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EXPLOSION AT CONSOLIDATED SCHOOL NEW LONDON, TEX.

REPORT

ON

INVESTIGATION OF EXPLOSION AT CONSOLIDATED SCHOOL, NEW LONDON, TEX.

MARCH 18, 1937

PRESENTED BY MR. CONNALLY

APRIL 19, 1937.—Ordered to be printed with illustrations

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1937

Prepared by

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U. S. Department of Agriculture
Washington, D. C.

Date of preparation.—April 1, 1937

LETTER OF TRANSMITTAL

DEPARTMENT OF AGRICULTURE,
Washington, D. C., April 14, 1937.

Hon. TOM CONNALLY,
United States Senate.

DEAR SENATOR CONNALLY: In accordance with your request I take pleasure in enclosing a copy of the final report of Dr. David J. Price, principal engineer, in charge of the Chemical Engineering Research Division of the Bureau of Chemistry and Soils, on the explosion at the consolidated school at New London, Tex., March 18, 1937. A copy of this report is being forwarded to Governor Allred today.

Sincerely,

H. A. WALLACE, *Secretary.*

EXPLOSION AT CONSOLIDATED SCHOOL, NEW LONDON, TEX.

INTRODUCTION

On Thursday, March 18, 1937, about 3:10 p. m., an explosion of violent proportions occurred in the Consolidated School Building at New London, Tex. At the time of the preparation of this report estimates available indicated that 456 boys and girls, ranging from the fifth grade to high-school age, were either instantly killed or died from the effects of injuries received in the explosion. Reports available from school officials, however, seem to indicate that owing to possible duplication in reports, the death loss may not be as high as originally reported.

DESCRIPTION OF SCHOOL BUILDING

The Consolidated School of the district was located at New London, and many of the school pupils were brought in busses from the various points in the district. It has been estimated that more than 700 pupils were in the building at the time of the explosion.

The school building was of brick and steel construction with the auditorium in the center and the high-school rooms on the north end of the building, while the grade-school rooms occupied the south end. The main building extended from north to south for a total distance of 254 feet with two wings at each end about 136 feet in length. Although most of the class recitation rooms and offices, as well as the auditorium, were on the upper or what was commonly known as the first floor, there were also classrooms on the lower or basement floor on the east side of the building at the end of both wings.

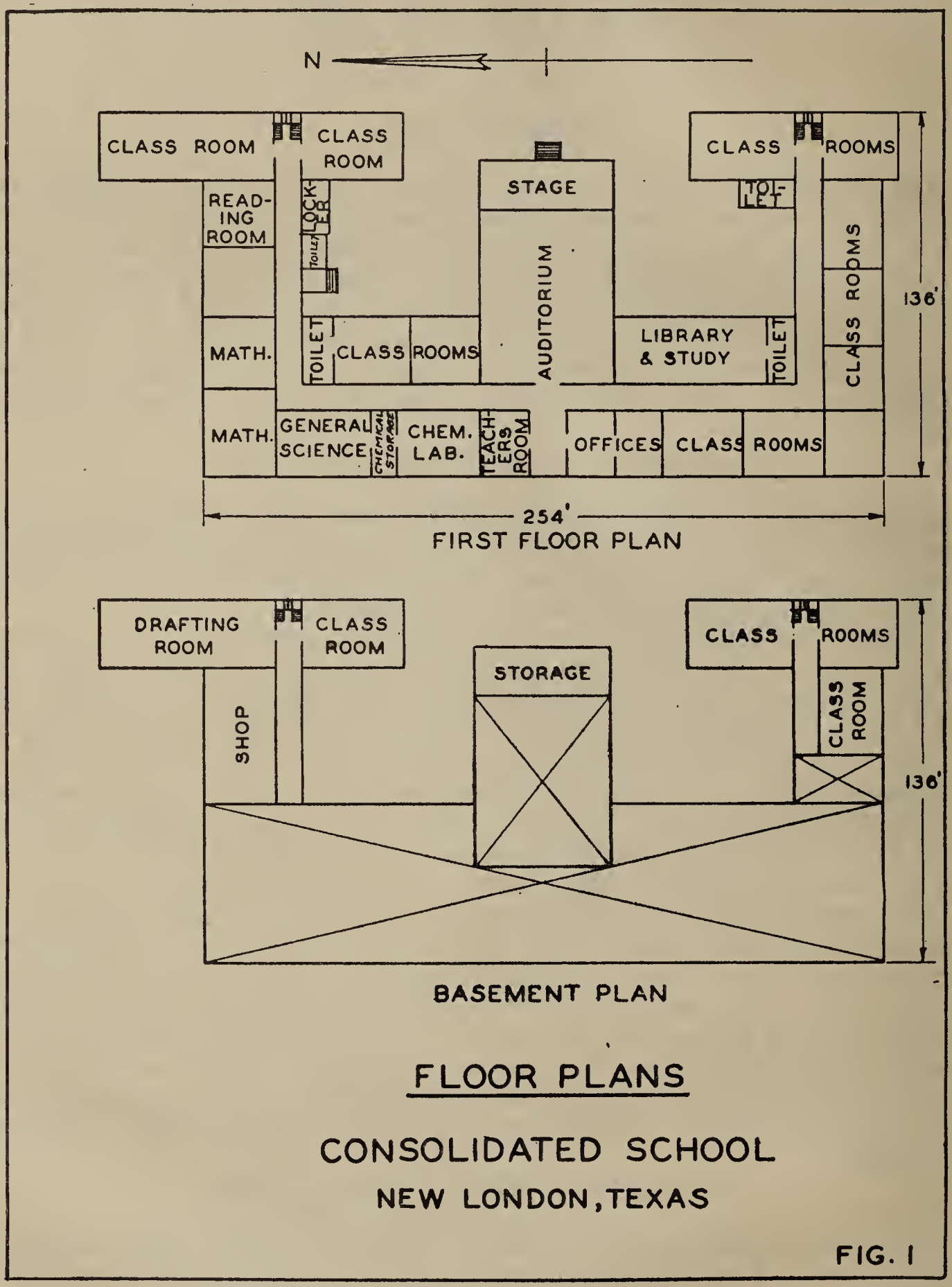
The space on the lower floor on the west side of the building and directly underneath the rooms on the floor above was practically unoccupied "dead" space, used principally for storage. The volume of this space as nearly as can be determined was approximately 65,000 cubic feet and apparently the space was not needed for actual occupancy when the building was erected. Figure 1 shows the first floor and basement plans of the school building, and figure 2 is a plot plan showing the relative position of the New London School district buildings.

