-9.00		15.5		9 -
ater-class drip defective		****	33.	8.00	2 2	5453	1	****	****		633				**
ab card missing, adege plate missing, fre-box plug not secured, vater-glass drip missing, vater-glass drip defective, vater-glass drip wrongly located, age-cock drip improperly located, fre-box sheets corroded, fre-box sheets corroded.				3.22	2					3				diam'r.	00
lage-cock drip improperly located	1985	Y. Y.				1.113	-03		4959	1149	. 73.1	14.00		la.i.	16
Tre-box sheets corroded						3000	144			-124					4
Tire hose defective		10000	2		259	I	6	77.7	6	- 17	21	1		1777	7.
		-	_			_	_	-	0	4	_		-		-
Number of defects	2	8	21	7	1,715	2	54	4	6	[0.	39	9	1	29	
ocomotives owned	6	31	10	100	991 695	2 2	30 15	2	2	***	15	15	1	2	
ocomotives defective	2	4	5	2		17	10	3 2 0	Í	î	11	23 7 0	1	2 2 2	П
ocomotives ordered from service	- 2	- 6	- 67	0	33	O	3	0	Ô	0	-7	n	n		1

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Macoupin County.	Maine Central.	Malvern & Freeo Val.	Mammoth Cave.		Manistee & Grand R.	Manistee & NE.		Mansfield Ry. & Trans,	Manufacturers Jet	Marcellus & Otisco	Marianna & Blomtstown.	Z	Marinette, Tomahk. & W.	Marion & Rye
stay bolts broken. Sigid bolts leaking 1 Plexible bolts leaking 1 Plexible bolts leaking 1 Pelitales stopped up 1 Stay bolts not drilled 2 Trown sheets leaking. Other sheets leaking. Other sheets leaking. Other sheets leaking. Plues leaking 1 Plues leaking 1 Plues leaking 1 Plues leaking 1 Plues leaking 2 Prob plugs leaking 3 Prob plugs leaking 3 Prob plugs leaking 4 Prob plugs leaking 4 Prob plugs leaking 5 Prob sheet leaking 6 Prob sheet leaking 6 Prob sheet leaking 7 Prob sheet leaking 7 Prob sheet leaking 8 Prob sheet leaking 9 Prob sheet sheet leaking 9 Prob sheet leaking 9 Prob sheet leaking 9 Prob s	8	145					5	2							18
Rigid bolts leaking 1		1	****										****		***
Textible bolts leaking	000	6	000		331	311	311	511	200	111	600	335	15.55		
Celltales stopped up 1	1	7	2.1.							1		1	***		
tay bolts not drilled 2					25.00	745.			25.00		2121		3	1	
rown sheet leaking					Sec.	****		2	****	T	****	1000			1
Firebox sheets bulged	1	*****				0000		1.00	1000						
flues leaking 1		0.000	3.25			***				1	1	****	10		
flues plugged		*****	****		1000	1		****	2	****	20	***	13	****	
reh plugs leaking 1	77	111111			0101		000	1		::::					500
usible plug leaking							217.		2002						
Barrel leaking	1	*****	2.44								4.55	13.0		***	***
Throat sheet leaking	i		"i		::::	1			100						236
fud ring leaking.	î	1			1155	1500									
Blow-off cock leaking	1	1							1		5.55				
Vashout plugs leaking 1		2	****		****	****						****	11757		
afety valve missing					1111	13.	100		100						
afety valve leaking	2.4.		2.00			2222							44.00		
Sage location Improper													2161		
lage incorrect	****			1		17.5			1	100	113			160	100
inhon wrongly applied		1	2		3			1	1	1.2	100	1	1	2	1.,
iphon leaking									****		****	7000		Comme	-1
age cocks wrongly located		4			****	****			***		***	-	***	0.0	
lage cocks stopped up		1		1			1	2	1	1		111	****		100
age cocks blowing		3						1000	1777		E5+2		2		- 1
lage-cock handle defective	***				-			2	1			1	4.00	1444	113
rage-cock drip delective		*****	****		+191	****			****		15.5	100		111	173
Sipples defective or missing	100									-	1				
Water glass missing		4		3	***	100			****	***		2	7	+++	777
Water glass stopped up	***	1	3	+ - 4-	***	****	444							****	7.23
Water-glass cock handle defective			100			16.5	122	3.	2	1	1				
Water-glass blow-off cock defective.	0.1.	2	2					1	1		1		-5-5	4.55	111
Water-glass tube broken			****	1671		4424	***		1000					***	818
Water glass shield missing	i.		115	1	2	1 1	4	125	î	1		100			180
Water-glass shield defective	1	14	4	1		1	1	100	VYEL	3	2			4000	-
Water glass improperly located	9.34	2.00	298	1 44 5	2,000	244							228	2727	
Water-glass shield missing. Water-glass shield defective. Water glass improperly located Lubricator shields missing. Lubricator shields defective Injector inoperative.	1	12		1	-0	1	0	2	1	1			0	***	->-
niector inoperative	100			1.3	1000	****	2.5		7.7.4	4	2000	1	1194		
njector tank valve defective				1100	. I alaine	lee's			****			- 900	555	1000	199
nlector tank hose defective	413	1	1	T= 2.3	***		- 44		1				2	15.4	
njector throttle defective	***	1	1	1000	CHIE	252	258	100	3	***	1		333	100	
nlector steam pipe defective		CHARLES	2												
njector delivery pipe defective		1	1	5259	alai	9525	10 FW		12.00	- <+)	-2-2	4.543	124	1.500	-8
njector boiler check defective		1 2	- 6		7	T	1	9391		2	1	T'i	+2+1	1000	
Badge plate missing	****	21	2		2					2	Sec.	2	1		
Fire-box plug not secured		*****		***	iree.		1	***		218		3	69.5		
Water-glass drip missing		+ (- (-)	1111	.8.		- 641	110	717	Ser.	1	1555	-	***		
Water-glass drip wrongly located	1.27	11.7	- ***		200		200						787		
Sage-cock drip improperly located		Lucia	- 741	S.V.	Cov.	-711	-	VA. 9.				+3+	12.0	155	-11
fire-box sheets corroded			-	-39			112	17.0	-9.1	***	100	+ × ×	(F8'w)		91
Fire hose defective	7		0				1				1	3	-14		
njector inoperative, njector tank valve defective, njector tank hose defective, njector feed pipe defective, njector from the defective, njector throttle defective, njector objector steam pipe defective, njector objector defective, njector objector objector objector defective ab card missing, Badge plate missing, Fire-box plug not secured, Water-glass drip missing Water-glass drip defective Water-glass drip wrongly located Gage-cock drip improperly located Fire-box sheets corroded, Fire-box defective Unclassified steam leaks Number of defects	24	241	31	13	12	8	16	13	17	14	26	lŏ	34	-3	-
11000000	-	214	91	10	10	7	10	-	1	- 14	19	-	7		-
Locomotives owned	8	119	3	11	3	- 1	18	- 4	9	5	3	51 -151	14	10	
Locomotives defective	4	79	4	0	-3	2	18	3.	2	7	13		-8	2	
Locomotives ordered from service	0	11	0	0	()	19	(1)	(0)	I	(0)	0	()	()	300	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Marion S, Shovel	Mark M	Marmet-Haim Coal & C.	Marshall & East Tex.	Maryland &	Maryland, Del. 4,	Maryland Elec- tric Rys.	Meadville & Sum- merville.	Memrhis, Dallas & Gulf.	Mercer Valley.	Michigan Central.	Middle Tennessee,	Midland Terminal	Midland Valley.	Milliamen A for T han
Stay bolts broken			0		n						161				
stay botts broken Rigid botts leaking ' Flexible botts leaking ' Felitales closed ' Felitales stopped up ' Stay botts not drilled ' Frown sheet leaking ' Flore sheet leaking ' Flore sheet leaking ' Flore sheet leaking '	15.1	1	****	200	****	****			****	****	2 9				
Celitales closed 1			1								6	- 1			1.0
Celitales stopped up 1			1				****	****	1		26	1		1	
rown sheet leaking	0		2		****	. 1	333	****	****	****	15			****	l.
Trown sheet leaking Pitre-box sheets bulged Pitre-box sheets bulged Pitre-box sheets bulged Pitres plugged Arch flues leaking the sheets leaking the sheets Pusible plug leaking Barrel leaking Oome leakine											14			3	1
rire-box sheets bulged									1	****	2	1			
Tues plugged	****	****	12	****	****	****	****		****		8	10	****	2	1
rch flues leaking 1			12									10	144		15
rch plugs leaking 1						A.		1544			8				1
usible plug leaking	1					1124							1177	***	ŀ
lome leaking		111			20		111		Ti	1111	3	2	****	2	Ł
reh flugs leaking 'reh plugs leaking 'sarrel leaking sarrel leaking hroat sheet leaking flud ring leaking sarrel leaking hroat sheet leaking flud ring leaking sarrel leaking flud ring leaking sarrel leaking flud ring leaking sarrel leaking sage incorreet sage incorreet sage incorreet sage incorreet sage incorreet sage incorreet sage occks mongly located sage occks mongly located sage occks stopped up sage occks stopped up sage occks blowing, sage-occk handle defective age-occk handle defective sage-occk drip defective or missing sater glass sinsing, sater glass stopped up vater-glass occks defective sater-glass stube broken samp missing sater-glass shield defective sater-glass shield defective sater-glass shield saters shield saters shield subricator shields defective sater glass shield saters shield shield shield saters shield saters shield saters shield shield sh	24.6	****									3	1		4	0
lud ring leaking	2								000		17			3	
Jashout plues leaking	2		****	••••	••••		****	••••	2		23			'ii'	1
afety valve missing	1		1						100	100	01		1331		C
afety valve stuck															į,
alety valve leaking			1			1			1		· ·	4000		1	-
age incorrect	2233	133	53.53		****		7751	****	****	****	3	****	****		
ial-glass missing											8				
phon wrongly applied		1		1	2		1		2		000	1	3	1	
age cocks wrongly located	****	****	****		1	1							••••	3	-
age cocks stopped up	1111						****		1		8			100	E
age cocks inoperative				1					3		27		2		1
age cocks blowing	2	2		****			e e e e		1		15			12	
age-cock drip defective	7111		211	****	i	1					1	****		2	
rip pipe missing							11.5		2		î			1	
ipples defective or missing	++++	***		****									1	***	
later glass missing		1			3	4		1		***	*****	1		***	
ater-glass cocks defective		2	i		335	333		100	2		2		****	2	-
vater-glass cock handle defective									2						
Ater-glass blow-off cock defective.		1	1-2-						1		15	1		3	÷
amp missing	****	25					****		100	***		1		****	-
ater-glass shield missing	2	1							1	5	4		3		ì
ater-glass shield defective			1			1	1		4		20				-
tibricator shields missing	1	1	0	999	2	4	9		5		12	9			-
ubricator shields defective						i					2				2
ector inoperative	1		2					415						2	1
dector tank valve defective	****								-						
Jector feed pipe defective.	1101	1111					3	100	1		1	1000	***	8	
ector throttle defective	1	1	1			5	2		3		4		1	6	
ector steam pipe defective	right.					***			3			****	1	18	
ector boiler check defective	1			00		0.00	ore.	0.60	0.14		14	9		17	+
b card missing	3		2	Val.				1	11		4		3	7	*
adge plate missing	3	3	2 .		44.5	1	1000	1	3 .		11		3	2	
nter glass dein missing							-(200	3 .			11	100		
ater-glass drip defective				73	917	979				337		- 3		3	**
ater-glass drip wrongly located	****								erer o						
age-cock drip improperly located												144			
re-box sheets corroded		· AVA			G-1-		(44)	Che a	0.00	34)		***			•
re hose defective	2		2		2	12		200	9		35	2	3	74	*
Number of defects	-	-	-	_	-	35	6	3	-	G	531	30	-	305	
	-		-	_	-	-	-	-		-		-	-	-	
ecomotives owned	3	3	2 2	8	0	13	4	3 2		35	634	3	7	38	
ocomotives defective	3	â	212	7	-15	7	2	1	H	5	215	4	4	42	
beomotives ordered from service	Ď	ii.	-	D	11	D.	n.		2	n.	12	ů	0	11	

Number of locomotives reported with this defect.
Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	1.0						1 -						7	_	111
	Z	H	8	ast-	Sed	100	est	ė	VIS.	3	Minnesota Trans- fer,	3	en-	i	-in
	ot	8		E	E.	118	*	¥ .	=	oto	F	26	0	3	3
Defeate	lio.	13 9	Loc	E -1	N N	P.M.	olis a,	sota d	Z	ak St.	d .:	36	707	56	8
Defects.	E I	0.5	St.	E P	Day.	2000	9.5	to E	3	A P	fer	18	E	ToT	T.
	Bra	L	ne	nei	L	100	nea	the state of	d	i i	nex	:≥	ijs	2	000
	Mineral Point &	Minneapolis & River.	Minneapolis St. L.	Minneapolis East- ern.	Minneapolis, I	Minn., St. Paul S. S. M.	Minneapolis West ern,	Minnesota ternat	Minn. & N. Wis.	Minn., Dakota West.	=	Miss., Ark. Western.	Mississippi tral.	Miss. Riv. Ter.	Missouri &
	-						-		N	-	~	× .	100	-	V
tay bolts broken. ligid bolts leaking 1 lexible bolts leaking 1 elitales closed 1 elitales stopped up 1 tay bolts not drilled 2 rown sheet stopped up 1 lay bolts not drilled 2 rown sheets leaking. lre-box sheets bulged. lues leaking 1 lues leaking 2 lues plugged leaking 3 lues leaking 3 lues leaking 4 lues leaking 4 lues leaking 5 lore leaking 6 lore leaking 6 lore leaking 6 low-off cock leaking 7 low-off cock leaking 8 low-off cock leaking 9 low-off cock leaking 9 low-off cock leaking 9 low-off lock leaking 9 low-	1	1	98			48		4	• • • •	5		2000	2	Б	
ligid bolts leaking 1lexible bolts leaking 1	L.S.	13.0	2			14									
elitales closed 1			2			3						200		****	
elltales stopped up 1		200	1	****	***	31		2			. 7		4		
tay bolts not drilled 2	4.44	2	2	1	1	4				1					
ther sheets leaking		1	4	1000	100	5	100	200			133	100	1111	1111	
ire-box sheets bulged	2		10	7.11				1000		100	100				13
lues leaking 1	2					1						1			
lues plugged	1	4555	17					22.2		58.65	1				
rob place leaking	1210	1855		****	****	9	****	****			****	5.57		****	
usible plug leaking		13.0	330	100	****	-	1111						10000		1
arrel leaking	1111	1000	1					3.90	100			100			1.
ome leaking			1			1550					1.79.2	1.31	2250		20
hroat sheet leaking	6	2000	2			11			,0,5		1211				1
low-off cook leaking	17.	****		****		1	. 5.5						****		100
Vashout plugs leaking I		1888	3	7.7.0	17.75	9	12.50		****	1.93	1677	190	1707	1173	15
afety valve missing												1000			1
afety valve stuck					eri.										
afety valve leaking			*****				V . 8.		1126		2000		5424		
age location improper						25.57	2886			1840	13.53		4.2.2	5000	++
ial place missing			****			2	***	****	****		****	1177			
phon wrongly applied	1	8	3			23	0000	9	1151		1	1	1	5	1.
phon leaking						1					4477	7444	****	2	
age cocks wrongly located	+99.	- 53.				er.									
lage cocks stopped up	1	1	13	-1	17.84	8	1	-	1.42.	1	3 2	****	* * * *	1	
lage cocks blowing	4		4	4.44		7	7	1111		****		i	2	11.00	*
age-cock handle defective			2		1210		13	1		1	1				100
age-cock drip defective	· ·					4			in						
Orip pipe missing	17.00		1				1400				1400	4900			100
Voter glass missing	19.15	3,5 4.7	*****	****	22.55		****	1507	****	1177	2577	7955	++++	1-50	1.
Vater glass stopped up		20	*****			10.50				2.55		0.977	****		1
Water-glass cooks defective	1.60				4.2.	1	244				12444		2000	1	
Water-glass cock handle defective		1930		3501	-594	3	1335	3		عوبادا	95.52	1.199			
Water-glass blow-off cock defective.		1	3			19	4893	3		1	-5	1	1		+4
amp missing	4,000				50.50		4-10				1000	-			
Water-glass shield missing Water-glass shield defective. Water-glass shield defective. Defective defective. Defective defective.	133		1		1111	USI	200		1	1		100		1.00	10
Water-glass shield defective	4	9	10	1		5	1.12			Car.	2	1	11	1	1.0
Water glass improperly located	6050	112	Service.	1415		1	2.00	18					1000		
ubricator shields missing	8	2	11	2	1222	1	2323	18	1	2	4	1.643	2		
pleater increasity	35.88	3.8.			2,48,4	1	14.5.5		5.7.5.7	1000	9	24.43	1		
niector-tank valve defective	1000	1000					12.	44.47		1117	-	F. 617 7	1000	1100	10
njector-tank hose defective						2									50
njector feed pipe defective							1		1277	717	212	1			0.0
njector throttle defective		****	2		6483	4	(49.)	1000	100	***	1000	1	2		25
njector steam pipe defective	55×	DAY	9+4+>-	700	1440		1000	3.000		10000		ver:	1	1	23
niector boiler check defective	100	100			12422		1000	1-21	1000	1200	70.00	14.0		1	
ab card missing	2	4	3			2	1000	9		1	15	1			120
Badge plate missing	200	6	-21		1.00	53	100	4	200		6				
re-box plug not secured	-			100		26	(200)	9 4		-	1-5	1000	1555	-44	
Vater-glass drip missing		15.00	9		1111	1810		1	1577	1.52		1	1077	1221	0.1
ubricator shields defective a dector inoperative of a control of the control of	0000	112.43	25574	314	5.50		1100	10.0	1414	20,41			181	2401	11
age-cock drip improperly located.	SN.	100	200.0	122	1.00	123		123	-				122		100
ire-box sheets corroded	116.69	1981	155010	1021									SIN	1191	
ire hose defective	-	1015	1.000		450	70			-61				-151	445	
Inclassified steam leaks	0000	1	22	-	2000	13	100	1		1-00			I	2	-
Number of defects	37	35	261	-5	1	323	1.	āā	2	1.1)*(11	27	111	3
ocomotives owned	13	11	219	39	3	195	1	11	7	4	30	(1)	17	7	
ocomotives defective	10	10	TWO	- 2	P	:33	T	711	Ť	1	77	T	10	3	
THE PERSON AND PERSONS ASSESSMENT OF THE PERSON AND PROPERTY OF THE PERSON	4.10	4.57	A 17 mm	-		- 515					1971		10		