DESCRIPTION OF HEATING SYSTEM

The school building was heated by individual gas steam radiators and the gas for heating was obtained from a nearby residue gas-pipe line owned by one of the oil companies. By using this residue gas the New London District School Board was utilizing for heating purposes a product which otherwise would have been burned in the "flares" as waste gas. It has been estimated that approximately $300 per month was saved by the use of this residue gas for heating.

The manufacturer of the "Gasteam" radiators in describing the operating principle of the equipment states:

The radiators are constructed of cast iron. The sections are fitted together with slip nipples and held firmly in place with tie rods. The upper part of the sections forms the radiating surface. Directly beneath the radiating surface is



the water chamber which holds a body of water 1 inch deep. The combustion chamber located below the water chamber is an integral part of the radiator sections and encloses a gas burner. The sections at the combustion chamber are lap jointed, entirely enclosing the gas flame.

In discussing the advantages of unit operation of "Gasteam" radiators the manufacturer further states:

View showing west side of consolidated school at New London, Tex. Auditorium in center, graded school on right, high school on left.

East side of consolidated school at New London, Tex. Classrooms of graded school on left, auditorium in center, high school on right.

View of graded school and auditorium after explosion on March 18, 1937; approximately 300 children were killed in this section of the building.

Close-up view of second floor of graded school at southeast corner of building.

Each "Gasteam" radiator can be turned on and off as needed. Nor is it necessary with "Gasteam" to heat every room in a building as with one central boiler. The size of each radiator in a system is determined by maximum weather requirements. When these maximum conditions do not exist the "Gasteam" radiators are simply turned off when enough heat is obtained. In many buildings some rooms must be heated day and night from fall to spring, while other rooms are used only periodically. Sometimes some of the rooms need 70° F. throughout the season, while others need only 50° or 60° F. Whatever the case may be, the great economy and convenience of having heat, always ready, when and where needed, is obvious.

The operation of a "Gasteam" radiator is illustrated in figure 3. The upper portion forms the steam-heating surface; the lower portion forms a water compartment and combustion chamber which encloses the gas burner. A steam-pressure regulator so operates that when the gas is first lighted a maximum volume of gas is burned to generate

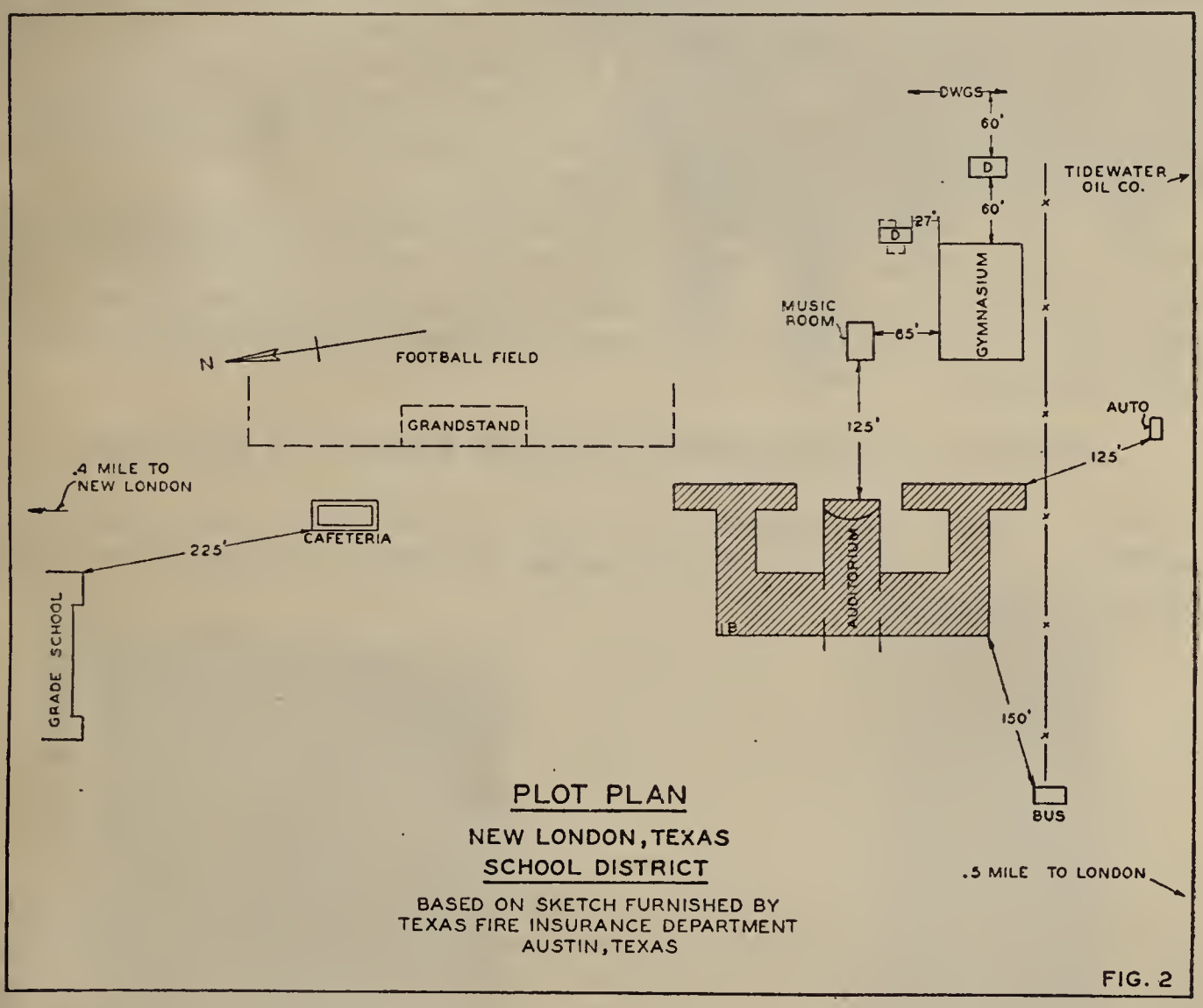


FIG. 2

steam quickly. When 5 to 8 pounds pressure is reached the regulator automatically cuts down the supply of gas to maintain just that pressure. The water chamber need be replenished with water only a few times each season. Each radiator is operated independently by merely turning on and lighting the gas at the radiator.

APPLICATION OF VENTED AND UNVENTED "GASTEAM" RADIATORS

Figure 4 shows a vented "Gasteam" radiator. In discussing the application of vented and unvented "Gasteam" radiators the manufacturing company states:

When gas is burned in any appliance, water vapor is produced.
It is possible for too much humidity to accumulate in the air of a heated room, and for the moisture to condense on windows and exposed walls. This is due to the fact that heated air can hold more moisture than cold air. Heated air coming

in contact with cold windows and walls is cooled. If it contains a high percentage of humidity, when cooled, condensation generally results. When heating with unvented radiators, humidity is added to the air in direct proportion to the heat loss of the rooms heated. The air change that occurs in various amounts in any heated building, carries out with it both heat and moisture. The heat loss from conduction through windows, cold walls, floors, ceilings, etc., takes no moisture along with it as it escapes from the building. Thus the moisture liberated with heat that offsets conduction losses remains in the building. If the air that is leaving the room cannot absorb this additional moisture, the amount of humidity steadily increases until condensation takes place on cold surfaces, such as windows and cold walls.

With vented "Gasteam" radiators the moisture produced by the burning of fuel gas is carried to the outside of the building through vent stacks. When all vented "Gasteam" radiators are used on an installation, there is no humidity from the radiators added to the heated room air, and a very dry condition results.

In addition to the vented radiators carrying off the products of combustion, many engineers feel that they are also desirable and essential to provide a means of escape to outside air of any unconsumed gas that may escape from the burner at the base of the radiator. This precaution is considered essential by the advocates of vented radiator installations to protect against the possible accumulation of gas in the atmosphere of the room.

There were approximately 72 individual gas-heated radiators in the New London school buildings. The radiators in the recitation rooms and other meeting rooms and offices were of the vented types. The radiators in the halls and stairway landings were generally of the unvented type.

CHEMICAL COMPOSITION OF GAS USED FOR HEATING

The chemical composition of the gas used for heating the school building as determined by a consulting chemist on February 15, 1937, was as follows:

	Percent
Methane	56. 43
Ethane	13. 61
Propane	21. 72
Butane	7. 86
Pentanes and heavier	. 38
Total	100. 00

The calculated explosive limits of the gas when mixed with air are: Lower limit 3.4 percent and upper limit about 9 percent. The mixture of greatest explosive violence is approximately 6.5 percent gas and 93.5 percent air. The specific gravity of the gas compared with air as unity is 0.8687.

STORY OF THE EXPLOSION

The explosion occurred about 3:10 p. m., shortly after the classes had begun work in the last period for the day, which commenced about 3 p. m. It has been estimated that of the approximately 398 pupils in the grade or grammar school on the south side of the auditorium about 300 were killed, and that of the approximately 308 pupils in the high school on the north end of the building about 156 lost their lives. These figures are based on the total of 456 estimated dead, and before the final accurate statement of losses was available.

The explosion appeared to be on the lower floor underneath the classrooms on the first floor. The floor was blown upward and many of the pupils were hurled up into the air. The walls collapsed and the