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Missouri & N. Ark.	Missouri, Kans. & Tex.	Missouri, Okla. & Gulf.	Missouri Pacific.	Missouri Southern	Mobile & Ohio.	Monongabela Con- nect.	Monongahela,	Mont., Wyo. & S.	Montour.	Montpeller &	Morehead & North Fork.	Morenci Southern.	Morgan's La. &	Morgantown &
Stay bolts broken. Rigid bolts leaking 1 Plexible bolts leaking 1 Pelitales closed 1 Pelitales stopped up 1 Stay bolts not drilled 2 Drown sheet leaking. Drher sheets leaking. Drher sheets leaking. Pire-box sheets bulged Plues leaking 1 Plues plugsed Arch flues leaking 1 Preshots leaking 1 Preshots leaking 1 Preshots leaking 2 Preshots leaking 3 Preshots leaking 3 Preshots leaking 4 Pushle plug leaking 3 Barrel leaking. Dome leaking. Droat sheet leaking. Houd ring leaking 3 Bow-off cock leaking 4 Hud ring leaking 1 Bow-off cock leaking 4 Bow-off cock leaking 1 Boy-off	40	182	35	461	6	136	8	17			1	5	1	33	3
Rigid bolts leaking 1		62	1	74		2	1		***		+.+++	*,*>*		1	
Palitales closed 1		9		13		11		2					1		1.
Celltales stopped up 1	4	74	3 2	161	1 2	52	1		2			1	3	1::::	
Stay bolts not drilled *	2	10 37	1	27 55	2	1 3	1		474	1		2223	5	.5.2.4	0
rown sheet leaking	1	96	10	98		9	22.4	1	111		12.5	1	1		
Fire-box sheets bulged	4879	6	2	37	2	3	****	1							
flues leaking 1		59	151	34	'n	3 41	32			8		1 2	ï	2	100
flues plugged	000	104	191	9	1	41	32	677,5	***	9	100			-	
rch plugs leaking	100			3	100	7		33					1477		
usible plug leaking														****	450
Barrel leaking		6	****	33 20	in.	5 7	1	11.55	***	100	44.0			1	
Dome leaking	1	11	4	26			****	1	***	1	100		17.77	*	
fud ring leaking		51	2	54			8	1	100	2					
Blow-off cock leaking	1	63	3	63		9	8	1					des		
Washout plugs leaking 1	1	138	5	130	200	2			***	****	***	1		- ***	***
lafety valve stock	100				0.0		100				100				11
afety valve leaking	1		1	20											
lage location improper	4,000	1	-00.5	1		1				****		****			40
Dial plass missing		2		14	111		333	1011						1100	7
Siphon wrongly applied	14.00	6	4	15	i	4	9	4	1	1		1 1	4		
iphon leaking	1	29 12	2	40		11	2	3			****	1		1	44
lage cocks wrongly located	****	10	50.74	48	ï	3	****	****	***	****	****	6	3	3	
lage cocks inoperative	2	32	3	63		10	5550	3	000					1	ŭ.
lage cocks blowing		54	4			23	9					6		4	10
lage-cock handle defective		3	1	15	***	7	****				****	****		1925	
Orio pipe missing	110	3	9	179										****	
lipples defective or missing		7	20	1											
Vater glass missing		****		1	4.44	20	23			3-39	2	****	2	4.43	
Vater glass stopped up	***	9	1111	51	***	3	333	1	7.	333		'n	1073	1	15
Vater-glass cocks defective. Vater-glass-cock handle defective. Vater-glass blow-off cock defective. Vater-glass tube broken	110		1	7		2				1.0			4		7.
Vater-glass blow-off cock defective.)	36	8	36	1	20 12		1	***	1		2	1	1	
amp missing		3	1277		***	13		2000	***	****	****	****		i	
Vater-glass shield missing	6.14	1	3	116	111	3	5235					1	2		70.
Vater-glass shield defective	7	5	1225	64	222	3.		5	2	45.25	3	5-8-	0.20	3	
vater glass improperly located	100	15	7	11 162		23	11	1		1	1	2	6	3	
ubricator shields defective		11		5		15	4	1.	111			0			
Amp missing. Vater-glass shield missing. Vater-glass shield defective. Vater glass improperly located. ubricator shields missing. ubricator shields defective njector inoperative njector tank valve defective njector feed pipe defective njector feed pipe defective njector feed pipe defective	1	6	8	1		3	+100				3	3			
njector tank valve delective	9	13	2	30	***	2	1		***	-944	9.55	4		1	150
nlector feed pipe defective		32	9	36	440	11	1	114,	711		0024	200	****		10
njector throttle defective	6		- 6	-50.		-8	3	1				4	1	5	n
njector steam pipe defective	1	69	9	45		4	1	11:25				1		1	
njector delivery pipe defective	***	34	12	29 16		8	3	1	111	177		9			
ab card missing		32	9	.81		18	1					2	1	1	
njector steam pipe defective njector delivery pipe defective njector boiler check defective ab card missing. sadge plate missing. Vater-glass drip defective Vater-glass drip defective	1	75	4	260	in mind	33	3	4	1			12.84	2	.3	
tre-box plug not secured		1 2	R	28		228	1111	14.11	-24	14.			1	3	124
Vater-glass drip defective	1	0		2		1	1000					100			1
Vater-glass drip wrongly located		*****			111								300		1
Vater-glass drip defective		177	1971	11		1	1077		175				++++		
ire-box sheets corroded		1.2	1	49	***		9	1.404	110			0.0			
nclassified steam leaks	5	359	40	295	1	38	4	5	216		2	8	ii	8	10
Number of defects	84	1,881	378	3, 189	16	845	139	52	6	16	9	51	47	84	1
ocomplives owned	20	537	27	1, 161	7	259	34	34	7	7	10.	5	5	65	1
ocomotives inspected	28	696	35	1,029	4.	407	25	36	2	2000	6	5	770	-50	ľ
ocomotives defective	24	540.	34	852	4	264	25	15	2	2.	3-	14-	7.	30	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects. Stay belts broken	Morristown & Erie.	Moshassuck Valley	Mt. Hope Min- eral.	Mt. Jewett, Kin.	Muncie Belt.	Munising, Marq.	Muscatine, North	Nacogdoches &	Napierville Junc- tion.	Narragansett Pier.	Nash. Chatta. & St. L.	Natchez, Col. & Mobile.	Natchez, Urania & Rus.	Natnl. Malleable C. Co.	Nelson & Albe-
Stay bolts broken					11	4					91	9			
Rigid bolts leaking 1	****		****								3			****	•••
Telltales closed I	****	100				1					36				
Telltales stopped up 1					1			1	6.000		45	****			
Stay bolts not drilled 2	1		****	****	4	2					-3	****	****		
Other sheet leaking	****						1	115			10				
Firebox sheets bulged											2		1		
Flues leaking 1	2				1						15	****			
Flues plugged	****	22.50	****	****				****		2		9	****	****	
Arch plugs leaking 1	****	1													
Fusible plug leaking															
Barrel leaking		S			1		****			****	3			****	
Dome leaking	****			****	****		i	135	****		1	130		0000	
Mud ring leaking					4				1		4			44	
Blow-off cock leaking											1				
Washout plugs leaking 1	****					****		****	2474		14	100			***
Safety valve missing	****			1811	****			1111	777			C			100
Safety valve leaking											2				
Gage location improper										***					
Page incorrect		****	****						****	* + > *	*****		****	****	
Sinhon wrongly applied	****				3		4				2	1			
iphon leaking	1	14.				2222			-+		4				
lage cocks wrongly located													4834	-111	-93
age cocks stopped up			****	2					17.17	1000					
Page cocks blowing	2	136			2		1		****	****	16				
age-cock handle defective					1		1								
age-cock drip defective			2.50	****		****									
onp pipe missing	****			***		****	****		*+**	1170		200	****	****	
Vater glass missing	2	2	2		300	1111	111				127	6000			
Vater glass stopped up															
Vater-glass cocks defective			****	1	1			****	2275	****				2577	
Valer-glass cock handle delective	****	33.	333	"i"	***	****		***			1		****	****	
Vater-glass tube broken		0000						2-63							
amp missing							1		2442			***	2551		
Vater-glass shield missing							3	1				4	1		
Vater glass improperly located	****	1.3	35.11		0					100			0.00	1170	
ubricator shields missing	1		1		1	3		1			*****		1		-
ubricator shields defective	airi		****	***	7	1.00				- = > 0					
njector inoperative	4,695	43.84		****	****				***	***	*****	2.00		****	
njector tank hose defective	2011	101				1111			1		1	5025	5351	1	
njector feed pipe defective	1		1323									liber			
alector throftle defective				211	3	1333	·	****			4			****	-40
njector steam pipe dejective	1	****		25.24		5155		3500	1101	5.55	18	2224	22.03	****	
njector boiler check defective	1					13.					3				
ab card missing	2	3			****	1		1		ière	T	4	1	2	
im has plan not sooured	.5	3	4	12.24		1453	1	20.00	255	1.50	- 0	Set a f		1,000	
Vater-glass drip missing		****		****	1000	1000	33.	1000	****	2000			200		000
aler-glass drip defective	2.00		10.00		1						****				
ater-glass drip wrongly located			***	18.41	1181					1145	10000		sees		- 1
ire-hov sheets corroded		4.00	***	3483	***	5.20	X	***		500.5	11210-1	5-1 (5-1	2(-)	9-4 - 9	- 4
ire hose defective	247	6.00	-	1981	1111	19.24	110	244	2193	1557	141101	2000	2001	Vicinity.	0.0
pelassified steam leaks	T	1000	0,48	1	15		2			is di	50	and part	-1-1	-1-1	
Number of defects	22	9	7	5	61	U.L	16	1	1	2	110	24	-1	11	Ī
ocomotives owned	A	-	-	7.	14		-	7		30	25/1	-		-	
ocomotives inspected	7	8	8	1	111	7	17	7		ű.	Do	1	ī	or or	
ocomotives inspected	5		4	1	17	91	A				112	1	1	-01	
Locomotives ordered from service	D	-0	ij.	1	1	Ü	11	-10	0		Ī	0	0	0	

63667---12----5

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Nevada, Cal. & Oreg.	Nev, County Nar- row G.	Newark & Marion	New Berlin & Winfield,	Newburgh & Southshore.	New Castle & Ohio Riv.	N.J., Ind. & III.	New Orleans &	N. Orleans, Mo bile & Chi.	N. Orleans, Nat	New Orleans Ter- minal.	N. Orleans, Tex	New Park & Fawn Grove	Newport & Sher- man's V.	New River, Hol-
Stay bolts broken				1	47		11	2		U.	4	4		7	15
Stay bolts broken Rigid boits leaking ' Flexible bolts leaking ' Felltales closed ' Felltales stopped up ' Stay bolts not drilled ' Crown sheet leaking. Other sheets leaking. Other sheets leaking. Other sheets leaking. Other sheets leaking ' Flues plugged. Arch flues leaking ' Flues plugged. Arch flues leaking ' Flues plugged. Arch glugs leaking ' Frusible plug leaking. Barrel leaking. Oome leaking. Bornet leaking. Blow-off cock leaking. Washout plugs leaking ' Safety valve missing. Safety valve stock. Safety valve stock								****							
Flexible bolts leaking 1															
Pelitales closed 1	4				6	1	1			****	4			****	
Stay bolts not drilled 2	2			1		2	4	1.5	2			3	1	1	***
Crown sheet leaking															
Other sheets leaking						.00	2				2				
Fire-box sheets bulged										****					
Fines plagged	*****	****		4		1	****		2		6			****	+++
Arch flues leaking 1									2				3000	1777	***
Arch plugs leaking 1															12.
Fusible plug leaking				****											+ 4 4
Barrei leaking					1		****	1	***	****			****	1	
Phroat sheet leaking											****	95	****	****	***
Mud ring leaking			2		2					1100	2000			1111	30
Blow-off cock leaking	1			****							2	1			
Washout plugs leaking 1		***	1	****				1					1	-1	
safety valve missing	*****		****		****	****	2772	****	****	****	****	****		****	
lafety valve leaking					****	****		****	****		2		****		35
age location improper														3.00	10
lage incorrect															
Dial glass missing				****				1		4444				****	20
Sphon looking		****	40.00	2	2000	3		2000	2 2		****	2	- 1	1	
lage cocks wrongly located		100					1							****	***
lage cocks stopped up	1		1								1				
lage cocks inoperative					****	2		1				1			55
lage cocks blowing	*****			1	4	****	2	7	3		1				
lage-cock flandle defective		1				2	>-		****		****		****	****	
Orio pipe missing	2		200					2	733	7000		****	1		
lipples defective or missing	· ·														
Water glass missing		80.00		1		1			26				1	1	
Vater glass stopped up								***						****	
Vater-glass cock handle defective		****		1277		****	****				****	****	****	****	
Vater-glass blow-off cock defective.	2	1000			1	5.0			1			2		1000	***
Vater-glass tube broken				1											
amp missing		1304		***		- 12.1		2454			444.4				
Vater-glass shield missing	9			****	-0		****	1000		8		• • • •		4224	***
Vater glass improperly located	0	100	10.00	2000	2.22		1	****		0			****	****	
ubricator shields missing	1	6			1	2		1		3	4		1		
amp missing Vater-glass shield missing Vater-glass shield defective Vater-glass inproperly located Jubricator shields missing Jubricator shields defective Nicotor properties	× 1715									3 2					
				44.89	1				4 (0.0						
njector tank valve defective njector tank hose defective	1		• • • • •			2	****		- 9		****	****			**
					27.			177	1.50		****	i		****	**
njector throttle defective njector steam pipe defective njector delivery pipe defective njector boller check defective ab card missing.	2	1				6			3 4		3	3		100	***
njector steam pipe defective	1			1				3	4		3	3			2.5
njector delivery pipe defective	2	****			1	1		1	00						
ab eard missing	-			5565	17	2		****	1	4	4				
Badge plate missing	1	2		-1	17	2				5			1	-	
ire-box plug not secured						2000	6		8						C.
adge plate missing Tre-box plug not secured Vater-glass drip missing	*****				1441	240	6	2		ï	2				
vater-glass drip delective	*****	2424		444	444	1354	153.0			***	****	****			
Vater-glass drip missing. Vater-glass drip defective. Vater-glass drip wrongly located. lage-cock drip improperly located. ire-box sheets corroded. ire-box defective.	5211119			1830		1000	300	1.55	177		****		****	****	**
'ire-box sheets corroded									12.0					100	
	ii.	4						6664		- 6-4					1
Inclassified steam leaks	- 11	4	5	3	5	12		4	6		1	1		2	
Number of defects	43	15	10	17	93	41	25	28	61	18	47	38	7	16	
ocomotives owned	12	5	1	3	19	-2	- 2	32	45	10	15	62	1	- 2	-
ocomotives inspected	15	15	2	3	44	8	6	18	40		33	27	1	7	
ocomotives defective	.01	6	27	3	26	0	-5	-9	30	0	31	18	1 0	5	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	New York & Penn	N.Y., Auburn & L.	New York Cent. & H. R.	New York, C. & St. L.	New York, N. H.	New York, On-	New York, Phila.	New York, Susq.	Nisgara Junction.	Nittany Valley.	Norfolk & Ports- mouth B. L.	Norfolk & West- ern.	Norfolk Southern.	N. & S. Carolina.	N'thoton & Bath.
tay bolts broken		4	1,488	340	1,745	88	2	26	2		8	156	75		
ligid bolts leaking 1	:::		13	7 3		4		4			1	16	4		11
lexible bolts leaking 1			65	23	47	7		1			1	20	Sec. 5	0.000	
eattaics closed "elitaics stopped up i itay bolts not drilled i rown sheet leaking ther sheets leaking. Thebox sheets bulged Tues leaking i Tues leaking i	3	3	220	26 46	11	5		1		i	2	27 29	6		
rown sheet leaking		000	19	10	2	1	1	2			1115	16	2	0.00	
Other sheets leaking		1	118	21	17	22		6			1	132	8		
irebox sheets bulged				4	6							5	***		
lues plugged			44	9	1		1	2	111	1	6	66 15	2		13
rch flues leaking 1	16	100	2			251				1.0.					
rch plugs leaking 1			75	13	1	12	1.55				****	1	2000		
usible plug leaking	***	i	90	1		1		3				24			
nes leaking treh flues leaking treh flues leaking treh plugs leaking treh plugs leaking sarrel leaking treh plugs leaking treh	10		59	13	3 3 13 4 1			1				21	2		
firoat sheet leaking			9	5	3	4	1		150		1335	5			
fud ring leaking. Slow-off cook leaking. Vashout plugs leaking. safety valve missing. afety valve stuck. afety valve leaking. safety safety in improper.		100	193	16	13	13	1	4		1		26 21	4		
Vashout plus laking 1	111	181	151	26	1	15	2	5	120	100	1	-81	1	****	1:
afety valve missing			*****						110			1			1
afety valve stuck	200			1000					1.0		12.00	000			
age location improper			2	1		150	200	100		15.5	1144	11			
age becomes	1000		1	1	2 1 50	1000	1	VIII.	100	1111		20			
plai-glass missing. iphon wrongly applied iphon leaking. age cocks wrongly located.	44.4		10	2	2	15		3	100	11.27		16			
iphon wrongly applied	1		14	6	9	115			1.0	2	1	23 90	4	1	0
are cocks wrongly located	1.0	111	- 6	4	Ī	11		. 0	100			190	***	****	
				- 64	80		200	1	200			17	2		1
age cocks inoperative	9	1	72		30	200	Cross	6				59	3		100
age cocks inoperative	-	4	98	14	(8	20	0	1				167	19	13,3	-
age-cock drip delective			1	3	9	4		1	1000			21	3		100
Prip pipe missing			72	1	21 23 37 2	14	***	1711		+55.		17	Sec.		
lipples defective or missing	**	500	21	- > - > - >	1 2 3 7 2 2 23 3 3	2	-22-	5-7-	-	-111	***	19		****	
Vater glass missing Vater glass stopped up Vater glass cocks defective Vater glass cock handle defective			1	T-real	3.	1		2.00	220		1000	1	1000		1.
Vater-glass cocks defective	1		43	6	7	2		-	100		1	22	1	1	10
Vater-glass cock handle defective	1,14		53	100	22		100			13.50	1000	-1	5	1	
Vater-glass blow-off cock defective.		Ti.	3	1.2	3	0	L	2	***	2500	1	1	T	1	12
amp missing		100	Sec.							City	0.0		40.00	200	100
Vater-glass shield missing	1	1.93	12.00	6	Projection (3	27.5		124	134	139.0	1	368.	lev.	
Vater-glass shield missing. Vater-glass shield defective. Vater glass improperly located. Abricator shields missing. Abricator shields defective njector inoperative njector tank valve defective njector tank bose defective	1.5	177	5	25	19	1	2192	7+71	100		1	*****	4		1
Albricator shields missing	1	2	6	13	63		2		250	2	î	92	4	1	1
ubricator shields defective	100	100	5	6			****		355			39		1	
njector inoperative	1		9										3		150
plector tank hose defective	i		10		10	P.X.	X . X .	5	1500	2111	1000	28			
elector tank hose defective		200	29	2	8	4		3	100	1		17	100.65		
alector throttle defective alector steam pipe defective alector delivery pipe defective elector boiler check defective ab card missing.	124	1,2,5	69	4	1 10 8 9 6 3 10 20 186 4 6	11		7			-	110	6 1 3 7		10
plector steam pipe delective	***		64	- 3	9	18	1	12	195	- 2	349.4	119	3		1
piector boiler check defective	1	W	15	5	10	6		2	100	400		21	7	000	1
ab card missing	155	1	-56	.3	20	0		2	2	-51		.8	Sie	7.30	
adge plate missing ire-box plug not secured ater-glass drip missing		1500	49	10	186	20		20	2.	I	1,140	15	7	18.84	1
ater-glass drip missing	117		2	100	- 6	1	200		100	600	1	18	1.1		9
ater-glass drip defective	23.5	100				1		1000	200	1.50		1	T		1.
Vater-glass drip wrongly located		150		1-5-55	30300	1122		1535				10111			
age-cock drip improperly located ire-box sheets corroded	117		1	1100	TRAIL	4	****	1300		2000		3	2.1		-
ire hose defective	24.	149 4			4	1917	1211	1111				estar.	211		-
nclassified steam leaks				97		96	1	30		1	1	473	20	1	
Number of defects	18	18	3,729	881	2,533	463	40	162	6	13	27	2, 140	213	4	
ocomotives owned	5	5	1,913	248	1,236	214		101	2	2	8	993	769	.5	1
ocomotives inspected	8	1 8	1,782	438	1,733	308	71	101 49 42	0.	121915	17	1,063	121	7	
ocomotives defective	1 35.	1 3	17178	238	1.185	3181	26	**	D	Ī	1	824	100	0	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	DI OK	Ala-	Northern Central.	Northern Pacific.	Northwestern Coal.	B. B.	ти Ра-	Ocala Northern.	:	Ocilla Southern.	Ohio & Kentucky.	le.	3r de	Oklahoma Central.	Oregon & SEast-
Defects.	Northampton Hert.	180	3	A	al.	St.	Ster 1c.	£	Ocean Shorr.	uth	en	£	River estern.	3 0	00
176160461	E	err	Er.	DI G	40	We	we	Z	50	So	×	5.6	es E	ODD	100
	5	뒫	#	-5	14	ŧ,	5	113	an an	00	00	0	07	ah	108
	No	Northern bams.	Non	Nor	Z	No	No	Oca	000	Oci	Obj	Ohio Electric.	Ohio 1 Wes	OE	Ore
Name & alder Versiland				625					23		****	1	T.	3.6	1
Stay bolts broken			3	020			2		1	1	****		4	13	1:
Flexible bolts leaking 1			1		****								****		1.
'elitales closed 1			1	21			11		3	••••		1			
tay bolts not drilled 3	T		12	38	2					200	1111	****	****	1	1
rown sheet leaking				9	44.60				2					1	
ther sheets leaking	1	****	4	30			1 5		1	****	****			5	
lues leaking 1	î		1	22			2				1				1
lues plugged			3	47		9	6		9				1	3	1
rch flues leaking 1	****		1	10	****	****						***			1
usible plug leaking			9	10	7735				1774	****	****				-
arrel leaking	****			12											I.
tay bolts broken tigid bolts leaking ' lexible bolts leaking ' lexible bolts leaking ' lettible bolts leaking ' lelitales closed ' elitales stopped up ' tay bolts not drilled ' rown sheet leaking ' ther sheets leaking ' ther sheets leaking ' lues leaking ' lues leaking ' lues leaking ' lues leaking ' reh plugs leaking ' reh plugs leaking ' arrel plugs leaking ' arrel leaking ' norat sheet leaking ' low-off cock leaking ' ashout plugs leaking ' ashout plugs leaking ' ashout plugs leaking ' afety valve missing afety valve stuck ' afety valve stuck ' afety valve leaking ' age location improper ' age incorrect. ial glass missing ' phon wrongly applied				7	.,,,							****			1
ud ring leaking	2		3	6			200			****				5	1
low-off cock leaking			1	18					1				1		10
ashout plugs leaking 1			7	59	****	••••	2		1					4	1
afety valve stuck			****	******	****	***	••••	200			• • • • •				ŀ
afety valve leaking		con	1												E
age location improper								****							E
lal plass missing	1000	22.	****	3	****	****	••••						****	****	-
phon wrongly applied			2	48		5	7	1	3		1		2	17.0	b
phon leaking				27	49.25		3						1	2	Į.
age incorrect. ial glass missing phon wrongly applied phon leaking age cocks wrongly located age cocks wrongly located age cocks stopped up age cocks blowing age-cock handle defective age-cock drip defective rip pipe missing ater glass stopped up ater glass stopped up ater glass stopped up ater glass scocks defective ater-glass cocks defective ater-glass topked ater-glass tube broken amp missing ater-glass tube broken amp missing.	****	****	1	25	41-9	2	2	****		1		****			1
age cocks inoperative	2			52				i'	2	2	2	1111	****	2	b
age cocks blowing		***	2	21					1				1	2	Į.
age-cock dain defective	****		5	28	***	17.17	20	2	9	3			****		è
rip pipe missing				59			2	13			****	****		5-57	r
ipples defective or missing				78			3								1
ater glass missing	1			*****		11			****	3				****	
ater-glass cocks defective			2	5				1537	1000	****			****	1	
ater-glass cock handle defective	-45			*****											1
ater-glass blow-on cock delective.	· i	1111	****	117			1	0.0	***					1	
amp missing									1	200	1	œ	****		-
ater-glass shield missing				26	1		3		4						-
ater glass improperly located	****	****		49	4	2					1	1			27
ubricator shields missing			1	246	2	6	4		4	3	1		2	****	*
ubricator shields defective	-21-	2		5					ince						
jector tank valve defective	2457	151	1	4	-4-5					1					-
amp missing, ater-glass shield missing, ater-glass shield defective ater glass improperly located ubricator shields missing, ubricator shields defective jector tank valve defective jector tank hose defective jector feed pipe defective	1			- 5						1	2		T	2	
jector feed pipe defective				27 86	Erne.			1		444				3	
lector steam pipe defective		227	. 2	11			2	2	1	4	2	1	****	2	
lector throttle defective lector steam pipe defective lector delivery pipe defective			4	4	1171	1	1			2.	33	200		2	-
Jector boiler check defective	0	227		6		12.	1	100	1	17.1					
adge plate missing	3	127		362	2	7	2	1	9	2			4	3	
re-box plug not secured				26		9	155		9		3	100	****	****	
jector delivery pipe defective jector beiler check defective ab eard missing, dge plate missing, ire-box plug not secured ater-glass drip missing ater-glass drip mells deserted	0.0	(0.00)		118	1 1 2 2	1		1	120					1	
	13.57	327	444	85		377	100								
we-coek arip improperty tocated		33		17		0000		100	133	***			****	****	
re-nox sneets corroded		.,,1		3				12251	2						
re hose defectivenclassified steam loaks	2	***	10	172		99	31	2	16	6	5	****	2	8	
Number of defects	18	2	_	2. 554	8	-	108	-	168	25	19	3	-	-	-
ocomotives owned		-	-					-			-	4	19	68	_
ocomotives inspective.	1	10		1,464	2	21	66 33 17	5	12 11	4	2221	13	32	10	
ocomotives defective	4	2	35	978	2 2	18	17	£ 2	11	3	2	2	14	14	
ocomotives ordered from service	0	0.	0	-37	17	3	T	47	0	1	1	0	2	2	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Oregon Short Line	OregWash. R. R.	Otto Marmet Coal	Ouachita & N Western.	Ouchita Valley.	Overton County.	Pacific & Eastern.	Pacific Coast.	Pac. Ry. & Nav.	Fajaro Valley Consol.	Panther Creek.	Paragould S-East- ern.	Paris & Mt. Pleas- ant.	Pecos & Northern Tex.	Pelham & Ha-
tny bolts broken	305	74					1		2		2			4	
lord holts leaking a	11	4		****			+347			****			****	3	***
'elitales closed 1	7	2		3.0	1000	1						1717			
lexible bolts leaking 1. 'elltales closed 1. 'elltales stopped up 1. tay bolts not drilled 2.	80 19	11 8			2329			4		2	5	1,000	1	4	***
rown sheet leaking	13	3	0.00		1111	0.00	2111							2	
	17	21								1				1	
ire-box sheets bulged	40	6 5				3		`i		1	2				
diver ningged	63					4				11			1		1
rch flues leaking '	2	13						· · · ·		. 21.					
rch plugs leaking	21	13	277		1111	1111	1111	1111	1884		****		****		111
Arrel leaking	25	9										1845		1	
lome leaking	20	7	****	7-9-	****	****	****	***	1	****					
Throat sheet leaking	38	4						150						1	100
and trig feating. Washout plugs leaking. Washout plugs leaking. Safety valve stuck. Safety valve leaking.	24	10												6	
Washout plugs leaking '	21	12	****		33.	1	****	****	1	***	****	100	1	- 6	***
afety valve stuck								2		43.5					
safety valve leaking	1	1													
Page location improper	1	1		***	****	Y 0 T 0	****	****	****	111		122		1	
Dial glass missing	21	4								****	1	5587	5,5 7.7	+	
iphon wrongly applied	32	12 31		***		1	***	****		+7-3			1	7	
lare cocks wrongly located	5	3.6	44.44		1141	0101			1111	****		****			***
olal glass missing siphon wrongly applied siphon leaking	58	7					-455	1		-1		Jane -		3124	
lage cocks inoperative	69 54	30	1757			1	1						2	2	
Tage tooks media defeative	3	Dis	1-22			1	1		1111		1111				
Fage-cock handle delective	2	1	100				1121			1722	+>+0	****		1	
Orip pipe missing	52 56	29	Day S		49.5	- X - X	T	0		a I	12.50		<	9	200
Vafor glass missing	21,219.2	BIGS	1	1147	e bed		cial	1921	-241		9	2825	2444	43.5	22.2
Water glass stopped up	5.0	1		1000		$-1/\kappa/1$	1	T		83×1	13.5	149.45		1	-50
Water-glass cock handle defective	2	-12			1								300		3.
Water-glass cock handle defective Water-glass blow-off cock defective	10	15		-			-1-1	8101	1		115	2120	4	2	137
Vater-glass tube broken	X1.1 (11)	1 1 7.7	200	9.65.4	000		3×1	-816	2850	27.5		****		****	
	2-2-01	1	1000	1	D	3	1101	-191		2		1 40	. 7 . 0		
Vater-glass shield defective	15 9 20 1	1	-30			41.0		1		-2		1	1	47.27	224
Vater-glass shield defective Vater glass improperly located Labricator shields missing		16	1-54	1	1	2	1	3		111		i	12	2	
				-444		-10-	-						-300		100
njector inoperative njector tank valve defective injector tank hose defective injector feed pipe defective	9				1377	8;		121		2	14.5			1111	250
injector tank hose defective	1	SU-1	7 E-X	. 1.1		1-3	- 1- A	-×+1		1	131	-			23.5
in ector feed pipe defective	12	10		51.0	-0	111				0	-111	4711	+7+1	-1	
	19 25	13			1			T		2	1			2	
Injector steam pipe defective	- 8	1						-000							
Injector boiler check defective	44	14	7			2		-15	- 1	115	- 171	-	1	1	ľ.
Cab card missing	76 55	20	-				2	3	717	4	"6"			2	
Fire-box plug not secured Water-glass drip missing	4	2		110			-	-15	-1=1	13.00				-00	
Water-glass drip missing	10	1	11 + 5		1			1							- 64
Water-glass drip defective Water-glass drip wrongly located		1887													0.0
Gage-cock drip improperly located	-6	1	1981						***						- 1.
Fire-box sheets corroded		1700		2000											
Unclassified steam leaks	410	201	100	STATE OF THE PARTY OF	# A	1	T	To	- 1	15.	1		2.7	2	
Number of defects	1,791	627	2	2	ā	22	4	(1)	10	115	THE.	2	10	13.4	3
Locomotives owned	293	275		9	9	()	3	6	31	7	15	-	01		
Locomotives inspected	383 269	333	1	1	2	3	3	7	-37	11	9	1	10	10	
Locomotives defective										37.73				100	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Pemberton & Hightstown.	Pencoyd & Philadelphia.	Penn, Iron & Coal Co.	Penna, Lines W. of P.	Pennsylvania R. R.	Pennsylvania Southern.	Pennsylvania State C.	Pennsylvania Steel Co.	Pennsylvania Terminal.	Pensacola, Ala. & Tenn.	Peoria & Pekin Union.	Peoria Ry. Terminal.	Pere Marquette.	Philadelphia & Reading.	Perla Northern
Stay bolts broken. Rigid bolts leaking ¹ Flexible bolts leaking ¹ Felltales closed ¹ Felltales stopped up ¹ Relitales stopped up ¹ Ray bolts not drilled ²	33	:::		259 19 25 33 29 90	25 23 67 4	2	****		8	****	21 9 1 5	1	115 8 13	154 10 8 33 12	:::::
Celltales stopped up i Stay bolts not drilled = Crown sheet leaking Diher sheets leaking Diher sheets leaking Diher sheets leaking Dines leaking i Flues leaking i Flues leaking i Arch flues leaking i Arch plugs leaking i Barrel leaking Dome leaking Dome leaking Mud ring leaking Blow-off cock leaking Washout plugs leaking Safety valve missing Safety valve stuck Safety valve stuck Safety valve leaking Gage location improper Gage incorrect Dial glass missing		1		20 93 10 51	151 126 62	3	****		i		1		9 22 1 3	97 1 30 29	11.11.11
Arch flues leaking 1				152				445		,,,,,		::::	20		7.
Fusible plug leaking				10	49		****	1		121			1		13
Barrel leaking		***		49 63	34 40	4440	100	+>>	1	1011	1	111	10	16	-
Throat sheet leaking				15	16	2		100	1				6	1	1.
Blow-off cock leaking		11		99 79	176	2		1.	3		1	178	17	59 104	13
Vashout plugs leaking 1			1	169	288			10 - 10	-		4	ï	20	174	10
safety valve stuck	10.		11.								4411	1414			
lafety valvé leaking	22.5	111		47	9	****			****	****			::::	6	i:
lage incorrect				1 6	4								1 2	300	
Slphon wrongly applied				- 9	12	2	1				4	'i'		11	1.
bage noorlest wrongly applied. Siphon wrongly applied. Siphon leaking Sage cocks wrongly located. Gage cocks stopped up.				67	75	1		***	1	****	***		1	210	100
Jage cocks stopped up			1	10	82							5.3	16		1
Gage cocks inoperative	1		1	301	27 261	5			8	:500	3	111	82 11	27	1
Page-cock handle defective			1	24 13	14 10				2	4		1	7	1	-
Drip pipe missing		0.5		12	2								4	3	1
Nipples defective or missing Water glass missing	100		21		1		1	3		2				723	6 %
Water glass stopped up.	io.	200		2 53	39						100		3	*****	
Jage cocks stopped up. Jage cocks inoperative. Jage cocks blowing. Jage-cock handle defective. Jage-cock drip defective. Jage-cock drip defective. Drip pipe missing. Nipples defective or missing. Water glass missing. Water glass stopped up. Water-glass cocks defective. Water-glass cock defective. Water-glass blow-off cock defective. Water-glass blow-off cock defective. Lamp missing.	10			17	8	- 1		100	2					1	100
Water-glass blow-off cock defective Water-glass tube broken	133	2	1	74	264	1		-	2	i	2	1	2	5 3	
Lamp missing	1			2	7				2						
Water-glass shield missing Water-glass shield defective				28	7 2	1					`i		23	*****	1
Water-glass shield defective Water glass improperly located Lubricator shields missing		100	• • • •	221	5 80	0.00		***	i	3	***		37	99	1
Lubricator shields defective Injector inoperative				52				1.1					4	327	
Injector inoperative Injector tank valve defective Injector tank hose defective	133		100	11	17					8-34				2	
Injector tank hose defective		0 X •		39 63	23 42	1		W 7	1				8	28 28	Ŀ
injector throttle defective	1	2	1	259	57		STAI		5	1			1	17	1
Injector steam pipe defective	3	1.23		68 75	52 112		011	111	2	121		100	2 2	22	1
mjector tank nose defective injector feed pipe defective injector steam pipe defective injector delivery pipe defective injector boiler check defective cab card missing Badge plate missing Fire-box plug not secured waterwissed from missing		1	Ť.	57	81	1		4		· · ·	12	3	11	24	-
Badge plate missing	i	1	V.	130	75	5	i	3		4	10		2	265	1
Fire-box plug not secured Water-glass drip missing	2	1	35	10 27	11	8					****		4		1
Water-glass drip defective	(49)	614	103	6.	57	110	15.0	1.22					1		
Water-glass drip wrongly located Gage-cock drip improperly located						111		11:							1
Fire-box sheets corroded	1000			-		1.6			114						4
Fire hose defective	3		â	895	664	5	9.0	133	15	4.4.	9	5	48	173	1
Number of defects	_	-	-	4,030	3,329	49	3	24	58	19	94	13	593	3,051	T
Locomotives owned	2	3	2	I, 953	3, 621	4		4	7	5	33	6	443	1.026	-
Locomotives inspected	9	7	1	2,011	2, 455	B	1	4	-8	4	38	7	618	1,026	
Locomotives defective	1 3	4	0	1, 148	1,523	6	0	4	-5.	1.4	26	5	234	1,140	1

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Peru, La Salle & Deer P.		Phila.	Pickens.	Piedmont.	Pittsburg & Lake Erie.	Pittsburg & Susq.	Pittsb., Alle. & McK. R.	Pittsb., Lisbon & West.	Pittsburg, Shaw- mut & N.	Pittsb., West- more. & S.	Plymouth Coal &	Poplar Bluff & Dan Riv.	Portland, Eugene	Portland Termi-
Stay bolts broken Rigid bolts leaking '. Flexible bolts leaking '. Feltxible bolts leaking '. Telltales closed '. Feltxible bolts leaking '. Telltales stopped up '. Stay bolts not drilled '. Crown sheet leaking. Other sheets leaking. Other sheets leaking. Firebox sheets bulged. Filues leaking '. Filues plugged. Arch flues leaking '. Arch plugs leaking '. Frosible plug leaking. Barrel leaking. Dome leaking. Throat sheet leaking. Mud ring leaking.		5				47			1	6	.,,,	****			4
Rigid bolts leaking 1			3			10						00	****	9-20	
Telltales closed	****	****			****	5			+	****			****	000	
Pelitales stopped up I	1	1		333	177	20				4	1271	535	13.	1	1200
Stay bolts not drilled 1		2	6	5050	5000	1	2	1133		2					
Crown sheet leaking						7									
Other sheets leaking		***	3	+*+>	****	19				1	1212		55.4		
Firebox sheets buiged		****	4	****	2022	10		****		0	****	****	12.00		
Plues plugged	1	1	9		133	12				1	23			2.0	
Arch flues leaking 1		130			1001	111111		1101	0000						
Arch plugs leaking 1	2421														
Fusible plug leaking	-42-														
Dorna leaking	****	25-1	1	52.55	7 7 7.3	1	****		12.47	1		000	1811	****	
Chroat sheet leaking	1	****				1.5					-		1000	****	
Mud ring leaking					122	14	1	1		1	0.00				
Blow-off cock leaking		24	2			3					45.43	1325			
Caroat sheet leaking Mud ring leaking. Blow-off cock leaking. Washout plugs leaking! Safety valve missing safety valve stuck safety valve leaking. Bage location improper Baye Incorrect	***	1	1	4,834,6		10	der.	1		2	4445		1945	1241	**
lefety valve missing	***		****			*****	2000	200		****	2000	555	1		
afety valve leaking	1011	****	1	***	****		7277	****	25.0	****	1	¥8.57		****	3
Page location improper	1	1100	1.0.	****				1111				1000	1000		
lage incorrect								33.		1		1131			45
Dial glass missing			1						-2-5						
iphon wrongly applied	****	****	5	1	1.	1	2	3	4444		1	1	1	1711	
legg pooles wrongly logged		200	9			-11	***	- 1		1			***	5.55	
lage incarion in proper inge incorrect. Jial glass missing siphon wrongly applied iphon leaking inge cocks wrongly located inge cocks stopped up age cocks inoperative		.000	6	103	553	SUST.	1333		100	2		355	3131	1	
lage cocks inoperative			6			2.07.00					1		300		
lage cocks inoperative lage-cock showing lage-cock handle defective lage-cock drip defective lage-cock drip defective lage-cock drip defective lage-cock drip defective lippes defective or missing later glass missing later glass stopped up later glass stopped up later glass cocks defective later-glass cock handle defective later-glass blow-off cock defective later-glass tube broken lamp missing later-glass sheld missing later-glass sheld missing			5			16		3							e e :
lage-cock handle defective	12.85	1122	2	4.25		2.252		5492	2222		1	10.5	****	100	
Orin nine missing	2727	***			7111	1				****	47.44	4244			200
Nipples defective or missing					100		1133				3330	332		2.4	
Water glass missing	2	9		1.			1					1			
Water glass stopped up	4150				***	1			2758				****		
Water-glass cocks delective	27.23	****	0	1111	219.5	1	3330		1500	1	KREE	1000		7722	4.4
Vater-glass blow-off cock defective			4		****	A	2.0.	6	2.43.4		4451	0.50	-10-5		
Water-glass tube broken	1777					242421		1252	1000		9260	E Diam			
amp missing		2000	200	24.21	35.66		1						8.056	1-20	
Water-glass shield missing	17.64	42.00	4411	25.00		5	1	****			1	+,000	1		00
Water-glass shield delective	4 6 4 6	2500	700	****	1	16	****	1	***	***	1	4585		41.00	
ubricator shields missing.	1	9	1	1	****	18	3	3	1	1	1	1517		1	7.77
ubricator shields defective			1		1	8									
njector inoperative		++4+	1			end rate		1		313	1		2.423		
Nater-glass shield flussing Nater-glass shield defective Nater glass improperly located obricator shields missing aubricator shields missing nietor tank valve defective njector tank hose defective njector feed pipe defective njector frottle defective njector steam pipe defective njector steam pipe defective njector betivery pipe defective njector betivery pipe defective njector boiler check defective ab card missing lire-box plug not secured Vater-glass drip missing Vater-glass drip defective			17.60	133	****			***						***	Va.
njector feed nine defective		***	10.00	1	4444	· · · · · · · · · · · · · · · · · · ·	45.44	253	1545	9	2	123	1425		
niector throttle defective			1	1447	77.0	12	2	1			1	10:01	2007		
njector steam pipe defective						1 4	1	3	0000	1011	3	100	000	1000	
njector delivery pipe defective	45,000					4				1	2			2449	
njector boiler check defective	- 100	400	2			2			< 81	1123	3	28	3181		150
ab card missing	9	5	2571	1	1	-5.000		10.71	100	20	1477	- 1	3134	3:27	101
ire-box plug not secured			****	6	3		0	4			11	****	Yesel	****	
Vater-glass drip missing				120		F 17 7 . 1		3011	000		.33	1013			
Vater-glass drip defective			21.25			1									
vater-gass drip defective. Vater-glass drip defective. Vater-glass drip wrongly located. ige-cock drip improperly located. ire-box sheets corroded. ire-bose defective.	1911	41.0	1917					0.00	eres						
line how sheets corroded		***	334				7:22	0.75	1131	1187		12.1	10.00		
ire hose defective	100	1550	STEE	100	25.35		7	10.83	1081	****	-×-				181
nclassified steam leaks		1	16			57	4	12	2	7	5				
Number of defects	6	32	95	12	6	314	22	40	6	37	40	35	- 8	2	-
ocomotives owned	1	3		2	2	228	4	10	4	27		2	2		1
ocomotives inspected	9.0	13	230	2	1	190	4	Lit	2	SCE	9 3	1	1	1	- 1
ocomotives defective		10	38	1	1	142	3	11	200	14	a.	11	1		8
	- ()	(1)		()	0.0	1	(1)	()	-(1)			11	10.	1.5	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Portsmouth Steel	Potomac, Fred. & Pied.	Prescott & N	Pub. Belt R. R. of N. O.	Quannah, Acme, & Pacific.	Quebec, Montreal	Queen & Cres. (N. D.)	Queen & Cres. (8.	Quincy Omaha	Rahway Valley.	Ry. Trans. of Minneap.	Raleigh & Charles- ton.	Raleigh & South-	Raleigh, Charlotte	Randolph & Cum-
Stay bolts broken Rigid bolts leaking 1 Plexible bolts leaking 1 Pelitales closed 1 Pelitales closed 1 Pelitales stopped up 1 Stay bolts not drilled 2 Prown sheet leaking Ther sheets leaking Ther sheets leaking There sheets leaking Plues leaking 1 Pres plugs leaking 1 Pres plugs leaking 1 Prosible plug leaking Barrel leaking Dome leaking Dome leaking Phroat sheet leaking Mud ring leaking Blow-off cock leaking Washout plugs leaking Blow-off cock defective Bage-cock drip defective Bage-cock drip defective Bage-cock drip defective Water-glass cock handle defective Water-glass cock sdefective Water-glass cock defective Water-glass cock defective Water-glass shield missing Water-glass shield defective Water-glass shield defective Water-glass shield defective Pater thank valve defective nector tank valve defective nector tank valve defective nector tank bose defective					6		163	17	5			4	2		
Rigid bolts leaking 1		****	****	1	1	****	4	2	1		****		****	****	
Plexible bolts leaking 1	••••					****	20	****	****	***		1111	****		100
Colltales stopped up 1			3331	1111	1	1	29	28	4				1		
Stay bolts not drilled 3							20							***	
rown sheet leaking							5	1	1						40
Other sheets leaking				****	000		28	****	****	****	5455			****	
Fire-box sheets bulged	****	****			****	****	21		1	9	****	1000	100	1000	
Phos phogod		2	· · · ·		****	1000	6	7							
reh flues leaking 1									7.11		2444				18
Arch plugs leaking 1							3					****	****		- 1
Fusible plug leaking				.,.,		****	******	****	****	****					-
Barrel leaking					2	0.0	12		****		:***	1	****	1	
Phroat sheet leaking	***	110	****	(11)	2	i	0						170		
and ring leaking	0.80	333					8	2	1						
Blow-off cock leaking							20								10
Vashout plugs leaking 1					1		38			1			22.55	****	÷
afety valve missing				****	9.95	****	****		****	1					-
safety valve stuck		****			****	49.69	19	****	· · · ·		4	1577	1551		
lage location improper	10.55	1000	1200		000			111					100		E,
age incorrect								****							
Dial-glass missing							1		1427	1126				***	+
iphon wrongly applied	1	1					3		2		4592	9	1	****	
aphon leaking		****	****			****	10	1.5					1		-
lage cocks stopped up					****	****	10	4	1107	1155	2	150	2	1	
Page cocks inoperative	222		1	115	22.1		8	9	1				1		
lage cocks blowing			1	3	1		57	12				2	1 1 2 1 2 1	5	
Jage-cock handle defective							3	2	2			****	1	1	-
rage-cock unp delective		7:37	***		****	***	9	4			****	1.07		****	
Nipples defective or missing		100		****		175	2						100		
Water glass missing	1		12.2	2							· vice			1	
Water glass stopped up				1	000	444	2	4.50			5-34				4
Water-glass cocks defective						17.77	14	1	1			****		****	
Water-class blow-off cock defective				1	1		-50	6		1100		****	1	1	L.
Water-glass tube broken		****	1000		100			1	T		1000	1000		1	ľ
amp missing															b
Water-glass shield missing	1			000			Werr.				1100		1909	****	÷
Vater class improverly leasted		AVER	- 4	1	4 4 5 h	1000	900	- 9	1			1.1		****	10
abricator shields missing	100		****	1	3	****	6	4	1	1		3		2	1
arbricator shields defective	L.Ĉ.	1.0.		0.0			10	4							5
njector inoperative							2				1,000		1		4
njector tank valve defective				5000			3	200							-
njector tank hose defective		13.55				40.00	9	2	***		1515	OF.	****	****	5
njector throttle defective	****		9	***		4.00	42	1	. 6		1.13.0	4 10 10	****	****	
njector steam pipe defective		1130	1	24.4			11	7	1	1000				1000	
njector delivery pipe defective						5110	15	2162	1		1252	104		1 2	12
njector boiler check defective					1		15		2000	1	2000	- 1	5555	1.15	10
ab card missing	2	000		-1	25.65	STATI	10	0		1.	2	-0		1	18
Pire-box plug not secured	-	. 3.16	1		1733		20	15	i)		***	-	-144	1.5	b
Vater-glass drip missing		1	1	1.50	5041		9	2				1000		(Ü
Vater-glass drip defective	er.		Eaks	65.85	25.7			·			201				18
Vater-glass drip wrongly located	4.4				1.50		1.111	1717			2422	1945		440	10
Fire-box shorts corrected.		-					9	1145	1		1000	1.05	-7-1	***	10
Fire hose defective	20.00	1717			33.33		. 4			330			3000		19
Inclassified steam leaks		40.50	5		1715		174	8	5	4		1	Col	1	E
Ambricator shields defective njector imperative njector imperative njector tank valve defective njector tank bose defective njector teak bose defective njector truttle defective njector steam pipe defective njector steam pipe defective njector boiler check defective njector boiler check defective ab card missing sadge plate missing Fire-box plug not secured. Water-glass drip missing. Water-glass drip wrongly located agge-cock drip improperly located fire-box sheets corroded. Fire-box sheets corroded. Fire-box defective. Unclassified steam leaks.	7	5	17	10	19	.5	926	153	40	11	4	21	14	17	F
promotives owned	ă	3	9	7	7	15	344	131	24	3	4	4	9	8	2
	10	4	30	4	71	-5	253	156	14	3	- 4	9	17	42	Ĺ
ocomotives inspected	- 10	9	0.4	2	4	3	189	82	13	9	2	7	8	11	