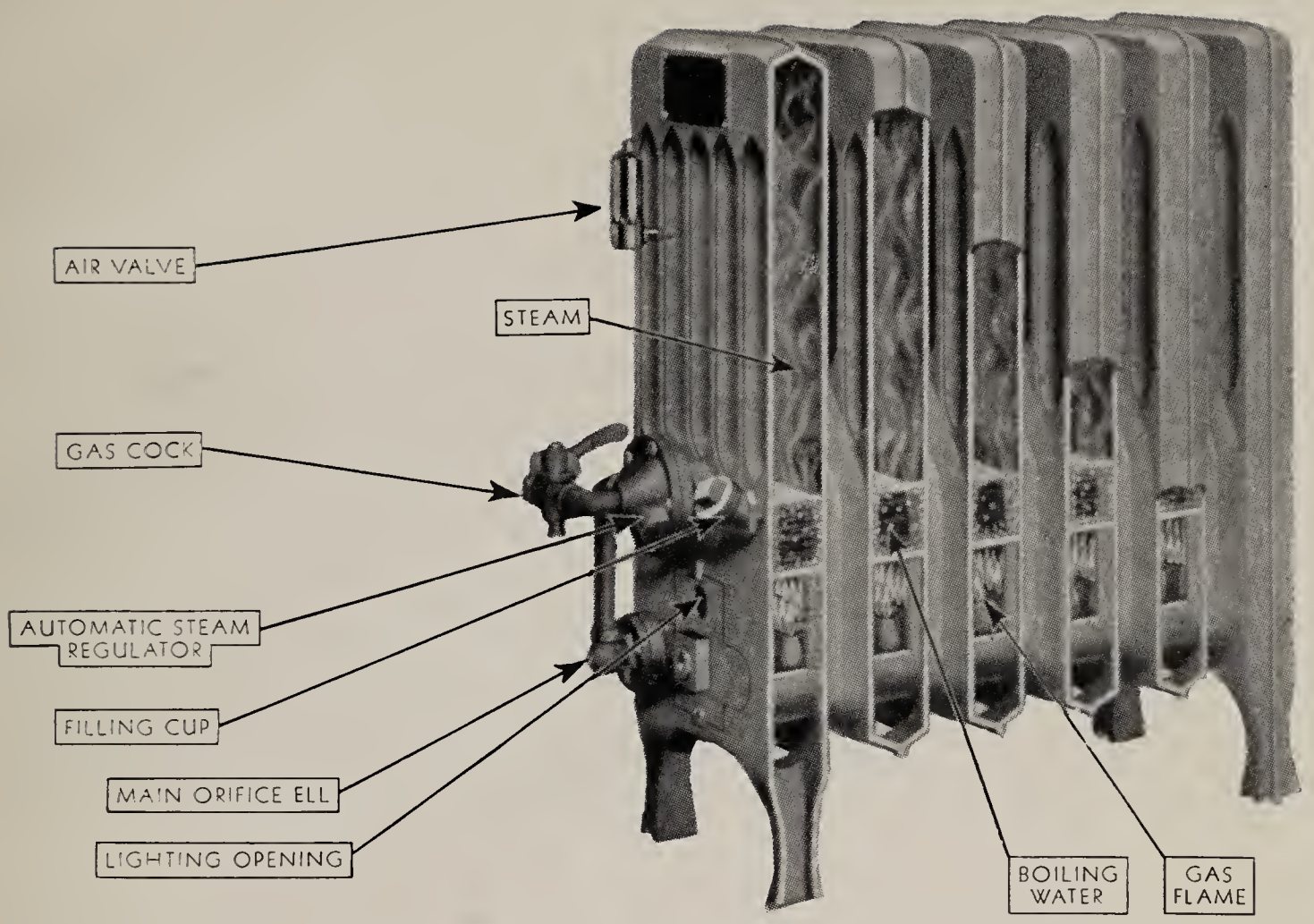


FIGURE 3.—Gasteam radiator.

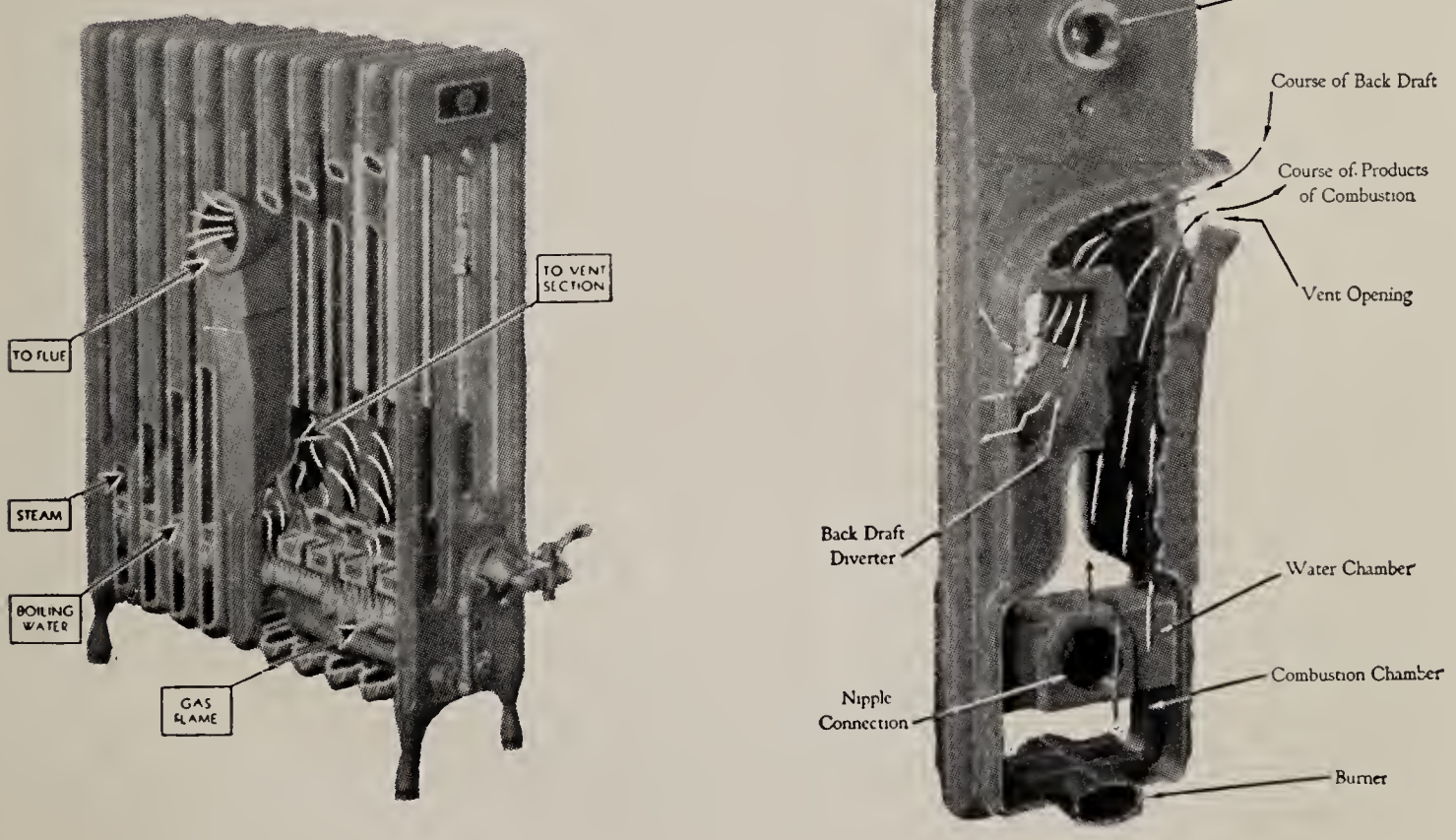


FIGURE 4.—Vented gasteam radiator.

General view approaching school property. Wrecked high-school building on left, auditorium in center, graded school at right. Note oil and gas wells adjoining school property.

View showing damage to auditorium in center and graded school on right. Note near-by oil and gas wells and athletic-field stadium back of auditorium.

roof fell, burying large numbers in the mass of brick, concrete, and steel debris.

There was not much evidence of fire except in the manual training shop on the lower floor on the north end of the building and small fires in the chemical laboratory and chemical storage room on the upper floor caused apparently by the burning of chemicals after the explosion.

The extent of property damage has been estimated to be several hundred thousand dollars. There was approximately $100,000 explosion insurance carried on the building.