¹ Number of locomotives reported with this defect.
2 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Raritan River.	Register & Glen- ville,	Reynoldsville &	Richmond, Fred.	Rio Grande.	Rio Grande Southern.	Roanoke River.	Roaring Fork.	Robinson Clay Prod. Co.	Rockingham.	Rock Island Co.	Rock Island & Dard'I.	Rock Island Southern.	Rome & Northern.	Roper, J. L., Lum-
Stay bolts broken. Rigid bolts leaking ¹. Flexible bolts leaking ¹. Telitales closed ¹. Telitales closed ¹. Telitales stopped up ¹. Stay bolts not drilled ³. Crown sheet leaking. Other sheets leaking. Fire-box sheets bulged. Fire-box sheets leaking ¹. Sarty lugs leaking ¹. Sarty valve stuck safety valve stuck safety valve stuck safety valve stuck safety valve leaking. Dage location improper. Gage location improper. Gage location improper. Gage cocks wrongly located. Gage cocks wrongly located. Gage cocks looving. Gage-cock handle defective. Gage-cock handle defective. Gage-cock handle defective. Water-glass cocks defective. Water-glass toped up. Water-glass sheet defective. water glass improperly located tubricator sheets defective. nector tank valve defective.	2			11							3		3		
Rigid bolts leaking 1									1						1
Telltales closed 1	****		T-0-4	*****	****				****	••••	an		1		
Telltales stopped up 1	200	12.7	2.1	9		100	777		22	1	7	1	1	7.10	
Stay bolts not drilled 3						2				255			++++		
Crown sheet leaking	****				****		****	2					****	****	
Fire-box sheets bulged	****	1.44	100		77.7	3	****	***	0.55	55.47	-			7.0	1.0
Flues leaking 1	1			2											1
Flues plugged				*****					1						1
Arch plugs leaking 1		4.44	12.22	*****	20.45			44.44	****	****	+-+-	****	****		***
Fusible plug leaking			1000	100.00	000							1		100	100
Barrel leaking		****								ee.					
Dome leaking	****	5555	1111			****		2	1					7000	
Mud ring leaking.	2	3.00	44.41			****			****		1		1733		***
Blow-off cock leaking		1000		*****											
Washout plugs leaking 1		3.50	444.2		+155							2345		22.83	100
Salety valve missing			. <		***	*14.								4,-1	
Safety valve leaking		1	1300		1000	2007					17.3		1001		100
Gage location improper					COL						- 4 - 1				100
Gage incorrect													****		
Dial glass missing			9	1000		****		****	45.00	+>+>	9	100	00		1445
Siphon leaking	****		0	11171		13.77	000		200	****	2	1.5	1000	1	***
Gage cocks wrongly located					100		0.80					1	7170		
Gage cocks stopped up			1	eres.				1			1	1000	00		
Gage cocks inoperative	11/12	1111	****	1-1-22	25.00		1	Y545	1		1 2		1.15	9	1
Gaze-cock handle defective		1491	i	0	72.0	777		100		31.45	1	1000	2017	2	
Gage-cock drip defective				1						-1.0					
Drip pipe missing		2-27	200	***ini	1915	-2+7	-240	42.0	1240			2225			6.
Nipples delective or missing			2,000	200	1,000	-7-1		44.5	106	49.85	2241	7.7.7.6	DG.45	75.45	2.4
Water glass stopped up.	000	1111	000	43(1)		200	***	0503		33	Shorts	ice.			
Water-glass cocks defective	330		3522	1											
Water-glass cook handle defective		· ·		2	17.00			2	1555	1180	1	3110		40.00	100
Water-glass blow-on cock delective.	***	****	1			-	1			***)	1	1000		2.8	× .×
Lamp missing		22.	***		133	1 3 4 3	100	7777			-244	10.0		Olx.	18
Water-glass shield missing		1	2	teres.	200	4845		2225	15.6		1	27.00	2		11.7
Water-glass shield defective				5.55.65.4	11.00	2000					5	0000	1		200
water glass improperly located	****		5.55					1	1		200	Cont.	-		
Jubricator shields defective	1000		1500		2281				4		3	2000		1000	170
njector inoperative	X-75					2734		121	1817		1	15		- X	100.8
njector tank valve defective njector tank hose defective njector feed pipe defective njector throttle defective njector steam pipe defective njector steam pipe defective njector boller check defective ab card missing Badge plate missing Fire-box plug not secured Water-glass drip missing Water-glass drip mongly located Gage-cock drip improperly located Fire-box sheets corroded. Fire hox effective				*****		1							7541		
niector feed pine defective		2421	74221	1-2-2-2	530+3	0		1853	2442		1	2250	45.80		
nlector throttle defective	2		200	1	000	1	200	Î	1		î	1		1	100
njector steam pipe defective			1			-						1			
njector delivery pipe defective	5000	7360	Ster	*****		2555	Te 51	8551	19888	8-80	1			12.5	370
ah card missing	44.00	1	1100	1	-272	2570	1771	17.5	***	****	1	17:00	T.	1	555
Badge plate missing	1000		2	ATTACKS.	CXXX	- 2-1	1	î	1	****		1110	1-11	11 Y	3.4
ire-box plug not secured	2000	7011	Can.	44	-9.1	-X-1	+921	+9+1	47.45	84+8		100		1611	1117
Water-glass drip missing		1260	124	615.55¢	PRAI	9 V 1 1	-5.95	1725	212		447	rr.			1210
Water-glass drip wrongly located	* * * *	2210	20.00		200	8446	****	2000							111
age-cock drip improperly located		Carr.	1					300	CL				-		
Fire-box sheets corroded	555	5 = 4	1101	*****		8651		315	6180	- 18		180		47.83	111
Fire hose defective	112		117	2	-843	10	13.4)	55.0	0		-10	100	37.0	1	X-5
ACTUSED BUILDINGS	.9	. (= :	1)	-	-231		* Y =0	-	-	00.60	1	-	3	1	
Number of defects	11	4	13	121	1	22	- 14	1.4	11	1	39	li li	17	13	3
		- 4	0.	49	-	100		- 20	1	9	44	-0	-	- 00	
Locomotives owned	1.3		-0.		-0.	1,9	- 1		-0	44		100	17	100	
Locomotives owned	7	4 2	5 3	150	1	10	1	3	3	ī	15	ĩ	1	2	

¹ Number of locomotives reported with this defect.

⁵ Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	Roscoe, Snyder & Pac.	Ruthand.	St. Clair Terminal	St. Johns River Term.	St. Joseph &	St. Joseph Belt.	St. Joseph Term.	St. Joseph Valley.	St. Louis & Han- nibal.	St. Louis & O'Fal- lon.		St. Louis, Browns.	St Louis, I. M. & S.	St. L., Ken. & S. E.	St. L. R. Mt. & P.
Stay bolts broken Rigid bolts leaking 1 Plexible bolts leaking 1 Pelitales closed 1 Pelitales stopped up 1 Perown sheet leaking Pire-box sheets bulged Plues leaking 1 Pire-box sheets bulged Plues leaking 1 Profit plugs leaking 1 Profit plugs leaking 1 Prost plugs leaking 2 Barrel leaking 2 Dome leaking 3 Profit sheet leaking Profit sheet leaking 3 Bow-off cock leaking 1 Washout plugs leaking 1 Washout plugs leaking 1 Mashout plugs leaking 1	3	47	18		.9	2	2		12		629	4	272	- 1.0	
elgid boits leaking 1	1		2			1111	55.5	****	****		76 17		20	***	
'elitales closed 1	1	1	1		1						4		1	***	
tay holts not drilled 1	***	3	2	2	b	1	2	1 2	3		102	4	39 14		
rown sheet leaking			3	1	2				113		25		14		
ther sheets leaking		1	7		2						128	7	54 20		
lues leaking 1		i		1	î		1111	1	100	1111	58	-î	19	111	
lues plugged				6	22						50		- 4	2	į,
reh flues leaking 1				****		***	****	****	****	****	12	****	*****	:::	-
usible plug leaking		77										1.77			
arrel leaking		1							.,.,		41		23		-
hroat sheet leaking		2	135	173	1	77.7	100	1			27 42		17		
fud ring leaking		6	2	1					1		52		- 8	100	п
llow-off cock leaking		2	1		1 2			2	1		107	1	12 37	2.00	ш
afety valve missing		. 1		200						1007	101				
afety valve stuck														***	
afety valve stuck. afety valve leaking age location improper			1		****		****	2			17		1		
age incorrect	1000	1		11.			1	1111	233		2		1		E
of all glass missing		1		****						****	12		11	3	Ŀ
iphon leaking	235		2				122	1000	2	17.5	54	1111	42		
age cocks wrongly located	444	1									1	****	-6		Ŀ
lage cocks stopped up	1,200	3		-	2		****	1		* < 4 9	24 45		69 27	ott	
age cocks blowing	100	6	100		ĩ	1111	1	2			67	6	84		
lage-cock handle defective			44								19	1	9	1	Ĺ
rage-cock drip delective		2			i		***	*818	2500		103			***	-
lipples defective or missing		1						13.3		-	2			***	1
Vater glass missing		1357		2					44.5					1,5,4	
Vater-glass cocks defective	153		ï						2		48	2	23	123	ľ
Vater-glass cock handle defective		51.75	1,0					1			6		1	1	6
Vater-glass blow-off cock delective .	5133	2	1	28.0	1	****	1		270	-34.	180	1	84	:::	
amp missing			3			.v.,			-5-0	227.					J.
Vater-glass shield missing	1443	20	-25		1	1		1	1	1	24	4	26	3	
Vater glass improperly located	K	10	800	5.11			1000	261			-	****		133	L
arbricator shields missing	2		8		1	1	1	1	1		70		27	3	1
abricator shields defective	1757	11		1	1	****				****	9	1435		***	1
njector tank valve defective				1						VY 2.0	4		0	100	ľ
njector tank hose defective	66.0	1							4.54		38		17	40.0	ŀ
nlector throttle defective	100	Ť	2		1	24.0	227		300		154	3	103		ŀ
njector steam pipe defective	200	1	1				43.00				62	1	-69		ı
njector delivery pipe defective	****	1	1		1000	****		->	5000	****	102		16		ŀ
ab card missing	2	1	2		2	2	133	222	0.00		21	5	39		l.
ladge plate missing		10	4		3	-2	2	4			162	5	95	2	
Vater-glass drip missing	224	6		133	Ti	12.1	0.0	100	00	117	140	1000	130	11	ľ
Vater-glass drip defective		1				200	lesis	Long.			10	1			
Vater-glass drip wrongly located lage-cock drip improperly located	****		***		1000	-					6	144		***	-
ire-box sheets corroded			2	1	3			1	12.5		40	747	í	10	ľ
						0								14.4	
Inclassified steam leaks	****	13	5	. 6	3	1	1.31	3	2	4	647	8	227	->:	Į.
Number of defects	9	145	81	23	71	12	9	20	31	- 6	3.733	57	1.883	15	
ocomotives owned.	2	86	8	2	25		4	4	9	3	1,019	29		4	ſ
.ocomotives inspected	2	(59	10	4	24 19	3	3.	4	5.	3	1,156	28	772	4	١
ocomotives defective ocomotives ordered from service	0	49	4		110		0	0	1	3	926 76	17	606	3	П

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properl drilled.

Defects.	St. Louis S. W.	St. Louis, Troy & East,	St. Marys & Kings land.	St. Paul & K. C. S. L.	St. Paul B. & Term.	St. Paul Union D.	Saginaw & Ous- chita Riv.	Salem, Falls C. & West.	Saline River.	Salt Lake & Los	San Ant. & Aran- sus P.	San Ant., Uvalde	Sandersville.	San Diego & Ari- zona.	_
Stay bolts broken	134	4		1					2		13				
Rigid bolts leaking 1	4			1		- 599					1	***			
Tellfales closed 1	5					1424	1				1.00				
Telltales closed ¹ Telltales stopped up ¹ Stay bolts not drilled ²	28					***			9000		3	****		1	1
Stay bolts not drilled	4	****	33	****		D	1	1571	1000		2		1111		
Crown sheet leaking Other sheets leaking	8		1	1		59.55			22.00		3				
Other sheets leakingFire-box sheets bulged	*****			****			****	1			5	1		Cit	
Flues leaking ¹ Flues plugged Arch flues leaking ¹ Arch plugs leaking ¹ Fusible plug leaking ¹ Fusible plug leaking	4		0181	4			4				18				
Arch flues leaking 1														2171	
Arch plugs leaking 1	1			1.0	1217	13.50	1717	++++	000	***	1	100	355	10.0	100
	3	-4-5	14.0					1				25.0			
Dome leaking Throat sheet leaking	3			4244	24,24		++++		2			14.20	1.1.	****	***
I nroat sheet leaking	5	133	****	1	555			100	1				133	1111	
Mud ring leaking Blow-off cock leaking Washout plugs leaking	7					****					4				
Washout plugs leaking 1	5	1			19.5	13.17	1344	1000	(9.83	0.00				****	
Safety valve stock					100	2240		10.64	22.00			0.0	1	1101	
Safety valve missing	1					1,175	0.75								
Gage location improper	1			***	***	100		1111	444,		1330	123			100
Dial glass missing	î	1000			44.00	100			1		1				
Siphon wrongly applied	9		1	3		646	400	0.00	2		3	2000		1125	1
Siphon leaking	13	1444		1100	25.79	3000	245	3-84	100		1	1000	100	2.2.	
Gage cocks stopped up	2						100		3	6.11	2321	914		KEKE	
Gage cocks inoperative	23	11.70	TATE	***		-	1		4	***	2	2000		2414	
Gage-cock handle defective	11			2			22.1								0.00
Gage-cock drip defective	intre.			2		1000		19.84							1.00
Drip pipe missing	1			11.34	4,47	7925	10.00	***	264	2521	17.55	137		****	100
Water glass missing		1	1				1		1	300			2		1.24
Water glass stopped up				+ 7 = 4	4.5	1835	1000	3453		1111	- 6		100	-0.0	
Water-glass cock handle defective	1	13.0		17.00		***	23	2011	1	33.50		120	1000	5227	- 12
Water-glass blow-off cock defective.	7	13.17	25.44	10.0	15.25	4.11	2.2.	2.2.	1434	2776	4.5	1000	11.00	100	-0
Water-glass tube broken		-3.00		-0.89	-				1		2	1211	(41)	1	100
Water-glass shield missing	******	1		4				2	2		2		NO.		Time
Water-glass shield defective	85	1	000	30.00		Mean	YAST	1101		3-50	1	17.47	19.50		-58
bubricator shields missing	13	100	1	4	****	9	1	2	2	1	14	1	(***)	113	770
Lubricator shields defective	22.22.			100		25.04	2.81	1421	1.2.	1121	1300	100	11.3	100	
injector inoperative	1			15.46	-	1			1.0.	1944	12 cal		100	125.1	- 45
injector tank hose defective	2	1100	1222	100		1				1000	I	1			
njector feed pipe defective	1		3.2	111			0.01	1555	1755	100	1	Tirk	11-	818	
Injector throttle delective	6		4555	50	118			1.00	3		2	(40)	1	185	- 12
njector delivery pipe defective	1		.5	24			5.21	1.11	1			1	1111	143	1
njector boiler check defective	9	1-10	100						1	- 6	100		- 0	-186	124
Badge plate missing	41	1	1	9	2		i	12	3	2	5	2	2	1	
Fire-box plug not secured			3	1125	0 +x7	3789	3	134-	1 101	111	3				
Water-glass drip missing Water-glass drip defective	3	14.99	(41)	0.00	1.1	Y+X-	- 1		1	+ 1 = 1	100	00	1-1	21-1	115
Water-glass drip wrongly located	*	li.		2040	71.0	1.1	144	1,000	(e e)	A STATE	188	98	M		E
									5,000						
Fire-box sheets corroded Fire hose defective	1	110	111.												
Unclassified steam leaks	47	1	120	100	133	1422	3	3	6	1	101			181	
Number of defects	527	9	10	24	3	9	12	10	41	8	100	10	7	a	3
ocomotives owned	204	4	1	17	5	13.	4	4	4	3	81	8	2	2	1
Locomotives inspected	288	3	1	13	.5	8	4.	3	3	3			000000	1	03
Locomotives defective	226	2	1	10	3	G	1	.3	- 31		3.9	A	1.2	1	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	ego & S. E.	San Diego South- ern.	y Riv. &	Sanford & Ever- glades.	San Pedro, L. A. & S. L.	Fe, Pres-	Fe, Raton East.	Savannah & Statesboro.	Sawyer & Austin,	Schobarie Valley.	oard Air	Semet-Solway.	Sewell Valloy.	Shannon Arizona.	on Steel
	San Diego &	San Di	Sand	Sanford	San Pe	Santa Fo	Santa	Sava	Sawyer	Schoba	Seaboard Line.	Semot-	Sewell	Shanne	Sharon
Stay bolts broken	2		1	3	339	14	7	3			274				
Rigid bolts leaking 1	1	5000		****	52	2	1	**	45,44		6	****		***	
Felltales closed 1	100				16	10			1111		21				1.5
relitates stopped up 1	1	1			122	14	1	i			82			1	
Flexible bolts leaking ' Felltales closed ' Felltales stopped up ' Felltales stopped up ' Stay bolts not drilled ' Frown sheet leaking Other sheets leaking Fire-box sheets bulged Flues leaking ' Flues plugged Arch flues leaking ' Arch plugs leaking ' Arch plugs leaking ' Fusible plug leaking '		3		****	59 28	2	.,,,,	44.45	****	***	2		1070		1.
Other sheets leaking	i	1	****		75	3		2			35			200	100
ire-box sheets bulged		2			41	4					3				100
Flues rlugged	2		***	***	48	1 7			1	434	- 28-		W	1	
Arch flues leaking 1		****	****	****	96 2		****		1		09				1:
Arch plugs leaking 1	133				3	1				10.	17		1000		0.
Fusible plug leaking Barrel leaking Dome leaking		***	***		2	40.80				***	Summer				
Dome leaking		****	****	****	18	::::	45.50	(4) 4)			3	::::			
Throat sheet leaking		1			9	1000	111	i	****	* * *	4	****	127	1	
dud ring leaking	1				52						14				
Dome leaking Throat sheet leaking Mud ring leaking Blow-off coek leaking Washout plugs leaking Safety valve missing Safety valve stuck			6453		13						5				
Safety valve missing	1				18	2	****	****	*	***	15				
Safety valve stuck		1000		5000			1000	13.7			132.3				
alety valve leaking					3						1				1.
Sage location improper			****									****		->4	
rage incorrect Jula-glass missing iphon wrongly applied iphon leaking aage cocks wrongly located aage cocks stopped up aage cocks inoperative		****	100	****	20	0.55	****				1	***			13
iphon wrongly applied	1		2	1	- 8	5		1	1		30		5	33	1
iphon leaking			2	2000	19	2	9720	1			6				
lage cocks wrongly located		***	2000		22			****			11			200	
Jage cocks inoperative	****		****		18	3	ï	****	***	***	19		****	***	E
lage cocks blowing lage-cock handle defective		2.22			32	3 1		5	2		45	i i			E
lage-cock handle defective			600						3			9,656			
rage-cock grip detective					6			1341		***	8		****		
Vipples defective or missing	135		520	1000	47	5	****	2			10	****	1131	7.7	Ľ
Orip pipe missing. Sipples defective or missing Vater glass missing			4					1 2 3				2			
Vater glass stopped up	119						110	***		-0+	8				
Nipples defective or missing. Vater glass missing Vater glass stopped up. Vater-glass socks defective. Vater-glass cock andle defective. Water-glass blow-off cock defective. Water-glass blow-off cock defective. Amp missing.	L	3.62.5	1775		13	2	1	****	1 7	1	24				1
Water-glass blow-off cock defective.		1	1	****	9	2		100	1		47	200		1	6
Vater-glass tube broken amp missing Water-glass shield missing					3			7			2	1	1		
amp missing		2		1527	*****			12.50		200	1	23.50			
Vater-glass shield defective		3	* T.	***	5	****	****		5.5 4.8	***	3		****		1
Vater-glass shield defective	1				3		M.	200			2 3 14			33	E
ubricator shields missing	1	4441	200	124.1	4	48.6	12.44	1			14	3		2	-
njector inoperative		2	1000						****		19-19-				-
njector tank valve defective		1000			16	1000				1113	R				1
njector tank hose defective						I		1445		224	. 7			100	1
njector feed pipe defective				1	16		***		00		8		****	400	
njector throfile defective njector steam pipe defective	4	2000			22 40	73.	0	2 1 2 2 2		414	15		****	24.4	1
njector delivery pipe defective	1000	1	200	111	3	1	ī	lió.	COL		2				12
njector delivery pipe defective njector boiler check defective	200				18	2					6		44.00		E.
ab card missing	1		1			1	1000	2	2	2	15 62	1	2		l.
ladge plate missing ire-box plug not secured	1177	10.12	130	1	16	25	***	1 4	-	1.89	39	0	****	154	1
Vater-glass drip missing	25.66	Sections			1								1	100	
Vater-glass drip defective					1	17.65	124.			454			***	+34	
Vater-glass drip wrongly located	4.70	124.5	2000			179	-35.0				-1424	45.40			1
lage-cock drip improperly located	1	1001	338	180	7	2	-	1000			23	His	-	7.7	17
ire hose defective	1	100	Ser.			100	1540			777				1.5	į,
nclassified steam leaks	9		1		273	15	7	3	E- 50	260	127			0,	-
Number of defects	27	14	17	5	1,690	147	22	38	14	3	1, 244	11	9	5	F
ocomotives owned	12	12	17	-	150	26	2	5		2	445	3	3	2	F
ocomotives inspected	- 5	3	13	î	294	26	3:	16	2	2 2	1,030	3	6	2	t
ocomotives defective	5	-3	9	- 3	204	25	3	12	2		478	3	6	2	
secomptives ordered from service	0	- 0	()	.0	33	2	1	- 0	. 0	.0.	6.1	0	0	0	1

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Stay bolts broken Rigid bolts leaking 1 Pleatible bolts leaking 1 Pelitales closed 1 Pelitales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking Other sheets leaking Thus leaking Other sheets leaking Other sheets leaking Other sheet leaking Other sh	Sharpsville.	Shearwood.	Shemeld & Tion- esta.	8	Sierra Ry. of Cal.	Sioux City Termi- nal.	Skaneateles.	South Buffalo,	South Carolina Western.	South Dakota Central.	S. Ga. Ry. & W. Coast.	Sn. Iron & Equip.	Southern Ry.	Southern Ry, in Miss.	Southern Pacific.
Stay bolts broken	2		6		4	1	1						386		1,5
Rigid bolts leaking 1						***		****			1		7		26
Celltales closed 1		111			1			33	100	355		100	51	100	2
'elltales stopped up 1	3				2		3		1	1	3		229		7
tay bolts not drilled 2	1		****	1777		****		****	****		1		20	****	11
ther sheets leaking							1		7		2		49		3
ire-hox sheets bulged			***	-	1	****			F. V.	2.2.	1	2.44	5		2
lues plugged	10		****	1	24	1	20	****			10	1111	10		1,1
rch flues leaking 1															
rch plugs leaking 1				****		****			****			41.51	4		
Barrel leaking												2111	14		1 3
ome leaking				1					1				14		
ind ring leaking	2		00			****			****	****	1	****	15	****	H
low-off cock leaking		200											16		1
ashout plugs leaking 1	1									2	1	****	31		1.
afety valve stuck	***	27		777	****			****		1000	***	7.7	******		
afety valve leaking													2		
age location improper								-240	****			****			
ial glass missing	100			1000		113	7.17	110	****	****	344	****	6		13
phon wrongly applied	2		1							2	3	1	.83	7	3
phon leaking		***	1					***					28		1
age cocks stopped up	1		3			1	111			2			47	1	1
age cocks inoperative						1116			1	3		ing!	39		2
age cocks blowing	2	1		****	1					1	1	1	129		I
age-cock drip defective												***	9		
rip pipe missing				***	- 14.					,		.,	3		1
ater glass missing.	0				C.S.	1111		1000			3		116	8	
ater glass stopped up			1							1110			10	.,	
ater-glass cocks defective	777	.,,	55	****	****	****			••••		-1		16		3
ater-glass blow-off cock defective .	1						1						134		
ater-glass tube broken	250								1				14	-	
amp missing	+4-	***	1	2		****	3		***	***	***		3		
ater-glass shield defective	1						1	4		7					
ater glass improperly located	1	de			1101	-						***	3		1,
ubricator shields defective	1	175			9		o.			2		20	107	8	L.C
jector inoperative		1		****									. 0		
pector tank valve defective	- 44		1	***			1700		1	11.55			11	1347	3
jector feed pipe defective	500	155	256.	1201	2.54	1200	2000			-85.1		- 15.5	7	22	Y
ector throttle defective	1		1								1		40		I
lector steam pipe defective	***	***	****	***	****	-	1	1977	19.77	1444	0.1	446.5	13	***	1
ector boiler check defective	171	T		0101	1111		1			6.6	No.	Nu.	- 0		1
ab card missing	1		2	3181	51.80		2	×-0	* - (= +)	1.00	Op.	-4->	21	4	24
ire-box plug not secured	3				X-X-			1	2.00	531	3	600	203	15	11
ater-glass drip missing	241	12-	29.00	1. 11	1440	1292	2222		1,23,6	100		100	24	1	
ater-glass drip delective	185		***	1494	250	1960	****	****	1000	3000	444	1000	1		
age-cock drip improperly located	101		3										1	1397	-
re-box sheets corroded		-11-			198	1-1		110-			L		(0.00)	13(1)	
nelassified steam leaks	121	122	2	07.0	13	12.0	3	****		1 - 1	LOCK.	19	138	- X - A	3.1
Number of defects	23	3	24	Ä.	SI	3	XI.	3	in.	30	38	1	5.38	41	ri, h
ocomotives owned	5	9	73	2	10	-	-	art.	-0	Di	hi		1,133	31	Too
comotives inspected	i.	1	4	2	UK.	2	13	10	10	in	7	T)	4, 430		2,10
ocomotives inspected ocomotives defective ocomotives ordered from service	ñ	1	1	3	10	3		9	100	4	1:	L	,040 .	20	$\Gamma_{i} =$
ocomonives ordered from service		()	1	111	- 11	1.1	11	11	111		1.1			1.1	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

tay bolts broken ligid bolts leaking 1 lexible bolts leaking 1 lexible bolts leaking 1 letitales closed 1 letitales stopped up 1 lexible bolts leaking lirebox sheets belaking lirebox sheets bulged lues leaking 1 lues leaking 2 lues leaking 3 lues leaking 3 lues leaking 4 lues leaking 4 lues leaking 5 lues leaking 6 lues leaking 6 lues leaking 6 lues leaking 6 lues leaking 7 lues leaking 8 lues leaking 9 lues leaking 9 lues leaking 1 lues lues leaking 1 lues lues lues lues lues lues lues lues	1 1 1 1	2	1	3 3 6	14	10	54		1 1 1			`i		1	
ligid boits leaking ' lexible boits leaking ' elitales closed ' ' elitales stopped up ' tay boits not drilled ' rown sheet leaking ' ther sheets leaking ' irebox sheets bulged ' lues leaking ' lues leaking '	1 1 1 1	2	1	3 3 6	i	2	 2 2		1			1			
lexible bolts leaking ' letitales closed ' 'celltales closed ' 'celltales stopped up ' 'tay bolts not drilled ' 'rown sheet leaking ' 'ther sheets leaking ' 'thes sheets bulged ' 'lues leaking ' 'lues leaking ' 'lues leaking ' 'ush plugs leaking ' 'wishle plug leaking ' 'sarrel leaking ' 'broat sheet leaking ' 'hroat sheet leaking ' 'lues deaking ' 'yashout plugs leaking ' 'yashout plugs leaking ' 'yashout plugs leaking '	1 1 1 2 2 2 1	2	1	3 3 6	i	2	2 2		i						
celltales closed 'up' 'celltales stopped up' 'tay bolts not drilled 's 'rown sheet leaking.' ther sheets leaking.' irebox sheets bulged 'lues leaking 'lues leaking 'lues leaking 'lues plugged 'reh flues leaking 'lues beaking 'lues leaking 'lues 'lues leaking 'lues 'lu	1 1 2 2 2 1	2	1	3 6	1	2	2 2		1		11.5				
tay bolts not drilled s rown sheet leaking ther sheets leaking ther sheets leaking lirebox sheets bulged lues leaking s lues plugged reh flues leaking s usible plug leaking sarrel leaking bome leaking bome leaking throat sheet leaking flud ring leaking slow-off cock leaking vashout plugs leaking vashout plugs leaking	1 1 2 2 2 1	2	1	2 1			2				*** ** ** **			2	
rown sheet leaking. 'ther sheets leaking. 'trebox sheets bulged. 'lues leaking ' 'lues plugged. rch flues leaking ' rch plugs leaking ' rushle plug leaking. Barrel leaking. Barrel leaking. Barrel leaking. Barrel leaking. Broat sheet leaking. Blow-off cock leaking. Vashout plugs leaking.	1 1 2 2 2 1	2		2 1				22.55				1		****	
ther sheets leaking 'irebox sheets bulged 'lues leaking ' 'lues plugged 'reh floes leaking ' 'reh plugs leaking ' 'vaible plug leaking ' 'arrel leaking 'barrel leaking 'broat sheet leaking find ring leaking 'slow-off cock leaking 'vashout plugs leaking 'vashout plugs leaking	2 2 2 1			2 1			1								***
Treox sneets object Thes leaking ' Thes plugged , rich flues leaking ' , rich plugs leaking (, rich plugs (, rich plu	2 2 2 1			1		****	2							1	***
Tues plugged rch flues leaking \ rch plugs leaking \ rus ble plug leaking \ arrel leaking arrel leaking bome leaking bome leaking fluor sheet leaking fluor ring leaking flow-off cock leaking Vashout plugs leaking \ Vashout	2 2 2 1			1			6								
rch flues leaking 1 rch plugs leaking 1 usible plug leaking Barrel leaking borne leaking Throat sheet leaking fud ring leaking llow-off cock leaking Vashout plugs leaking Vashout plugs leaking	2 2 2 2 1					3		12	1						
rch plugs leaking ' 'usible plug leaking Barrel leaking Dome leaking Throat sheet leaking fud ring leaking Slow-off cock leaking Vashout plugs leaking	2 2 2 1		1	100							****			****	
usine ping leaking sarrel leaking bome leaking 'hroat sheet leaking find ring leaking slow-off cock leaking 'Vashout plugs leaking	2 2 2 1				****	****	*****				****			• • • • •	**
ome leaking 'hroat sheet leaking fud ring leaking slow-off eeek leaking Vashout plugs leaking	2 2 1	::::	10000	3	125	1000		2			100	200	1511	2	
'hroat sheet leakingfud ring leaking	2 2 1						1								
fud ring leakingBlow-off cock leakingVashout plugs leaking	2 1			42.5	2424						*242		****		
Vashout plugs leaking	í	2553	****				12	****	****					****	
		1000		1	100	1111	2	i	0.00		0.00		1000	5000	17
afety valve missing															0.
afety valve stuck								de							
afety valve leaking						24.45	*****			****	3-54		****	****	-
lage location improper	15.0		****	1.5	177	****		****	1111	100	****			1000	17.
Dial-glass missing	1111			1	120		3	1000		100		100		5.0.	13
iphon wrongly applied	2			2				1				2		3	
iphon leaking				3			1		****		$\psi(x,y) \in$				
lage cocks wrongly located	****		****	1	****	1	*****			****		****		****	10
lage cocks inoperative	1	1	7		1111	2	1	100						1111	1:
age cocks blowing				7	2		*****	1			4000	5		2.00	1.
lage-cock handle defective			***						****	4.8 - 4			***	1	
rage-cock drip defective		****	****	6					0.0		****	***	****		
Sipples defective or missing	7.5	7.33		36		100		100	1						110
Vater glass missing	46.45				1			1				2			١.,
Vater glass stopped up	000	200				7574			+	49.4	****	****			
Vater-glass cocks delective	***		137	1	13.0				****			****			
Vater-glass blow-off cock defective .				7	G.,	C.	2	1					1		
Water-glass tube broken							22255		4-99	44.5			245.4	6000	100
amp missing			25.65		48.4				***						-
Vater-glass shield missing	400	***		10		2	1000	****				4.5.	1111	- 5	
Vater glass improperly located			1.00			1.5.				13		3.5			
ubricator shields missing		1		1				1	2			2		6	1
ubricator shields defective				-1.00	100.00	***	- 1	2429		****	2486	4.00			10
njector tank valve defective		-		200		1000				37.55	1000			****	1
nlector tank hose defective	110		0.6			1000	1	201	1000	100	1100	1	113		10
njector feed pipe defective	6.00			2	2000							****			
Water-glass tube broken amp missing. Vater-glass shield missing. Vater-glass shield missing. Vater-glass shield defective. Jubricator shields missing. Jubricator shields missing. Jubricator shields defective njector tank valve defective njector tank hose defective. Jipector tank hose defective. Jipector ted pipe defective. Jipector steam pipe defective. Jipector steam pipe defective. Jipector olivery pipe defective. Jipector boiler check defective. Jipector boiler check defective. Jab card missing. Jadge plate missing. Vater-glass drip missing. Vater-glass drip defective.	1.44		120	5		000	1						1	***	63
njector steam pipe defective	1000	17			130	1	1	2	-				70.		1
nlector boiler check defective	1	1.5.	0.1	3			1		1333		1000			000	1
ab card missing	3			1		2	100000	1			1	2	die.	6	12.
Indge plate missing	3	2	4	2		2	12	2	***	1	****	2			
Vater-glass drin missing			333	3				***				0			10
Vater-glass drip defective				1.5			1	3.2		10.1	1000	200		1000	JE:
water-gaiss drip wrongly tocated			43.45	300	150.00										
Page-cock drip improperly located.				-	-	10.00	25.00.00				(**)			49.93	-
fire hose defective			100	1		1			****		13.83		***		
Inclassified ateam leaks	3	1	1.1	24		****	19	3	7	12		1	100		1
Number of defects	-	9	-	160	18	24	130	27	14	1	1	26	2	23	1
ocomotives owned	4	2	15	68	3	2	42	2	2	2	2	1	2	5	-
ocomotives inspected	1.4	2	10	57	1	2 2	46	2 2 9	24.24.24	1	-2	2	1	10	
ocomotives defective	3	0	6	45	1	20	37	2	0	1 0	0	1	1	7	1