BAROMETRIC READINGS

The hourly barometric readings for the period of March 16 to 19, inclusive, as obtained from the United States Weather Bureau at Dallas, Tex., are as follows:

Hourly barometric readings, U. S. Weather Bureau, Dallas, Tex., Mar. 22, 1937

Hour	Mar. 16, 1937	Mar. 17, 1937	Mar. 18, 1937	Mar. 19, 1937
1 a. m.	29.73	29.46	29.28	29.15
2 a. m.	29.73	29.45	29.30	29.15
3 a. m.	29.72	29.43	29.33	29.11
4 a. m.	29.71	29.41	29.36	29.11
5 a. m.	29.70	29.40	29.38	29.09
6 a. m.	29.70	29.39	29.39	29.09
7 a. m.	29.71	29.38	29.40	29.11
8 a. m.	29.71	29.37	29.43	29.14
9 a. m.	29.71	29.37	29.44	29.16
10 a. m.	29.70	29.36	29.45	29.18
11 a. m.	29.69	29.35	29.44	29.17
12 m.	29.67	29.34	29.41	29.16
1 p. m.	29.65	29.30	29.40	29.14
2 p. m.	29.62	29.28	29.37	29.12
3 p. m.	29.60	29.26	29.34	29.11
4 p. m.	29.57	29.23	29.31	29.09
5 p. m.	29.53	29.20	29.28	29.08
6 p. m.	29.51	29.22	29.26	29.08
7 p. m.	29.50	29.27	29.24	29.09
8 p. m.	29.50	29.22	29.24	29.11
9 p. m.	29.50	29.23	29.24	29.14
10 p. m.	29.50	29.24	29.24	29.15
11 p. m.	29.49	29.26	29.22	29.18
12 midnight	29.48	29.27	29.19	29.14

Figure 5 shows the graph of these barometric readings by hours for the 4-day period.

It will be observed that the barometer for Thursday, March 18, was high at 10 a. m. with a reading of 29.45 and that at 3 p. m:, about the time of the explosion, the barometer had dropped to 29.34 and continued to fall for some time later.

The fact that the explosion occurred during a period of falling barometer is important for at least two reasons. In the first place, it may explain how it happened that one of the school employees, entering the open area underneath the floor at the southeast corner about 10 a. m. to remove some stored material, was able to strike several matches at this point without causing an explosion. It is very evident that the gas had not accumulated sufficiently for an explosion at this point up to 10 o'clock in the morning of the day the explosion occurred. It is important to note that this workman entered this area at the time the barometer was high for the day.

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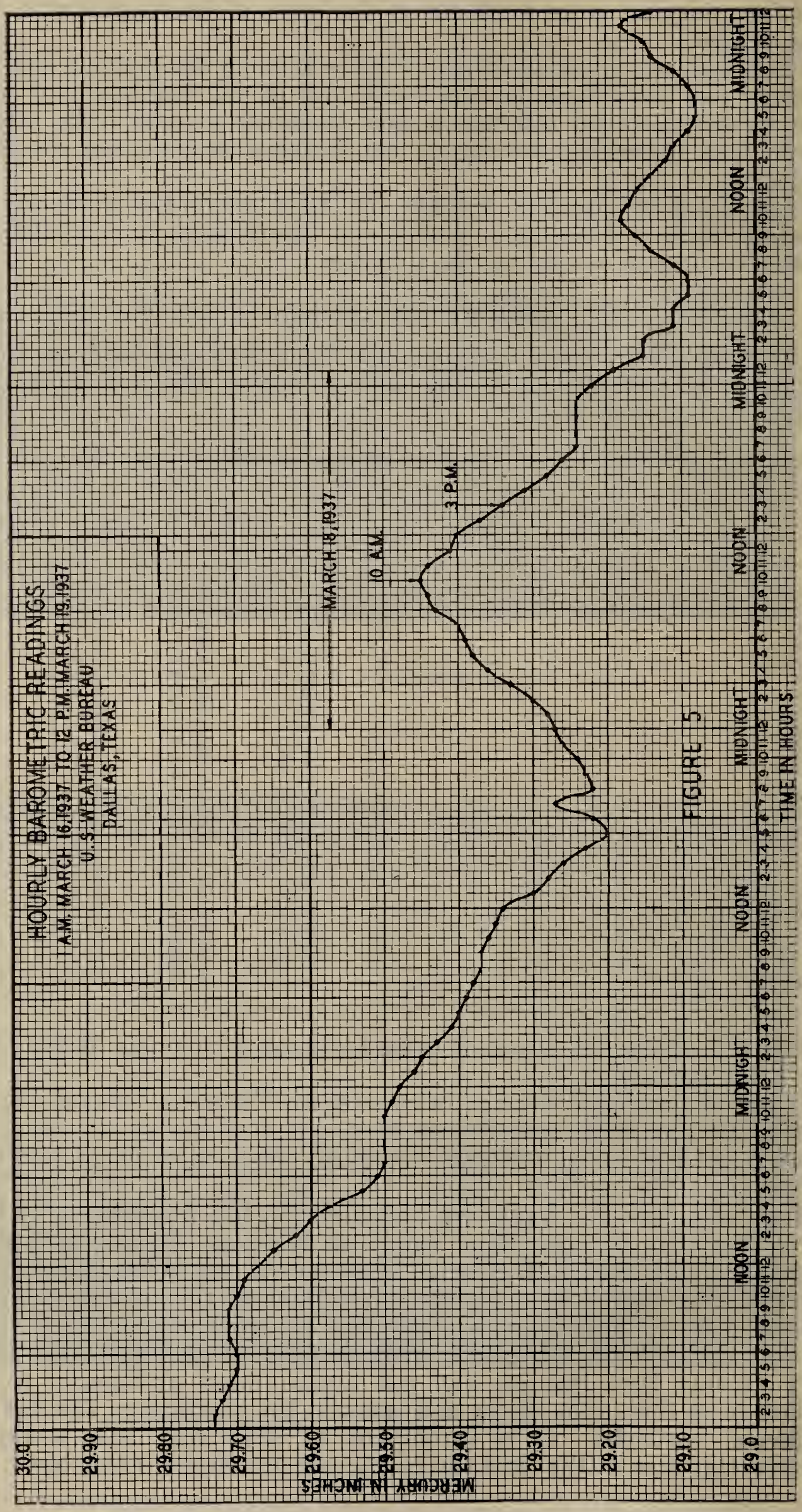
HOURLY BAROMETRIC READINGS
A.M. MARCH 16, 1937 TO 12 P.M. MARCH 19, 1937
U.S. WEATHER BUREAU
DALLAS, TEXAS
MARCH 18, 1937
10 A.M.
3 P.M.
MERCURY IN INCHES
30.0
29.90
29.80
29.70
29.60
29.50
29.40
29.30
29.20
29.10
29.0
MIDNIGHT
NOON
MIDNIGHT
NOON
MIDNIGHT
NOON
TIME IN HOURS