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Stay bolts broken. Rigid bolts leaking 1 Flerible holts leaking 1 Fleitile solosed 1 Telitales closed 1 Telitales closed 1 Telitales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking Other sheets leaking Fire-box sheets bulged. Filues leaking 1 Flues leaking 1 Flues plugged. Arch flues leaking 1 Flues plugged Arch flues leaking 1 For sheet leaking 1 For sheet leaking 2 Dome leaking 3 Dome leaking 4 Throat sheet leaking Mud ring leaking Blow-off cock leaking Mud ring leaking Blow-off cock leaking Washout plugs leaking 4 Safety valve missing 5 Safety valve stuck 5 Safety stuck 5 Safety valve stuck 5 Safety stuck 5 Sa	Sumpter & Choc- taw.	Sunday Creek.	Superior & South- east.	Surrey, Sussex	Susquehanna & Buffalo,	Susquehanna & New York.	Susquehanna, Bloomsburg & B.	Susquehan, Riv. & West.	Swannanoa.	Sylacuaga & We- fumpka.	Sylvania & Gl- rard.	Talbotton.	Tallassee & Mont-gom.	Tallulah Falls.	Tampa & Gulf Coast.
Stay bolts broken				1		2		2							1
Rigid bolts leaking 1							****							1	
Telltales closed 1		****							:22:	200	****	****	100	.,	***
Telltales stopped up 1															7
Stay bolts not drilled 2			2		1	5	2			****					
Other shouts leaking	****	****		555	*****		200	****			· · · ·	43.15			
Fire-box sheets bulged			2						100			****		333	****
Flues leaking 1										· · · ·		ere.		4577	
Arch fines looking 1			****	****				1221	4.00	2411	2222			****	
Arch plugs leaking 1	131	1000							1211	333	1111	****	****	30	***
Fusible plug leaking												19.55		25.44	
Dome leaking	****	1	175-		1000	2		****				44.49			
Throat sheet leaking			1		10000	****	****		133		1 2 2 Y			***	****
Mud ring leaking		1				4		1,1,1,1			1		1.3	100	
Blow-off cock leaking			2424	1171		1	1124								
Safety valve missing	3	1				7.77	1000		1 5.05	13.5	Yeve	43.55	****	****	
Safety valve stuck								****						11.	1111
Safety valve leaking			3465	See	iii.	5500									
lage location improper	****		****	****	X+240-5			144		-++4	100			1	
Dial-glass missing	1			2.71	100000	1291	1444	1000	133	110		1111		10.0	135
iphon wrongly applied	3.	1	1			1		1	****		1	1333	3	2	100
siphon leaking	****					1800		1191		***				3	422
Page cocks wrongly located	****		Y'AT	T		375	1000	4.00			4,000	****		**	
Sage cocks inoperative			1535						1	1111	1	100	1000	2	- 84
lage cocks blowing	+-+1	2			16.66.63	242				1	2				2 4 2
Page-cock handle delective		++++		ev.	****	1393	1,1,77	*,***				ere e e		22.20	3
Drip pipe missing						1000	100	122	1117	8 4 4 4	****	****	*8*1		****
Nipples defective or missing	****		4000		249404	1123	1337	6000		4311	1 4 4 1 1				7.0
Water glass missing	8	2		4		-7.				1	3	1	-3	7	45.
Water-glass cocks defective	****	200	****	231		2004		004	1000	43/43	1141		****		-54
Water-glass cock handle defective			****			1211	644	100							
Water-glass blow-off cock defective								100	1190			****	****		
Amp missing			***	****	270707	.855	1	2262	9.5	5573	7978		***		200
Water-glass shield missing	4444			+			2		1			1124	10.0	2000	170
Water-glass shield defective	0.0	1216		00	ora.			244	1261	21.65	1421				
wheleater shields missing	4	0	****		******	****	1.1	¥213	144	4,44,0	44.44		17	-	- 07
ubricator shields defective	4		****	1111							+ + +				
njector inoperative	1				*****		1		118	1111	1		5655	3	
njector tank valve defective	5570	1070	1337	1250	270701	9	27.57	55.55	5 4 4 5	557)	***	2.636	F 5.4.3		
niector faed pipe defective	T	1531	24.55	77.77	Sexes:	1	2				2.4 0.4		****		1
njector throftle defective	2			1	energy I	3	1	1111							779
njector steam pipe defective	41.21	1	29.22	4355	****	1191							-		3
njector delivery pipe defective				****	1	-500	1						7100		
ab card missing	4	2		4					2	1	2 2	1	1		2.00
sanka Emma mersamiliar construction	0	1.0	40.00	三丁五二		-	- 44	1	2	1	2		2	1	
njector throftle defective, njector steam pipe defective, njector delivery pipe defective, njector boiler check defective, ab card missing, sadge plate missing, ire-box plug not secured, vater-glass drip missing, vater-glass drip defective			0.0			***	5151		***	200	**	Ligh	100	4.124	-45
Vater-glass drip defective	****	1151	****		ELECT.	V1. V1	X - X -	2443	1245	1111	1000		1000	1121	
Vater-glass drip wrongly located		25.2.		3.0			See				00		1000	-	
inge-cock drip Improperly located.		- 500				co.			1151	1171		1100	1000	-111	
ire-box sneets corroded		400	***	0.00	*****	****	-7-4-	1510	1131	115	100	5.5.5.3	1 (+2	F(-)	- 50
fire-box plug not secured. Water-glass drip missing Water-glass drip defective Water-glass drip wrongly located Nage-cock drip improperly located Vire-box sheefs corroded Vire-hose defective Inclassified steam leaks	13.5	3		1	1	5	2	24X III	207	113-0	1	2	N. Cont.	3	1
Number of defects	35	-	6	12	5	35	20	4	ij.	4	14	4	10	25	1
ocomotives owned	D	2	4	14	2	15	9	2	1	7	2	1	1	4	
ocomotives inspected	9 8	2 2	3	4	2	17	10	4.	2	1	5	1	3	7	3
	- 63	- 9	- 3	4		13	- 8	3.	143	- 1	4	1	- 73	1791	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Tampa & Jack- sonville.	Tampa Northern.	Tavares & Gulf.	Tenn. & Cumber- land River.	Tenn. & N. C.	Tenn., Ala. & Ga.	Tennessee Cen- tral.	Tennessee.	Term, R. R. Ass. of St. L.	Texarkana & Ft. Smith.	Texas & Gulf.	Texas & New Or-	Texas & Pacific.	Texas Central.	Texas City Ter-
stay bolts broken Rigid bolts leaking 1 Plestible bolts leaking 1 Postible bolts leaking 1 Postible bolts leaking 1 Postible bolts leaking 1 Postible stopped up 1 Postible bolts not drilled 2 Drown sheet leaking Plues leaking 1 Plues plugged Arch flues leaking 1 Plues leaking 2 Postible plug leaking 3 Postible plug leaking 3 Postible plug leaking 3 Postible plug leaking 4 Postible plug leaking 4 Postible plug leaking 4 Postible plug leaking 5 Postible plug leaking 6 Postible plug leaking 6 Postible plug leaking 7 Postible plug leaking 9	4	1					1		62	2		34	292	19	
Rigid bolts leaking 1				1			1		1	1			19	1	
Flexible bolts leaking *	1555		127	1000	i	****	5	****			***	4	15	****	1
Celltales stopped up 1		1	1		î		5	2	1	2	1	13	87	1	100
stay bolts not drilled 2		1										3	17	2 2	
rown sheet leaking		****	***	45.65			9	***	10		***	3	47	2	4.50
Fire hox sheets bulged							a		10		****	1	19	****	
Flues leaking 1	2			1	1		3	2	2		1	I	16	2	1
Flues plugged	***			****			2		9				65	1	
Arch flues leaking 1		40.00	.,.,	***	****	****			****			.,			***
Fusible plug leaking		****		13.0		****			000		****			****	155
Barrel leaking			100						4				5		
Dome leaking							1		3	1		2	6 3 7 24		
Throat sheet leaking	3,			00			****		12	****		1	3	1	14.9
Blow-off cock leaking	100	100	131	1	155	200			3			4	24		
Washout plugs leaking 1	3,						5		10	1		2	13	1	
Safety valve missing		1000	***	.7.1	****										
Safety valve leaking							****	****	***	****	****	444.	3	****	***
lage location improper	1111		1111	111	1111					****					10
Page incorrect							1					1	2		
Dial glass missing							****		****	++++			1	i	
Siphon wrongly applied	1	1	***	1	1	1	1	1	4		1	3	9	1	0.0
lage cocks wrongly located	117	1111	7101	1111	1111			22			1		4	110	line.
lage cocks stopped up					1		2			or.		2	3	1	
lage cocks inoperative	1	110	1	40.00					****	2	1	3	19	1	
Page-cock handle defective	1			1	2	****	0	3		****		2	2		6.4.5
Gage-cock drip defective													1		
Orip pipe missing									***	1					
Nipples defective or missing	****	***	17	1			****		****		****	****	0		
Water class stopped up		4			3		i	u	555	****		****			1
Water-glass cocks defective		2										4	16		1
Water-glass cock handle defective													*****	1	
Water-glass blow-off cock delective.				1	17		1		1	****		1	44	****	
amp missing															123
Vater-glass shield missing	4993								1		1	1	17	2	1
Vater-glass shield defective			7.00		1		7		8				34		+ 5
ubricator shields missing	3	1323	1	1	1		****	7	22	1	2	3	54	1	***
ubricator shields defective							6						1	i	
njector inoperative	1			5435	1		1	1			in	2	1		deres
njector tank valve defective		1240	29	1,000			***	***	****	4.4.4		****			
njector feed pipe defective	100	3530	100	1230	133				3		100	2	4		100
njector throttle defective	1	1					2				5785	8	17		
njector steam pipe defective	***						1		4	1		3	23		
njector delivery pipe defective				2427	1			2	3	****	****	9	16	9	***
ab card missing	1111	1	1	1		200	T		2	3		2	22	-5	
Sadge plate missing	4	17.5	100	1989					15			2	30	3 5 1	
ire-box plug not secured	3	1470	1.443	1000	1943		****	****	****	****		1	124		K. T.
Vater-plass drip defective	T			100		****	1	-707		****	****		1		100
Vater-glass drip wrongly located.	1111	1833	5.0	1,000	-100		1011						49.44		
lace-cock drip improperly located			3.00						de	-		400			
fire-box sheets corroded	***	1107		1927	1977					**	-				100
nclassified steam leaks		3	2711	4	133	****	8	1	26	4	Gir	10	162	2	155
Number of defects	40	12	4	17	10	4	18	28	221	22	7		1, 259	49	
ocomotives owned	4	6	Ty.	1	-	7	32	-	11%	3	-	44	300	31	-
ocolnotives inspected	36	- 5	1	8	A	7 10 70	13	7	KB.	33	.4	70	343	17	
accomplives defective	39	-5	1	3	A		11.	7	61	3	3	5.3	283	8	
ocomotives ordered from service	· -x	- 0	0	- 0	0	0	1.1	1	1	0	0.	3	27	7	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects,	Texas-Mexican.	Texas Midland.	Texas Short Line.	Texas Southeast-	Texas State.	Thornton & Alex- andria.	Tidewater &	Tifton Terminal.	Tioga & South- eastern.	Tionesta Valley.	Timpson & Hen- derson.	Toledo & Ohio Central.	Toledo, Peoria &	Toledo, St. Louis	Tolodo Torminal
tay bolts broken	1	29	12	5			1	****				62	21	105	
Rigid bolts leaking	****	1		****								6 3	2	3	
elitales closed 1		0.0	333	1111	110	1	100		1117	****	1111	1	80.	4	130
elitales stopped up 1	1	1	2	3			2	1540				3	4	3	100
tay bolts not drilled 3	22.44	23.89		****		****			****		-424	11	1	16	
ther sheets leaking		2	100	1117	1000	200	****	1111				9 29	2	8	1.4
light botts leaking		4	1		10.5			1	100		2000		2 2 3	1	1
ire-nox sneets bulged. Thes leaking ' Thes plugged treh flues leaking ' treh flues leaking ' treh plugs leaking ' treb plug leaking arrel leaking treh flues treh flu		1	3						****			13	3	5	1
rch flues leaking l		****	3	1555		1111	1,517	****	****	+++>	****		100	13	
rch plugs leaking 1					3.5.							1		1111	
usible plug leaking						4244	48.5		-						
lome looking				45.24	10.0	****		****	****	40.19	***	2 6	25.95	0	4-
broat sheet leaking			137	000	1857	115		****	22.00	1		.0	12.5	4	2
fud ring leaking				****				2		1		9	1	2	
fud ring leaking low-off cock leaking Vashout plugs leaking ! alety valve missing		2				,	45-9			49.53	****	31	1283	13	-
afety valve missing			2		***	****	****	1	****	11		36		1	
afety valve stuck afety valve leaking age location improper					0082			833	111			11000	133		1
Mety valve leaking					- 140			****		4 - 4 3		10		6	
age location improper			73.77	****			444	17.58	135-		****		000		16
age incorrectial glass missing.	****	223		7011	***	1010	****	1	4	****	****	*****	2-1-	****	-
phon wrongly applied	2	6		1				4	2	5		1	2		
phon leaking	1000	1	100	>5		1711		1	48.25			13	1	4	
age cocks stopped up	1	1	tent	1785	***	5131	4444	****	1	00	31.5	3	1	9	9
age cocks inoperative	2	2	111	1	i			1	î	4	1015	1	1	3	
age cocks blowing		3	1	20.0		- 12.5		1		1	5	24	1	12	
age-cock handle defective				22.0	1		.7.5	2	2	3		1	15.70	2	
np pipe missing		1	****	****		1					19.85	1		1	-
age incorrect. Isl glass missing, iphon wrongly applied, iphon leaking, age cocks wrongly located age cocks stopped up, age cocks blowing, age cock blowing, age-cock handle defective age-cock drip defective, ipplies defective or missing, ater glass missing, ater glass stopped up.		22.00		1.717	1						200		100		
ater glass missing								3		7	****				E.
ater glass stopped up				4.40	1111		44.5	****		1500	2223	16	2	io	
ater-glass cocks defective ater-glas scock handle defective ater-glass blow-off cock defective ater-glass tube broken				i	1		****		5555	1	1000	10	-	147	
ater-glass blow-off cock defective .		1	1	1		1 11-3			2	1	1	2	1	7	
amp missing		0.51	4-24	200	1000	2403	42.5	2	-743						
ater-glass shield missing	1	2.00	1	Vi.	****	T	***		****	ī		*****	1	57.55	
oter glass chield defective	2	1191		1		Des.			200					3	
ater glass improperly located	100	-42		** 17	1177	5-50	1177	TIME	2227		- 242			271	
ater glass improperly located ubricator shields missing ubricator shields defective		4	1	1717		4.00	- 3	3	***		- 1.45	4	3	2	
jector inoperative		200	3					2	2.53	1	1000	I	25.50		
jector tank valve defective										1					
iector feed pipe defective	0.00	1	1	2	1		A (4) A A	1		2	54.0	11	1155	100	
ector throttle defective		2.55	1	2	1		100	U		T	1101	21	1517	6	
ector steam pipe defective		3	1		1191	1550	8 50 10	1		100	-1-1	15		2	
jector delivery pipe delective			1	1755	1		5-50	5 4 (1)	++(+)	i en	1291	4	1	1101	
b card missing	7	3781	2	I	1	T.	20	-9		T	1	16		-3	
idge plate missing	7	1	1	1.00	1112	120	2215	4		2		29	1	27	
jector tank valve defective. jector tank hose defective. jector feed pipe defective. jector throttle defective. jector steam pipe defective. jector delivery pipe defective. jector bloider check defective. jector boiler check defective. jector boiler check defective. jector boiler check defective. jector boiler check defective.		****	45.24		9415	100	20		-000	000	1000	-		4	
ater-glass drip defective	12.22			22.	****	1	L	- 10			1317	10000	6.X+3	-295	
ater-glass drip defective ater-glass drip wrongly located age-cock drip improperly located re-box sheets corroded.			-		****	5565	1010	1211			1	The Late	4 2 2 2	28.1	
age-cock drip improperly located		-		22.5			2480	X=)	150	200		12234			
re hose defective	* 77	1000	15.54	1.0×	2020	3.12	2.71	141				-			
aclassified steam leaks	THE	6	7	227	1	2	1013	3	27	3		97	5	15	
Number of defects	25	72	45	11.	0	- 0	9	37	11.	46	2	500	33	327	
comotives owned	12	17	9	=	7	1	6	1	3	13	1	P26	39	tos	8
	100				1	-8	1.31		- 2						
ocomotives inspected	13:	26	3	1.	-7.	3.0	10	3	-09	100	- 1	27.107	RV	1.4%	

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Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

	e Val-	& Tide-	lley.	Ham, &	Brazos	Val.	4	Valley.	& St. Riv.		: Dela-	Valley.		Glenn igs.	B.
Defects.	Tombigbee	Tonopah & water.	Tooele Valley.	Toronto, Ham. Buffalo.	Trinity & Brazos	Trinity V	Tuckerton.	Tuscarora Valley	Fran.	Uintah.	Ulster & ware.	Unadilla Valley	Unicol.	Union & Glenn Springs.	Union R. R.
Stay bolts broken	83	1			5		3			3	6			1	
Rigid bolts leaking											44.	0.0			
lexible bolts leaking 1	*****		****	****							1	****	***	250	**
Celltales closed 4	*****	3		1	5	****	***	****			2	****	***	3	44
stay holts not drilled *			3				: 50	1	100			1000	150		
rown sheet leaking			· ···				1			2					
Other sheets leaking	1				3						1	5550		****	
Pire-box sheets bulged	. 0			1	1	****		****	1	9	2	****		****	
lines plugged	5	3701			1	9	****	1		2			4		
reh flues leaking 1															6.0
rch plugs leaking 1						+25.4									
usible plug leaking	*****	2.25		****							1150				
Sarrel leaking	*****		****		130.		****	****		1	1	23.55		227	-
broat sheet leaking	*****				1773	200	****	30		1100				200	1
fud ring leaking							1								
llow-off cock leaking	Aires		Cont		2		1			.545			43.63	444	100
Vashout plugs leaking 1	1	****			1	****						2020		2	-
afety valve missing	*****	****							2				****		2.3
afety valve leaking	1		***			100		9	177		3:0:	****	***	30	5
age location improper					1000		200		1.61				133	100	
age incorrect											1				6.
pial glass missing	danage	****		***			1424							54.94	50
iphon wrongly applied	1		2434				2	1	2			45.0	2	144	
age cocks wrongly located	7777	100	****			****		****	77.7	2		7.7.		100	47
age cocks stopped up			3000	0101	11.00	2		100		330	100.	333	2177	1	1
age cocks inoperative	*****				1					2					
age cocks blowing		44.0		***	2		1	2	1	2			1		
age-cock handle delective		****	***					**	2			****	****	4,000	4,5
rin nine missing	*****		000		1		***		1	3		***	****	****	
ipples defective or missing	L.	3				00.0		1000		10	100			100	Ü
ater glass missing	2	54.25		2.95				1							
Vater glass stopped up											2000				
ater-glass cocks delective		22.55	****		1111	****	3555			*	24.0		****	1	
Vater-glass blow-off cock defective .		5000		0101			1	200		4			1	i	1
later-glass tube broken		40.50					1	2444		68.4	1			3	1
amp missing	****		20.85			1153	2244		2000					2	
ater-glass shield missing	*****				1000	1			2		5000		4		
Vater glass smeld delective			****		1		2 -		****	1		623		1	
ubricator shields missing	1	111	100	1111		1	6	4	5.7.5	. 60	133	****	2	****	
ubricator shields defective											1				
ajector inoperative										1		4433	- 000	-554	
njector tank valve delective	2	2							****			2000			
njector feed nine defective	000	****		****	****	****	0.00		****					3	7
njector throttle defective		1								3	1	1111	335	î	
elector steam pipe defective	Servi.									2	****			1	
njector delivery pipe defective								1	2003		64.0	1			
lector boller check delective		***	4.20	50.50	****	***		4.00	11	111-1		-4			
adae plate missing	2	****	3	-	1		9	1	2	2	1411	1	- 2	2	
ire-box plug not secured		5		100		1111					2000	113	8000	1000	Ŀ.
ater-glass drip missing									2	6	2.00				
ater-glass drip defective	4	-		1		1175		5555	1775		1179				
arer-gass one wrongly located		3171	****	2151	****	****	***	***						+>>.	
ire-box sheets corroded	1	2.5		33.	1053	100		****	22.00		183	1577	170	****	
ire hose defective	and.					11.2.	1.2.	2202	2202		111	1000			1
nclassified steam leaks	DEPEK.	4		1501	2	1111		1		24	1	1		1	
tay bolts broken ligid bolts leaking ' lexhibe botts leaking ' elltales closed ' elltales closed ' elltales closed ' elltales stopped up ' tay bolts not drilled ' rown sheet leaking ' ther sheets leaking ' ther sheets leaking ' lines leaking ' reth flues leaking ' reth plugs leaking ' arrel leaking ' more leaking ' lowe flocek leaking (lowe flocek le	105	21	6	2	27	14	22	13	17	85	18	3	16	27	5
		0	70	26	59	1	3	70	_	11	29	9	- 0	-	1
ocomotives inspected	7	8	3	4	24	2	9	5	2	10	24	1	4	2	1
ocomotives detective	4	8	3	i	0	ī	8	å	2 2	9	9	1	- 4	7 0	
ocomotives ordered from service	- 9	10	()	10	1	- 7	o-	0	0	0	0	0	1	- 0	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