FIGURE 5

In the second place the gas would probably escape more readily and therefore accumulate in larger quantities as the barometer was falling. It is quite likely therefore that during the 5 hours of falling barometer from 10 a. m. to 3 p. m., the approximate time of the explosion, a large amount of gas had collected in the open area under the first floor.

SUMMARY OF TESTIMONY BEFORE MILITARY INQUIRY BOARD

The military inquiry board, appointed under orders of Gov. James V. Allred, held hearings at New London from March 20 to 22. The board consisted of Major Howard, chairman, Colonel Parker, and Captain Kerr, with Captain Coombes as judge advocate and Captain Clark as recorder. Dr. E. W. Schock, professor of chemical engineering at the University of Texas, acted as technical adviser to the board. The writer of this report assisted the board during the hearing.

The developments in the testimony before this board as related to the cause of the explosion can be briefly summarized as follows:

(1) The school board of the New London school district, about the middle of January, discontinued the purchase of gas for heating the building from one of the commercial gas companies and arranged to secure residue gas from one of the oil companies with a line adjacent to the school property. The plumbing and connections involved were made by plumbers employed by the school board.

(2) The explosion originated in the open and unoccupied area underneath the first floor, blowing the floor upward and causing the walls to blow out and the roof to collapse.

(3) The striking of matches by an employee in the open and unoccupied area under the first floor in the southeast section of the building about 10 a. m. the day of the explosion indicated that the gas had not accumulated in dangerous quantities at this point in the building at that time.

(4) Eyewitnesses of the explosion did not generally observe any fire either before, during, or after the explosion which apparently was of violent proportions.

(5) The only occupants of the building who showed evidence of burns were either in the manual training shop located in the basement of the wing on the north end of the building or in the immediate vicinity thereof.

(6) The gas could not be detected by odor and there was no evidence to indicate that any effective methods were in use throughout the East Texas oil field section to detect the presence of leaking gas.

(7) There was no class in session in the chemistry laboratory on the first floor nor any operations in progress in this room at the time of the explosion.

(8) The gas steam radiators in the class recitation and other occupied rooms were vented, while the radiators in the halls, stairways, and unoccupied spaces were generally of the unvented type.

(9) Several boys in the manual training room witnessed a "flash" when the instructor made the electrical connection to operate a portable sanding machine located at the east end of the room. One boy saw the fire flash through the trap door and into the open area under the first floor where the explosion occurred.

(10) The record report book for the manual training shop work was found with the pages burned.

PROBABLE CAUSE OF EXPLOSION

The probable cause of the explosion, based on the statements of eyewitnesses and survivors, was the ignition of combustible gas accumulated in the open unoccupied area on the west side of the building under the first floor by a flash from electrical equipment in the operation of a portable sanding machine located at the west side of the manual training shop at the north end of the building. This ignition of the gas at this point in the shop propagated or "spread" through the accumulated gas mixture, causing an explosion of very violent proportions. This explosion, which occurred at a time when practically all of the classrooms on the floor above were occupied, lifted the floor, blew out the walls, causing the roof to collapse, and resulted in heavy loss of life.

It has not been possible to establish definitely the source of the gas accumulation. It may have resulted from improper pipe connections causing leaks in the lines. It may have come from nearby wells or it may have been due to seepage through the surrounding strata.

In any event the evidence is very definite and conclusive that the explosion originated in the manual training shop and spread through the unoccupied space under the first floor.

QUANTITY OF NATURAL GAS LIBERATED BY WELLS

When oil wells are producing it is claimed that a great deal of natural gas must be wasted under present methods. For instance, in the production of one barrel of oil it thas been estimated that from 1,000 to 6,000 cubic feet of natural gas is wasted. If this estimate is correct it can be readily seen that when a well produces a thousand barrels of oil per hour the gas wasted into the air will be from one to six million cubic feet per hour. Many wells producing at the same time multiply the wastage to enormous amounts.[1]

As previously stated the estimated area of the unoccupied space underneath the first floor on the west side of the building was approximately 65,000 cubic feet. Assuming that the most violent explosive gas mixture was approximately 6.5 percent gas and 93.5 percent air, about 4,225 cubic feet of gas would be necessary to accumulate in this area. With the abundance of gas present from sources in the vicinity of the school building this condition could quite easily develop.

AN UNUSUAL EXPERIENCE IN THE INVESTIGATION

While examining the ruins for evidence that might have a bearing on the explosion, a science book entitled "Chemistry for Today," apparently owned by one of the high-school pupils killed by the explosion, was picked up by the writer from the floor of the manual training shop and found open at page 367, section 476, entitled "Explosions and Explosive Mixtures." This section ironically read as follows:

> We often read of some disastrous explosion caused by the escape of fuel gas in a house. It is of interest to inquire into the cause of explosions and to learn the reason for their terrific power. An explosion is due to a sudden chemical reaction in which the volume of gases formed in the reaction is much larger than that of the reacting substances; hence, if the reacting substances are confined, as in a room or house, something must give way.

[1] Proceedings, National Fire Protection Association, 1936 convention, p. 154.

Another view, showing damage to auditorium. Note one of the busses of the London independent school district used to bring the students from surrounding points.