	Union Ry. (Mem- phis).	Union Carbide Co.	Union Pacific.	Union Stock Yards Co.	Union Trans. Co.	United Verde &	Upper Merion & Plym.	Ursina & North Fork.	Valdosta, Moult.	Valley.	Valley Connect-	Vandalia.	Va. & Carolina So.	Va. & Ky.	Va. Southwestern.
Stay bolts broken Rigid bolts leaking 1 Flexible bolts leaking 1 Flexible bolts leaking 1 Flexible bolts leaking 1 Flexible bolts leaking 1 Fleitales closed 1 Fleitales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking Other sheets leaking Fire-box sheets bulged Fire-box sheets leaking Fire-box sheets leaking 1 Frust leaking Barrel leaking Dome leaking Throat sheet leaking Mnd ring leaking Blow-off cock leaking Blow-off cock leaking Washout Just leaking			1,100	50		5						58			33
Flexible bolts leaking 1			52 15									1	111	111	1
Telltales closed 1			29 250	3		3		ĭ		****	++++	10	··i		12
Stay bolts not drilled 1			16	****	3	3 2 1		1				37			1
Other sheets leaking	****	••••	49 142	1	***	1	2		****	(4.4.h	***	9	****		3
Fire-box sheets bulged			18	ï	î							1	2		
Flues leaking 1	1		28 108	36		1	****	****		****		5			3
Arch flues leaking 1			1 12						****						
Fusible plug leaking	E		12		****	2			****	œ	1537	9.0			****
Barrel leaking			41 26			1						1			2
Throat sheet leaking		123	20	1111	****					11	****	ï	1	1	
Throat sheet leaking. Mind ring leaking. Blow-off cock leaking. Washout plugs leaking. Safety valve missing. Safety valve stuck. Safety valve stuck. Safety valve leaking. Gage location improper. Gage incorrect. Dial glass missing. Siphon leaking. Gage cocks wrongly located. Gage cocks stopped up. Gage cocks blowing. Gage cocks blowing. Gage-cock handle defective. Gage-cock drip defective. Dial plass missing. Water glass missing. Water glass stopped up. Water glass cocks defective. Water-glass cocks defective. Water-glass cock defective. Water-glass blow-off cock defective. Water-glass tube broken. Lamp missing.			38			1						9	1		1
Washout plugs leaking 1			77		2	2						8	****		4
Safety valve missing				****											
Safety valve leaking			8			****						5			°i
Gage location improper											••••			4425	
Dial glass missing			9	****											
Siphon wrongly applied		19-	43				****	1		1		4	1	2	
Gage cocks wrongly located	1		29 37										1000		
Gage cocks stopped up		****	161	1	1				****		••••			••••	;
Gage cocks blowing	3		163						2			28		1	24
Gage-cock handle defective			13	****	****	****		3	***	****	100	-434	"î"	****	****
Drip pipe missing			17	1	2000										
Water glass missing			1		2	3	2	ï	2				1 2 		15
Water glass stopped up			2										1		
Water-glass cock handle defective.			33	200			****	****	****			3	::::	::::	
Water-glass blow-off cock defective.	1		26			2						2	2		1
Lamp missing.				1202	,,,,				17.55	11.	++++		****		****
Water-glass shield missing	0			1								13	1	****	
Water glass improperly located	1		ā									3			
Lubricator shields missing	1		42 25	1000	3	2	2	1	1992	1	Exte	25	2	1	
Water-glass shield missing. Water-glass shield defective. Water glass improperly located. Lubricator shields missing. Lubricator shields defective. Injector inoperative. Lujetor tank valve defective.			10			****							1		3
Injector tank valve delective			14 39	331			****	i	44-8		2007	-5+3	1	1	****
Injector feed pipe defective			17		1	2211	e e h s	444		1		I			
Injector throttle delective	1		110 32 21				34.57	22	1	ï		10	1	1	3
Injector delivery pipe defective			21 39	1555							إرجاء	4	- 612		3
Cab card missing	I.	2	40	1	4		2	1	2		2	2	2 2	****	
Badge plate missing			158		1	2		1		1		33 4	2		2
Water-glass drip missing			9	1001	1.11	2							1100		
Water-glass drip defective		-91	2			2250	1111								
Injector tank hose defective Injector feed pipe defective Injector throttle defective Injector steam pipe defective Injector steam pipe defective Injector delivery pipe defective Injector boller check defective Cab card missing Badge plate missing Badge plate missing Fire-box plug not secured Water-glass drip missing Water-glass drip missing Water-glass drip mosting Gage-cock drip improperly located Gage-cock drip improperly located Fire-box sheets corroded Fire-box sheets corroded			2	1000			100						****	****	
Fire-box sheets corroded			30	****	1555	1565		1171	1172	- 2		-272	****	****	1515
Fire hose defective	4		640	4	12	2	100	1	1	ï		48	1	ï	177
Number of defects	18	-	3,857	98	30	33	8	11:	11	6	2	343	23	8	138
Locomotives owned	4	1	768	12	3	3		2	9	4	2	234	4	1	29
Locomotives inspected	II	2	1, 0n5 705	20	107	13	2	1	4	1	2	191	7	2	54
Locomotives defective Locomotives ordered from service	1	100	1.00	14	10.8	- 4		1	-63	1.	0	103	(1)	10	93

Number of locomotives reported with this defect.
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 Also includes stay bolts not properly drilled.

Defects.	Va. & Truckee.	VaCarolina.	Virginian.	Wabash.	Wabash, Chester & W.	Wabash - Pitts- burg Term.	Wadley Southern,	Ware Shoals.	Warren & Ouach- ita Val.	Warren, Johnsv. & S. Riv.	Warrenton.	Washington & Choctaw,	Washington, Pot.	Washington Run.	Washington
Stay bolts broken		1	24	560	1		7					****			
			3	26 8				***		****	****		****		
Flexible bolts leaking '	1	12.00	1111	14	1	2	****	100	1111	11.5		100		770	12
Telltales stopped up 1	î	100	15	109		3	3		1					200	100
Stay bolts not drilled 1		1	2	53	****								44.00		
Nigit bolts leaking 1 Telltales closed 1 Telltales stopped up 1 Stay bolts not drilled 2 Crown sheet leaking. Other sheets leaking.	1		1 3	59	77.57	****				277	1500	****	****		
Fire-box sheets bulged	****	4	0	9										1111	1
Flues leaking 1			5	10		1			1					430	
Flues plugged		Laure L	13	214								7	****	+240	
Arch flues leaking 1		****	,.	0		****	2222			43.55		****	****		
Fusible plug leaking	711		1			100	177	. 8.4				133		100	1000
Barrel leaking		2465	6.2.	18	2000							1			
Dome looking			1	16		1						****	2775		
Throat sheet leaking		775	3	17	2555	ï	****				****	****			
Blow-off cock leaking		3030	4	32	12.5					awal.			1		111
Washout plugs leaking 1	1			85		1	1						# × 5 m		0.3
Throat sheet leaking. Mud ring leaking. Blow-off cock leaking. Washout plugs leaking. Safety valve missing. Safety valve stuck. Safety valve leaking.				11000			-11.	****	****		****	****	****		**
Safety valve leaking		1		5		1177		110	2000		11.0	150	1123		
															1
Gage incorrect				1	20.00		4.15.1	5584		****	****	***	****	-	100
Dial-glass missing		****		4	ï	3			77.7			20	1		
Siphon wrongly applied		22.50	5.11	8	1.3.										
Gage cocks wrongly located			10000	2	24.0					****		000			400
Gage cocks stopped up			3	14	****				****	****	****	****	****		
Gage cocks blowing	****	23.	14	50	i	100		100			111	13.7	1111	377	1.77
Cago gook handla defeative		1		4			9.25.1			1					100
Gage-cock drip defective	4.		2	4						erai.			- 2.23		
Gage-cock drip defective	1	****	****	5	****	200	****	2555	0.00	^***		27.7		45.75	***
Water glass missing.					****		****	1	633			1			(i
Water glass stopped up			***	3											
Water-glass cocks defective		***	2	15	2000	- 1			****		****	9900		1000	
Water-glass cock handle defective Water-glass blow-off cock defective.	13.1	0301	****	24	1		****	***			135	****	100		***
Water-glass tube broken				2								1			
Lamp missing				10	100	5521		****	****	400	49.69	53.95			
Water-glass shield missing Water-glass shield defective		****		81	-1		****	****	3	****		7.55		****	
Water glass improperly located				1	1							1000			10
Lubricator shields missing Lubricator shields defective	1	1	1434	157	1	4.		1	20.5	-1	1	1		1	
Lubricator shields defective				31	1744					-4 x 4		49.44	****		
Injector inoperative	****	****		10											100
Injector tank hose defective Injector feed pipe defective	1		211	7	1	1						1		****	1
Injector feed pipe defective	0.0	000	1	17	1000	222	-5-3		- * * *			19.6			
Injector throttle defective Injector steam pipe defective			5	33 55	****	2		3829	2	6.X 6.X		* > * >		****	
Injector delivery pipe defective	12.1	inte	1	10	22.4.2	1						1000	100	1111	000
miactor boiler check defective			3	18									4 - 4 - 1	- 1	
Cab card missing	-	1	13	57	+ 10 e/e	1			3	1		1			
Badge plate missing	7	****	3	47	1.00	00.00	1373		1111	-344	Aver	.4	1	****	
Fire-box plug not secured. Water-glass drip missing. Water-glass drip defective		1		21	Can't	F15.						100			100
Water-glass drip defective			1	2											14.
Water-glass drip wrongly located Gage-cock drip improperly located	25.5%	2501	YAT.	1	1000	$b = (\gamma_1)^{\gamma_1}$		SIL	1410	1111	13.00	19,24	25.05		
					(3)	0.55		200	3190	131		100	100		100
Fire hose defective	-				Server	-10.00	100								10
Unclassified steam leaks	8		8	238	1	4		2 X + 1	1171	-9-1	. 21.		1	1	
Number of defects	24	6	141	2,416	7	28	11	2	11	3	1	14	3	3	4
Locomotives owned	10 14	3	52 124	045 765	B. 3	17	4 5	I	3	3	1	4 3	1	1	1
Locomotives defective	11	4	70	555	2	- 11		1	4	1	1	3	1	1	1
Locomotives ordered from service	1	U	0	66	0	1	10.	(1)			0	1		0	

Number of locomotives reported with this defect.
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Defects.	Waterloo, C. Falls	Waukegan & Miss. Val.	Waupaca - Green Bay.	Wayeross &	Waycross West- ern.	Waynesburg & Wash.	Weatherford, M. W. & NW.	Wellington & Powellsv.	Western Alle-gheny.	Western Mary- land.	Western Pacific.	West Virginia &	West Va. Mid- land.	West Va. North-	Wharton & North-
Stay bolts broken		5	4	14.24			1	1	3	93	398	1314	Yell		
Rigid bolts leaking ¹										5	16			1357	
Flexible holts leaking 1	2000	1314	350		4 4 9 9	100		9	20.00	1 4	21				24
l'elltales closed 1	****		1	2	****	2	1	1	****	39	66	PIAT	133	133.1	1 -
stay holts not drilled a		100								18	8	1			
telitales closed cellitales stopped up ¹ Stay bolts not drilled ² Trown sheet leaking Other sheets leaking Trebox sheets bulged Thes leaking ¹ Thes placed	14.5	19.0	1	12.0	1	10.14	20.63		1	2	5	200	43.4	601	100
ther sheets leaking		4444	1	4.5.5	4254	44-4	12.74	1	1	21	32 14	i	23.93	499.6	1.0
Trebox sheets bulged			***		1		****	****	1	10	25	1	2515	100	1
Ines leaking 1 Ines plugged reh flues leaking 1 reh plugs leaking 1 visible plug leaking larrel leaking hroat sheet leaking flud ring leaking low-off cock leaking shout plugs leaking afety valve missing afety valve stuck afety valve leaking age location improper age incorrect		1111	1100	1001	5			6	4	3	55	1000	1000	1001	
rch flues leaking !	****						5,50,7								
rch plugs leaking 1								****	12.60				¥	1.00	
usible plug leaking	****	1				-0.17		9.0	444.0	5	7		1	200	1
ome leaking	77.07				1111			20.00	1777	8	i	200			
hroat sheet leaking			2	i	1					er.	1	. 5.55	715.0	21.55	
fud ring leaking			2	1000		1	200	1000	2	10	16			20.00	
low-off cock leaking	****	+ 2 - 2	25.00	1510	1	1611	4.55		1	18	31 13	1	STOR	1191	U
ashout plugs leaking	F 1 4 4		. * * *	****	1	1515		****	1	10	10	57.50	2		L.
afety valve stuck		1					1000		2222	22.04	1			V. 373	
afety valve leaking			- V.V	. 8 . 1	.2.2	2		42.4		4	111211	1-11	4.11		2
age location improper				4455	14.19			,		0	45		0.00	1971	- 3
age incorrect		1000		***			***		1111	3			(1294	
age incorrects phon wrongly applied phon leaking age cocks wrongly located age cocks stopped up age cocks inoperative	2	THE R	1855	1	1000	1	1	1	2	5	2		6		1
phon leaking						1	1			24	10				
age cocks wrongly located			14.00								12	50.00			
age cocks stopped up	4 2 2 X	124.5	1015		-219	-8-8	4 X Ex	22.2	-3.69	1	8 24	414.99	2,650		-
age cocks inoperative	7.73.0	1,171	4.000	100		1101	1	100		30	16	7150	1		-
age cocks blowing age-cock handle defective age-cock drip defectiverip pipe missing	2			13.7	100	1111	1.5.			400	2	1332	200	1000	
age-cock drip defective	2004		1.00				1	7075	* * * *		3		4.774		3
rip pipe missing	1157	44.4	5177	222		12.2		200	. 2	12.47	8	4737			-
ipples defective or missing, ater glass missing ater glass stopped up.	3.436.4		4.40×Y	0.50	2	1517	-×+×	3	12-4	40	-33	9	3	1	3
ater class stopped up	2.75	2000	E 00.2	2227					100	2	11250		- 2		
ater-glass cocks defective	2166	See	44.10		-350					1	20			24.24	
ater-glass cocks defective. ater-glass cock handle defective. ater-glass blow-off cock defective. ater-glass tube broken.	1000		100		1000		. 13			1		000			
ater-glass blow-off cock defective.	3000	1988	1		100,000	2	2	40.00	1111	5	29		100		
amp missing	1711	1157		- 2	715,60	424.6	2001		. 8 . 1		1				
ater-glass shield missing	6		200	14.72	5 10 10 2	1		-x-x		3	4				
ater-glass shield missingater-glass shield defective	2-75	THER	1	1906	2 (11)	11:		-55 Y	2	2121	1	1111	49.86	40.00	
ater glass improperly located	2.93	1100	1222	1272	1221	4		150		21	1	9	3		
ater-glass shield defective			13							21	1	-	.0		
jector inoperative	2000		1000								3				
lector tends valve defective			.vv-	1						1.4.01	1				
jector tank hose defectivejector feed pipe defective	5255	5.5	5.5.4	5-10	27.5		1	1808	1	-×-×	2	- 1 -	1711		
Jector throttle defective	3-X-	***	X-X-			XXIII		1 - X	9	19	21	+ + 118	Th X :		
lector steam pipe defective	1441	1101	1210	1115	1			1	Ĩ	9	10	3			
lector throftle defective, lector steam pipe defective, lector delivery pipe defective, lector boiler check defective, b card missing,	200	1000								-3	-3:	2	000		
jector boiler check defective	137	200		2000	000			-150	1	10	28			1000	
b card missingdge plate missing	ti-		4	10	1	4			2	22	10	1 2	4		
re-box plug not secured		1115	1							**	23				
ater-glass drip missing	× + × +			(-0)							4	1241			
ater-glass drip defective ater-glass drip wrongly located	9+41	1222									13		-1-1		
ater-glass drip wrongly located age-cock drip improperly located	1014														
re-box sheets corroded	200			2	L						.,				
re hose defective										Civ					
nclassified steam leaks		2		-2	2	-3			10	70	183	2	13 10	1	
Number of defects	25	8	19	15	22	18	8	33	37	522	1,264	17	20	3.	
comotives owned	- 6	2	2	5	2	-tv	3	4	řī.	182	115	12	15.	3.	
comotives inspected	- 10	1	1	-8:	A	15	7	T	8	2391	251	7	17	1	
comotives defective	6	1	1	- 39	19	5	1	v.	3	155	210	2	-10	- 1	
comotives ordered from service	41		()	()	10	(1)	11	1)	3	1	-30	()	1	()	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect. Also includes stay bolts not properly drilled.

Defects.	Wheeling & Lake Erie,	Wheeling Terminal	White Deer & Loganton.	White Deer Lum- ber Co.	White Oak.	Wichita Falls &	Wichita Valley.	Wiggins Ferry.	Williams, H. D.,	Williamsp. & N. Branch.	Winifrede.	Winston-Salem S. Bound.	Wiscasset, Wa- terv. & F.	Wise Terminal,	Woodstock.
Stay bolts broken	121	11				13	5	2		2	4	1			
Rigid bolts leaking 1	1					3				Sec			6840		
Felltales closed 1	26	1		1000		****	2	****	****	100	***			1111	100
relitales stopped up 1	7	1	1			7	3	5			100	200	1		
Stay bolts not drilled a	3		2	2						2					
Other sheets leaking	8		44.	****		2		5		12			****	****	64)
Felitales closed ¹ Felitales stopped up ¹ Stay bolts not drilled ² Trown sheet leaking The sheet leaking Firebox sheets bulged Flues leaking ¹ Flues plugged Arch flues leaking ¹ Arch plugs leaking ¹ Arch plugs leaking ¹	3						2								177
flues leaking 1	6	Cres			1	1									
Arch fines leaking !	27	+	40,85			9			****		2				10
reh plugs leaking 1			1111	500	1111	1333	1111	****	****	2000	****	****	1111	****	100
Fusible plug leaking					****									127	1
rustole plug leaking. Barrel leaking. Dome leaking. Fhroat sheet leaking. Mud ring leaking. Blow-off cock leaking. Washout plugs leaking i safety valve missing. safety valve stuck. safety valve leaking. Bage location improper. Bage incorrect.	4	1,500				1000			***		8.94	0.00			
broat sheet leaking	3	***	-0.00		****	9	***	2	****	64-5	->	****	***	****	
fud ring leaking	16	12.2				4		****					111		lia.
Blow-off cock leaking	8				1	5	1								100
vasnout plugs leaking 1	19				****	3	er.	2		1311		200	****		
afety valve stuck			. 5		****	1535	***		- 2	****	****	****	****	****	**
afety valve leaking	6						1								
lage location improper						dis.				43.5			4552		
rage incorrect		111	***					· · · ·							10
iphon wrongly applied			1		1	1000	6	î	1	2	1	1000	1000	i	10
iphon leaking	3					1		2							
age cocks wrongly located														***	18
age cocks inoperative	1	****		275	1013	6	3	***	****	****		1	- 17	1	400
lage cocks blowing	14	1	55.5	3		1						î	6		100
lage-cock handle defective		****		1										1	10
rage-cock drip delective		****			****			::*:	:::9	1917		1000	17.58	****	
lipples defective or missing			5556	1111						***	****	****		****	13
Vater glass missing	*****									2	1		3		13
Vater glass stopped up		1000	,	****						43.44		40.0			
Vater-glass cock handle defective	1	4	1	2	****	0		2							44
Vater-glass blow-off cock defective.	6			1		1	1				200	3			20
Vater-glass tube broken				+											9.63
Vater glass chiefd missing		****	****	****						****					
Vater-glass shield defective								***	3		***	1			70
vater glass improperly located															1
ubricator shields missing	22	2		3	2		2	4	1	3	3			2	-14
alety valve leaking age location improper age incorrect. vial-glass missing phon wrongly applied iphon leaking age cocks wrongly located age cocks wrongly located age cocks stopped up age cocks holving age-cock handle defective age-cock drip defective rip pipe missing ipples defective or missing vater glass missing vater glass stopped up vater-glass cocks defective vater-glass cocks defective vater-glass blow-off cock defective vater-glass stop broken amp missing vater-glass shield defective vater-glass shield missing vater-glass shield missing vater-glass improperly located ubricator shields missing ubricator shields defective elector tank valve defective elector tank valve defective elector tank hose defective elector tenk valve defective	1	****		****		1				1		13.11	****	****	
jector tank valve defective															100
elector tank hose defective	12														6
jector feed pipe defective	16		••••		101	2	****	****		****			***	****	4.0
jector steam pipe defective	2				7.1	1	MI			200	m	î	2001	1	15
dector delivery pipe defective	4	2				1	1.41								7.7
ljector boiler check defective	1 0					1						****			
adge plate missing.	16	100	2	2	1		2	4	****	3		'i'	2	****	**
alector tank valve defective alector tank hose defective alector feed pipe defective alector throttle defective alector tand pipe defective alector delivery pipe defective alector delivery pipe defective alector boiler check defective alector missing adge plate missing ire-box plug not secured ater-glass drip missing ater-glass drip defective ater-glass drip defective ater-glass drip worstyl located		1257					4								
ater-glass drip missing						1			1045	-111					
ater-glass drip delective	*****		100				****							70.70	44
age-cock drip improperly located	*****		300	1										1000	200
ire-box sheets corroded					a.	200			****						
ire hose defective	71	4	4	3		20	2	3		i'i'	2	2	2	2	1
Number of defects	466	25	13	23	6	92	39	35	7	18	14	12	14	8	-
ocomotives owned	199	- 6	2	2	2	21	16	23	=	5	3.	6.	7	1	-
ocomotives inspected	286	11	2 2	3	3	28	16	10	3		3	9 7	4.	3	
ocomotives defective	155	- 8-	2	-3	- 28	20	10	- 8	3	-	3	- 7	4	3	

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Also includes stay bolts not properly drilled.