Close-up view showing debris from wrecked auditorium. Note steel girders, brick, and tile.

Another view of auditorium while recovery work was in progress. Many bodies were buried in the debris.

Damaged automobile parked about 125 feet from southeast corner of building.

The section then continued explaining the conditions under which a gas explosion could occur. The pages of the book were stained with blood and many of them were sticking together. This was a most unusual experience to have in the investigation of a violent gas explosion of this character.

RECOMMENDATIONS FOR PREVENTION OF SIMILAR OCCURRENCES

The following precautionary measures are recommended for prevention of explosions in schoolhouses, public buildings, and institutions:

(1) The use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes should be required.

(2) Practical methods for the installation of gas indicators centrally located in school buildings and public institutions to detect the presence of escaping combustible gases in concentrations below their lower explosive limits should be developed. This disaster has clearly shown the need for further research on the development of alarm systems and warning devices in connection with the operation of combustible gas indicators as adapted to school buildings and other institutions where large numbers of people are exposed to explosion hazards.

(3) Supervision and inspection, by competent authorities, of public buildings and installations of heating and lighting devices and equipment should be required.

(4) Approved pressure regulating devices should be properly installed in all gas lines where natural gas is used for heating school buildings and public institutions.

(5) All electrical equipment and appliances should be installed in accordance with requirements of the National Electrical Code.

(6) Provision should be made for such proper construction of school buildings that will eliminate dead spaces underneath class recitation rooms and similar meeting rooms where dangerous gases can accumulate.

(7) Main pipe lines carrying gas to be used for heating purposes should not pass directly under public buildings, but should be located outside the building proper with only the necessary connections entering the main building.

(8) Adequate ventilation of all necessary and essential spaces under all occupied sections of public buildings should be required.

(9) Adequate ventilation at all times for schoolrooms using gas-heating appliances should be provided.

ACKNOWLEDGMENT

Acknowledgment is made of the assistance rendered and courtesies extended to the writer in the investigation of this explosion by the various State organizations, commissions, and agencies provided by Gov. James V. Allred, of Texas; by Mr. H. Oram Smith, manager of the Texas Inspection Bureau, and members of this organization; by the New London District School Board and Superintendent Shaw and members of his staff; and by the many other State and local agencies. The splendid aid rendered has made possible the definite determination of the cause of the explosion and the recommendation

of further precautionary measures which it is hoped will be helpful in the prevention of occurrences of this character in schoolhouses, public buildings, and similar institutions.

COMMENDATIONS

(1) The Texas authorities deserve special commendation for the very efficient manner in which the entire situation was handled under martial law promptly declared by Governor Allred. Colonel Parker handled all matters pertaining to the disaster in a very practical and thorough manner.

(2) The military court of inquiry is to be commended for its systematic procedure and accomplishment in the development of the important evidence relating to the cause of the explosion, the circumstances and conditions under which it occurred, and the facts contributing thereto.

(3) The Salvation Army workers in charge of Capt. V. M. Vansyckle, of Gladewater, Tex., are to be commended on the very prompt and efficient service rendered by their organization. They arrived at New London approximately within an hour after the explosion occurred and began serving rations to recovery workers, members of the National Guard, and other persons engaged in disaster relief work. Up to Tuesday noon, March 23, the Salvation Army had served about 50,000 sandwiches, 20,000 gallons of coffee, 800 cartons of cigarettes, and large quantities of other refreshments. The service rendered by the organization was very helpful and much appreciated.

(4) Although the disaster affected such a large number of families in the New London school district, the entire community is to be commended on the manner in which they met and handled this great emergency. The cooperative spirit manifested by surrounding towns and communities was typical of the American way of rendering aid to those in need of help.

PRELIMINARY TELEGRAPHIC REPORT

On March 29, 1937, Secretary Wallace sent the preliminary report of the investigation of this explosion by telegraph to Governor Allred, as follows:

Hon. James V. Allred,
Governor of Texas, Austin, Tex.:

Following is submitted for your consideration preliminary report of Dr. David J. Price, principal engineer in charge of Chemical Engineering Division, Bureau of Chemistry and Soils, on investigation made in compliance with your request of the explosion in Consolidated School at New London. Dr. Price concludes that during a period of falling barometer the explosion was due to the ignition of an accumulation of gas in open area under first floor of building by flash from electrical equipment in operation of sanding machine located at west side of manual training shop at north end of building. Price recommends the following precautionary measures for prevention of similar occurrences. Requirements for use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes. Attention should be given by competent engineers to determination of practical application of combustible gas indicators. Gas-detecting appliances are successfully operating in a number of industries and engineers should give further attention to adaptation of alarm or other warning systems to schoolhouses and other public buildings. Provision should be made for supervision and inspection of public buildings and installation of all heating and lighting devices. All electrical equipment and appliances should be installed in accordance with requirements of National Electrical Code. Provision should

be made for proper construction of buildings to eliminate dead storage spaces under rooms. Adequate ventilation should be provided for any necessary spaces under buildings. Adequate ventilation should be provided for schoolrooms using gas heating appliances. Department of Agriculture is very glad to have been of service to you in determining the cause of this explosion which has created Nation-wide concern and we hope our recommendations will be helpful to you in working out plans for prevention of occurrences of this character. Dr. Price has detailed report in course of preparation; copy will be forwarded as soon as completed.

(Signed) HENRY A. WALLACE, *Secretary.*

Governor Allred in acknowledging receipt of the preliminary report replied by wire, as follows:

AUSTIN, TEX., *March 29, 1937.*

Hon. HENRY A. WALLACE,
Washington:

Deeply appreciate your telegram and prompt assistance given us by you and Dr. Price.

(Signed) JAMES V. ALLRED, *Governor of Texas.*

PRESS RELEASE ON PRELIMINARY REPORT

The attached press release was issued by the Department of Agriculture on March 29, 1937, at the time the telegraphic preliminary report was forwarded to Gov. James V. Allred:

DEPARTMENT OF AGRICULTURE,
OFFICE OF INFORMATION,
Washington, D. C., March 29, 1937.

SECRETARY WALLACE SENDS GOVERNOR ALLRED REPORT ON NEW LONDON, TEX., SCHOOL EXPLOSION

Secretary Henry A. Wallace today forwarded to Gov. James V. Allred of Texas the preliminary report of Dr. David J. Price, explosion expert of the Bureau of Chemistry and Soils, on the investigation of the disastrous explosion in the school building at New London, Tex., on Thursday, March 18, which resulted in the death of 455 school pupils. Dr. Price was detailed by Secretary Wallace to cooperate in the investigation of the explosion at the personal request of Governor Allred.

In his report Dr. Price states that in his opinion the explosion was due to the ignition of an accumulation of combustible gases in an open area underneath the first floor of the building by a flash from electrical equipment in connection with the operation of a sanding machine located in the manual-training shop. Price recommended the following precautionary measures for prevention of explosions in public buildings and institutions:

(1) Requirement for use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes.

(2) Determination of practical application of gas indicators to detect presence of escaping combustible gases at percentages below the lower limit of explosibility and development of alarm systems and warning devices for schoolhouses and public buildings.

(3) Provision for supervision and inspection of public buildings and installations of heating and lighting devices and equipment.

(4) Installation of all electrical equipment and appliances in accordance with requirements of National Electrical Code.

(5) Provision for proper construction of buildings to prevent dead storage space underneath class recitation rooms and similar meeting rooms where dangerous gases can accumulate.

(6) Provision for adequate ventilation of all necessary spaces under all occupied sections of public buildings.

(7) Provision for adequate ventilation at all times for schoolrooms using gas heating appliances.

Secretary Wallace advised Governor Allred that Dr. Price is now preparing a detailed report covering the investigation of the explosion which will be forwarded as soon as completed.

The preliminary report as submitted by Secretary Wallace to Governor Allred was inserted in the Congressional Record for Tuesday, March 30, 1937, by Senator Morris Sheppard, of Texas, and appears on pages 3665 and 3667 of the Record for that date.

DISASTER AT NEW LONDON, TEX.

Mr. SHEPPARD. Mr. President, I ask unanimous consent to have printed in the Record a letter from Secretary of Agriculture Henry A. Wallace to Gov. James V. Allred, Governor of Texas, submitting a preliminary report of Dr. David J. Price, principal engineer in charge of Chemical Engineering Division, Bureau of Chemistry and Soils, Department of Agriculture, on an investigation, made in compliance with Governor Allred's request, of the explosion in the Consolidated School at New London, Tex., where such a tremendous loss of life occurred.

There being no objection, the letter was ordered to be printed in the Record, as follows:

MARCH 29, 1937.

Hon. JAMES V. ALLRED,
Governor of Texas, Austin, Tex.:

Following is submitted for your consideration preliminary report of Dr. David J. Price, principal engineer in charge of Chemical Engineering Division, Bureau of Chemistry and Soils, on investigation made in compliance with your request of the explosion in Consolidated School at New London. Dr. Price concludes that during a period of falling barometer the explosion was due to the ignition of an accumulation of gas in open area under first floor of building by flash from electrical equipment in operation of sanding machine located at west side of manual training shop at north end of building. Price recommends the following precautionary measures for prevention of similar occurrences: Requirements for use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes. Attention should be given by competent engineers to determination of practical application of combustible gas indicators. Gas-detecting appliances are successfully operating in a number of industries, and engineers should give further attention to adaptation of alarm or other warning systems to schoolhouses and other public buildings. Provision should be made for supervision and inspection of public buildings and installation of all heating and lighting devices. All electrical equipment and appliances should be installed in accordance with requirements of National Electrical Code. Provision should be made for proper construction of buildings to eliminate dead storage spaces under rooms. Adequate ventilation should be provided for any necessary spaces under buildings. Adequate ventilation should be provided for schoolrooms using gas-heating appliances. Department of Agriculture is very glad to have been of service to you in determining the cause of this explosion which has created Nation-wide concern, and we hope our recommendations will be helpful to you in working out plans for prevention of occurrences of this character. Dr. Price has detailed report in course of preparation; copy will be forwarded as soon as completed.

HENRY A. WALLACE, *Secretary.*

Congressman Morgan G. Sanders, of the Third Texas District, inserted the preliminary report in the Congressional Record for Thursday, April 1, 1937, on pages 3877 and 3891 of the Record for that date.

Mr. SANDERS. Mr. Speaker, I ask unanimous consent to extend my own remarks in the Record and to include therein a short telegram relating to the disaster at New London, Tex., where the schoolhouse was blown up.

The SPEAKER. Is there objection to the request of the gentleman from Texas? There was no objection.

Mr. SANDERS. Mr. Speaker, under the leave to extend my remarks in the Record, I include the following telegram relating to the recent disaster at New London, Tex.:

MARCH 29, 1937.

Hon. JAMES V. ALLRED,
Governor of Texas, Austin, Tex.:

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explosion in Consolidated School at New London. Dr. Price concludes that during a period of falling barometer the explosion was due to the ignition of an accumulation of gas in open area under first floor of building by flash from electrical equipment in operation of sanding machine located at west side of manual training shop at north end of building. Price recommends the following precautionary measures for prevention of similar occurrences: Requirements for use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes. Attention should be given by competent engineers to determination of practical application of combustible-gas indicators. Gas-detecting appliances are successfully operating in a number of industries, and engineers should give further attention to adaptation of alarm or other warning systems to schoolhouses and other public buildings. Provision should be made for supervision and inspection of public buildings and installation of all heating and lighting devices. All electrical equipment and appliances should be installed in accordance with requirements of National Electrical Code. Provision should be made for proper construction of buildings to eliminate dead storage spaces under rooms. Adequate ventilation should be provided for any necessary spaces under buildings. Adequate ventilation should be provided for schoolrooms using gas-heating appliances. Department of Agriculture is very glad to have been of service to you in determining the cause of this explosion, which has created Nation-wide concern, and we hope our recommendations will be helpful to you in working out plans for prevention of occurrences of this character. Dr. Price has detailed report in course of preparation; copy will be forwarded as soon as completed.

HENRY A. WALLACE, *Secretary.*

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