Defects.	Woodville.	Woodworth & La. Cent.	Wrightsv. & Tennille.	Wyandotte & SE.	Wyoming & N. W.	Yazoo & Miss. Valley.	Yosemite Valley.	Youngstown & Ohio Riv.	Yreka.	Zanesville & Western.	Zwolle & Eastern.	Total defects.
tay bolts broken			1		E	7				1		31,1
igid bolts leaking 1				4000					******	1	25.7.1.	1,8
lexible bolts leaking 1				****			*****	****	****		*****	1,8
elltales closed 1		1111				9	3			111111		7,7
ay bolts not drilled 2			***				+2+2+0	*3.43.65	000	*****	*****	1,3
ther sheets leaking			****	****		Y	111111		214141		*****	4,
re-box sheets bulged					1		2		3		error.	1,
nes leaking 1	****	1750	27.77	2270	1					1	2.5.5.	2, 6,
own sneet leaking her sheets leaking re-box sheets bulged nos leaking ' ues pingged ch flues leaking '		****			110				1			
												1.5
sible plug leaking	4643	9445	-744			2211	1277.0	******	******	2	105500	1.
urel leaking me leaking iroat sheet leaking			C	L			*****	13.43.45	21,557,	3		1,
roat sheet leaking	****		****		Y 0 Y 0	****	****		*****	7.35	*****	2.
od ring leaking ow-off cock leaking ashout plugs leaking 1 fety valve missing			****	****	1000	2				1	4,98,00	2,
ashout plugs leaking 1		12.48				1	*****		****	2		4,
lety valve stuck	4840	10000	4.121	48.00	Jaren	10000	****	SERVICE SERVICE	S. A. V. S. S.	1000000	****	
fety valve leakingge location improper		1223	lan	las.	1000	2040	*****	F15-1-		1	******	
ge location improperge incorrect		****			***	1940	1000000	200000	*****			
al glass missing			1100		100	1	*****		2-5354	to date	LILLIA	1,
ohon wrongly applied	4843	11	9.819	1511	40.00	20	1	****		3	*****	2,
ge cocks wrongly located			100	22.0	1	43.51	*****	*****	****			
ge cocks stopped up	17.51	1	22-1	22.4	144	2	STREET,	*****	1	17030	*****	1,
ge cocks inoperative		2101	2	200	10.20	8	22.002.	212121		3	******	6,
ge-cock handle defective	1	44.0		1			25.95.24	45.4.4.4.4	2.21.	417.00		
ge-cock drip defective	1555	1919	155	1	277	1		****	1	12-1-7		1.
pples defective or missing					4.0			****				2.0
ater glass missing	1	1000	2	14.64	6+35		BISTAT	318777			1	3.2,
sge incorrect al glass missing, bloom wrongly applied bloom wrongly applied bloom wrongly located sge cocks wrongly located sge cocks stopped up sge cocks inoperative sge cocks inoperative sge cocks blowing sge-cock drip defective sge-cock drip defective dip pipe missing lippies defective or missing ater glass missing ater glass stopped up ater-glass cock defective ater-glass cock defective ater-glass blow-off cock defective ater-glass blow-off cock defective ater-glass towe broken		24.00	1207	20.0	11.00	Co. Yo		2.70	3.079.0	6	******	1,
ater-glass cock handle defective	1000	1	100.00		24	1111	10-2-2-	****	7-0-0-1	4-1-5	*****	3.
ater-glass tube broken	200				L				222.00	10000		
mp missing		1191			100					200121	1,157.45	1.
ater-glass shield missing,	1	1	W. C V.	1	Ţ	10	*****		*****			3,
ater glass improperly located					1				-	diam'r.		- 2
ater-glass tube broken inp missing ater-glass shield defective ater-glass shield defective ater glass improperly located bricator shields missing bricator shields defective ector inoperative ector inoperative ector tank valve defective	1111	1	2011	1	1000	7	417101	3.474.7.1	2	5	1	5, 1,
ector inoperative	0000		1000			2	217.54	20000	24.0-1	1		
ector tank valve defective				. 1			100000	14,697.43	SERVE	*****	-SYT-	1,
ector feed pipe defective.	Stee					1800		******		i	212222	1,
ector inoperative ector tank valve defective ector tank hose defective ector feed pipe defective ector throttle defective ector steam pipe defective ector delivery pipe defective ector delivery pipe defective	2.00	200		314	3.51	1.72				2		4,
ector steam pipe delective	4-2-	***			***	12	1	X = + 2 = 4	*****	2	517775	1,
												1,
b card missingdge plate missing	1	-	-	1	2.50	10	223,614	3	-7110	7	14747	6.
te-boy alog not secured	1						- 3				Jan Brake	2,
ster-glass drip missing	10000			1	357	5		100.00	58.50	A2-52	(114141)	1,
ater-glass drip defective ater-glass drip wrongly located ge-cock drip improperly located re-box sheets corroded		958		40	A SET	1	*1.**	*****		Control of	JOHNSON	
age-cock drip improperly located	100	20		100		drive	41 -1 -1		*****	****		
re-box sheets corrodedre hose defective		1111	YIL	122	W 10 to	Line	1000	-27.51	****			
oclassified steam leaks	100				1 N. C. T.	6	114343		4	23.	40 X - X - I	25,
Number of defects	-	5	5	-	-	123	10	- 3	13		2	173,
comotives owned	1		10	1		106	5	-3	2	21	3	62:
ecomotives inspected	1	1	3	1	-1	90	4	5	2	34	1	74.
ocomotives defective	T	1		1	3	58	3	3 0	20		0	48,

Number of locomotives reported with this defect.
 Number of locomotives reported with this defect.
 Under the boiler-inspection law all locomotives were required to be equipped with water glasses before uly 1, 1912.

In the preceding tables the number of locomotives owned has been omitted in a number of cases where the railroad is part of a system; in these instances the number is given under the system with which the road is identified, as follows:

Belt Raiway of Chicago, included in Chicago & Western Indiana. Cleveland, Akron & Cincinnati, included in Pennsylvania lines west of Pittsburgh. Colorado Springs & Cripple Creek District, included in Florence & Cripple Creek. Dardanelle, Ola & Southern, included in Rock Island & Dardanelle. Dunkirk, Allegheny Valley & Pittsburgh, included in Lake Shore & Michigan Southern. Evansville & Terre Haute, included in Chicago & Eastern Illinois. Iowa Central, included in Minneapolis & St. Louis. Northern Central and Philadelphia, Baltimore & Washington, included in Pennsylvania Railroad. Raleigh & Southport, included in Raleigh, Charlotte & Southern. St. Louis, Iron Mountain & Southern, included in Missouri Pacific System. Tombigbee Valley, included in Alabama, Tennessee & Northern.

Ordered out of service. - In addition to those shown in the preceding tabulation, there were other locomotives ordered out of service on certain roads upon which no Government inspection had been made, they having been ordered out of service through the office of the chief inspector from information shown on inspection reports filed by the railroads.—These are as follows: Adirondack & St. Lawrence R. R. Co., 3 owned, 1 ordered out of service. Allegheny & South Side Ry. Co., 3 owned, 1 ordered out of service. Arkansas, Oklahoma & Western R. R. Co., 1 ordered out of service. Buckeye Steel Casting Co., 1 ordered out of service. Chicago, Minneapolis & St. Louis R. R. Co., 1 ordered out of service. Detroit Union R. R. Depot & Station Co., 1 ordered out of service. Durham & Charlotte R. R. Co., 4 owned, 2 ordered out of service. Fore River R. R., 3 owned, 1 ordered out of service. Grafton & Upton R. R. Co., 3 owned, 1 ordered out of service. National Lumber Co., 2 ordered out of service Peoria & Eastern Ry. Co., 77 owned, 1 ordered out of service. Pittsburg & Moon Run R. R. Co., 1 ordered out of service. San Benito & Rio Grande R. R. Co., 1 ordered out of service. Sandy Valley & Elk Horn R. R. Co., 1 ordered out of service.

No defects.—In a number of instances locomotive boilers owned by certain companies were examined and found to be without defects. These companies are not listed in the preceding tables, but are given below, with the number of locomotives owned and inspected.

Alicia Mines, 1 inspected. Ashland & Western Ry. Co., 3 owned, 2 inspected. Carnegie Steel Co., 9 owned, 10 inspected. Hampshire Southern R. R. Co., 3 owned, 1 inspected. La Salle & Bureau County

R. R. Co., 1 owned, 1 inspected. Lima Locomotive Works, 1 owned, 17 inspected. Mountain Central Ry., 5 owned, 4 inspected. Northern Pacific Terminal Co., 11 owned, 7 inspected. Owasco River Ry., 4 owned, 7 inspected. Pascagoula Northern R. R. Co., 4 owned, 2 inspected. Rio Grande & Eagle Pass Ry. Co., 4 owned, 6 inspected. Sardis & Delta R. R. Co., 1 owned, 1 inspected. Scott Lumber Co., 1 inspected. South Manchester R. R. Co., 2 owned, 2 inspected. Tuskegee R. R. Co., 2 owned, 1 inspected. Washington Terminal Co., 10 owned, 3 inspected.

PLATES ILLUSTRATING LOCOMOTIVE BOILER EXPLOSIONS.

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EXPLOSION DUE TO DEFECTIVE DOME. (See Plate I.)

Radial stay boiler. Working steam pressure 145 pounds per square inch. The third course of barrel, on which was located the dome, ruptured and was blown entirely away from the boiler. An examination, after the accident occurred, showed that a crack had opened at the base of the whistle boss on the cast-iron dome cap, and this crack had extended into a flaw in the interior of the casting, thus weakening the cap to such an extent that failure took place, resulting in the rupture of the third course of the barrel.

PLATE I.—Explosion due to defective dome.

EXPLOSION DUE TO DEFECTIVE BRACING OF CROWN SHEET. (See Plate II.)

Crown bar boiler. Working pressure 160 pounds per square inch. Twelve crown bar braces were defective on account of seven pins missing; four pins broken and one brace broken. Scale was found in the crowfoot holes, where pins should have been, showing that pins had been out for some time. Boiler was blown 222 feet by the explosion.

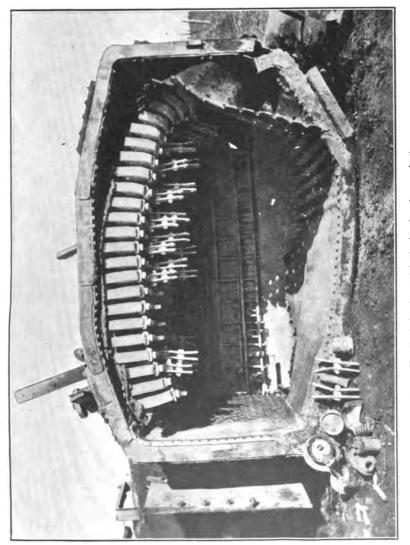
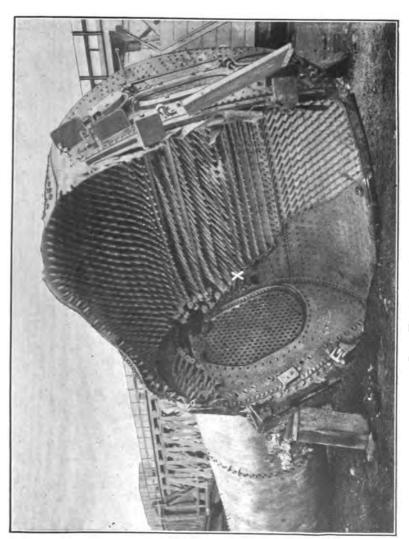


PLATE II.-Explosion due to defective bracing of crown sheet.

EXPLOSION DUE TO LOW WATER. (See Plate III.)

Wooten boiler. Working pressure 180 pounds per square inch. At time of explosion the level of the water was 3½ inches below the highest part of the crown sheet. About 10 months prior to this accident the crown sheet had been overheated on account of low water and the boiler was repaired by renewing a number of radial stays.



63667—12——7

EXPLOSION DUE TO DEFECTIVE BARREL. (See Plate IV.)

Crown bar boiler. Built 1887. Working steam pressure 165 pounds per square inch. In May, 1905, a patch, three-eighths inch thick, 48 inches wide and 118 inches long, was applied to the belly of the boiler. This patch covered the lower portion of three courses of the barrel. Practically the entire barrel was torn from the boiler. The explosion was so violent that a driving-wheel axle was broken and a barrel sheet about 12 by 14 feet, weighing approximately 2,600 pounds, was blown about 1,200 feet from the scene of the explosion. An examination of the large patch indicated that the sheet ruptured along the seam on right side of boiler and also through the line of rivet holes in front flue sheet. The large patch was found to be pitted in a large number of places and grooved along edge of longitudinal seam. The plate was also found to be very brittle.

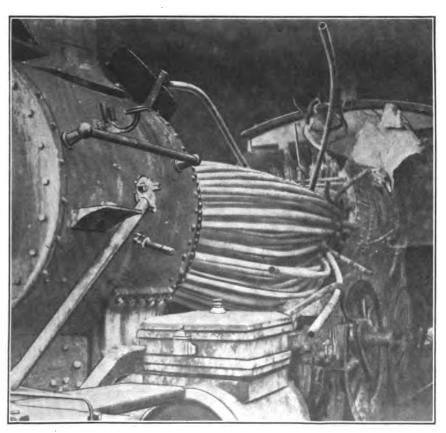
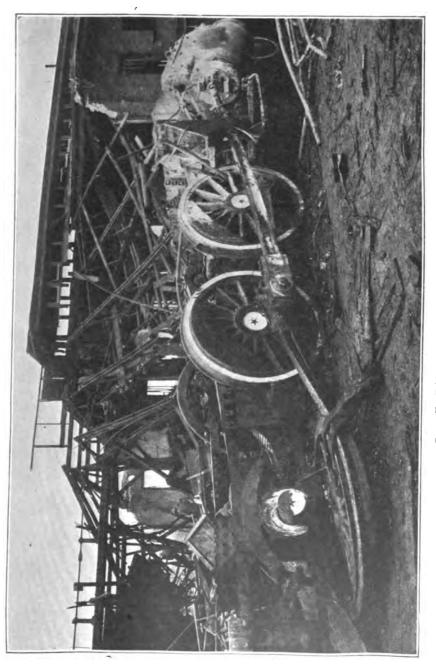


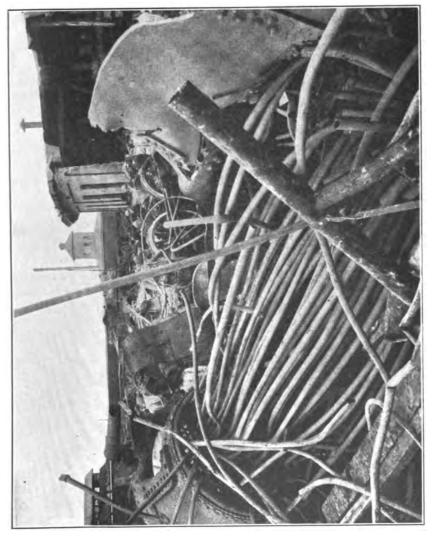
PLATE IV .- Explosion due to defective barrel.

EXPLOSION DUE TO EXCESSIVE PRESSURE. (See Plates V and VI.)

Working steam pressure, 200 pounds per square inch. Crown sheet supported by T bars. Oil used for fuel. Locomotive had just received heavy repairs and steam pressure was being raised preparatory to putting locomotive into service. An employee of the railroad company was engaged in setting the safety valves at the time of the explosion. An examination of the safety valves indicated that the adjusting screws had been screwed down more than five-eighths of an inch, which allowed a steam pressure to accumulate. It is probable that the steam gauge did not indicate the correct pressure. The explosion completely destroyed the locomotive and badly damaged the surrounding buildings. One part of the boiler, weighing about 16,000 pounds, was blown a distance of about 1,200 feet. Another part, weighing about 900 pounds, was blown a distance of about 2,250 feet. Tests made of various parts of the boiler indicated that the steam pressure at the time of explosion must have been greatly in excess of the working pressure.



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EXPLOSION DUE TO LOW WATER. (See Plates VII and VIII.)

Radial stay boiler. Steam pressure, 225 pounds to the square inch. The water-glass cocks were shut off just before accident occurred to enable a machinist to repair the water glass. The upper water-glass cock was probably left closed after the repairs were made, as it was found closed immediately after accident occurred. The closing of this cock would cause a false indication of the water level.

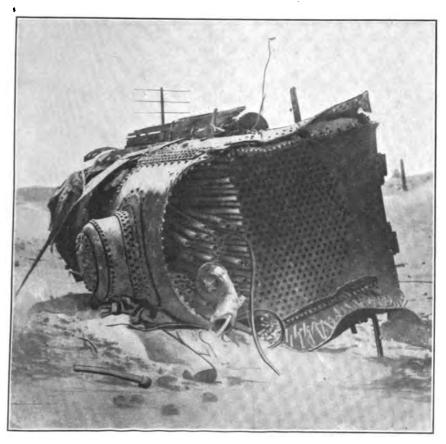


PLATE VII.-Explosion due to low water.



PLATE VIII. - Explosion due to low water.

EXPLOSION DUE TO EXCESSIVE PRESSURE AND DEFECTIVE BARREL. (See Plate IX.)

(Section)

Radial stay boiler. Working steam pressure, 165 pounds per square inch. Boiler built in 1887. The plate which failed was applied in 1905 and was three-eighths inch thick. Circumferential seams were single-riveted lap joints. Longitudinal seams were double-riveted lap joints. Locomotive was equipped with two old-style Richardson open-spring safety valves. On day prior to explosion the steam gauge siphon pipe was reported leaking and the safety valves blowing at a pressure exceeding the working pressure. At the time of accident an employee was engaged in setting the safety valves. After the accident occurred the safety valves were tested up to 300 pounds pressure per square inch, but the valves failed to open. The first and second courses of the barrel were ruptured and blown away. An examination of the longitudinal seams of the first course showed that there was an old crack 40 inches long at the edge of seam. The crack was five-sixteenths inch deep for 8 inches and from one-eighth to three-sixteenths inch deep for 32 inches. The explosion was so violent that the front axle of the locomotive was broken.

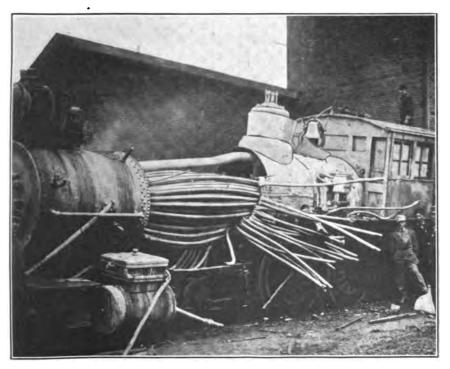
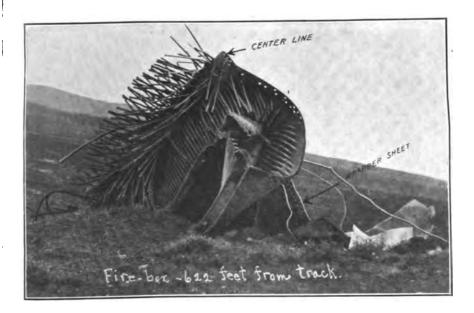
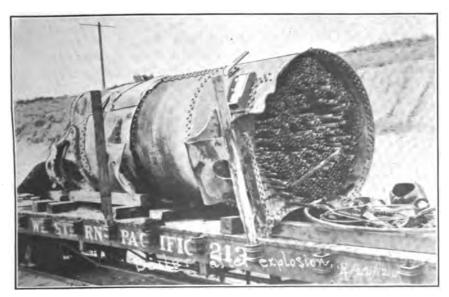


PLATE IX.—Explosion due to excessive pressure and defective barrel.

EXPLOSION CAUSED BY OVERHEATING OF FIREBOX SIDE SHEETS, DUE TO FOAMING OF WATER. (See Plates X and XI.)

Radial stay boiler. Working steam pressure, 200 pounds per square inch. Safety valves were set without testing steam gauge. Firebox was torn from barrel and the larger part of box was thrown 622 feet from the track. Barrel of boiler was blown 280 feet from point of explosion. Firebox right-side sheet was so hot that it set fire to sage brush after having been blown 150 feet. The water in the boiler was analyzed and pronounced unfit for boiler purposes owing to the large amount of solids.





PLATES X and XI.-Explosion caused by overheating firebox side sheets, due to foaming water.

EXPLOSION DUE TO DEFECTIVE BARREL. (See Plate XII.)

Narrow firebox, radial stay boiler. Diameter of boiler, 52 inches. Working steam pressure, 120 pounds per square inch. Locomotive was equipped with two 2½-inch old-style Richardson open-spring safety valves. An interior inspection had not been made for seven years. The second course of barrel was ruptured. The upper half of the sheet with the dome was blown 1,000 feet from point of explosion. This sheet was seven-sixteenths inch thick and was badly pitted. The longitudinal seams on either side were double-riveted lap joints. This sheet was cracked at the edge of the longitudinal seams on both right and left side, almost through the sheet. The depth of crack varied from one-fourth to three-eighths inch deep. The sheet was also badly cracked at circumferential seam between the first and second courses.

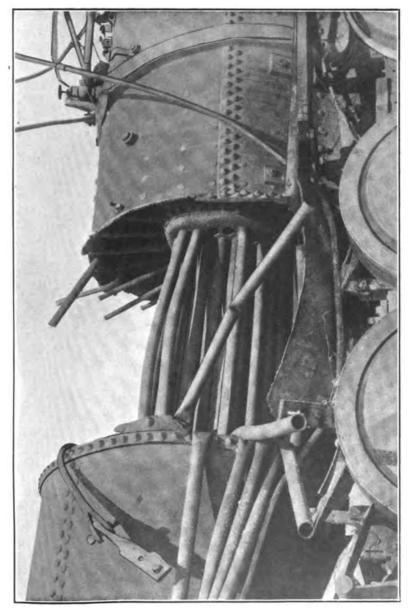


PLATE XII.—Explosion due to defective barrel.

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