

The Knowledge Bank at The Ohio State University
Ohio State Engineer

Title: What is the Ohio Inspection Bureau?

Creators: Ely, D. P.

Issue Date: May-1923

Publisher: Ohio State University, College of Engineering

Citation: Ohio State Engineer, vol. 6, no. 4 (May/June, 1923), 13, 21.


URI: <http://hdl.handle.net/1811/34213>

Appears in Collections: [Ohio State Engineer: Volume 6, no. 4 \(May-June, 1923\)](#)

What is the Ohio Inspection Bureau?

BY D. P. ELY, '17

Most everyone has heard at some time or other of the Ohio Inspection Bureau. This article tells you what it is and how it functions.

 THE Ohio Inspection Bureau is, first and foremost, not a state institution. It is a strictly private organization operating in the state of Ohio and supported by the fire insurance companies. Its duties consist of scientific fire insurance rate-making, the preparation of reports and information for the use of the insurance companies and fire-prevention service work for the insuring public. In this work the bureau employs two hundred people and maintains a main office at Columbus and ten branch offices throughout the state. About 5000 reports and 300,000 insurance rates are published annually. These rates in reality are the prices of \$100 of insurance for one year and are published in booklet form, each book covering one town or city. Insurance on dwellings is written at flat rates, but every business or manufacturing building carries a specific rate on building and on contents. Revision of these rates is effected by weekly bulletins. A line from a typical rate sheet is shown below:

Risk Map SOMEWHERE, OHIO. Class Bldg. Cont. Date
No. No. Main Street, West Side
10 22-4 Smith—Public Garage 2B 1.50 1.80 4-1-22

Organizations similar to the Ohio Bureau are maintained in the other states.

The problem of fire insurance rate-making is an engineering as well as a business problem and requires for its solution an impartial engineering organization. Experience over a period of years has shown that fire losses vary in proportion with the maintenance of certain standards of public protection, construction, occupancy, location and upkeep, and these are the main factors which must be taken into consideration in any system for the determination of fire insurance rates. From the standpoint of the insuring public the important principle in the makeup of these rates is that the rate of insurance for one certain piece of property should be the same as that for another identically similar property under like conditions. The Anti-Discrimination Law of the state makes this principle mandatory in Ohio.

The rating system in use in Ohio and in fact throughout the entire Middle West is called The Analytic System for the Measurement of Relative Fire Hazard. It has been in use since 1902. Rates obtained by this system are made up of: First: A basic figure; Second: Percentage charges of this figure for structural features; Third: Percentage charges for occupancy hazards; Fourth: Credits for unusually desirable conditions; Fifth: Charges for exposures from adjoining buildings; Sixth: Charges for poor upkeep and housekeeping. Below is a simple example of a rate makeup:

2-story brick basis figure (no public protection)\$0.30

Area charge.....	2%
Walls deficient in thickness.....	8
One frame wall (20% of total perimeter)	28
Unprotected stairway 1st to 2nd	5
Occupancy—Grocery	15
One gasolene engine.....	15
One five-gallon can of gasolene....	10
	<hr/>
	83% = .249
	<hr/>
	.549
Credit for chemical extinguishers (5%)027
	<hr/>
	.522
Exposures10
Rubbish in basement.....	.10
	<hr/>
Published building rate.....	\$0.72
Contents differential.....	.16
	<hr/>
Published contents rate.....	\$0.88

(1) The basic figure.

It will be noted that the final rate obtained is, generally speaking, a function of the basis figure used. Basis figures are graduated according to the degree of public fire protection available into ten classes. The work of grading the various towns and cities of Ohio is done partly by the Inspection Bureau and partly by the National Board of Fire Underwriters. Different tables of figures apply to frame, brick and fireproof buildings. During the past six years the basis tables in use in Ohio have been lowered from 20-30% due to a falling ratio of losses to insurance.

(2) Structural charges.

Structural charges are made according to the rules of the Analytic System for the various features which tend to make a building more susceptible to damage by fire. These charges cover area, walls, roof, ceilings, floor openings, chimneys, stove pipes, etc.

(3) Occupancy charges.

Charges for occupancy are also made according to the rules of the Analytic System and are based upon the causative hazards tabulated from the experience of the insurance companies and upon the combustibility of the contents. These charges cover all occupancies and all features of occupancy which contribute to fire losses.

(4) Credits.

Credits are allowed to the rate for superior features of construction and for protective devices.

(Continued on page 21)

WHAT IS THE OHIO INSPECTION BUREAU?

(Continued from page 13)

(5) Exposures.

These are charges for the danger of fire being communicated from nearby buildings and vary according to construction and the clear space intervening.

(6) After charges.

To the figure obtained so far is added, where necessary, additional charges for small features of hazard which can and should be removed.

The rate thus obtained is the rate per \$100 of insurance applying to the building. Generally speaking it has been found that contents (especially of brick buildings) are more subject to damage from fire than the building itself. To obtain a rate for the contents, therefore, a differential is added. The differential used varies with the damagibility of the contents and other conditions.

Reports published by the Inspection Bureau cover: Fire hazards of particular buildings or manufacturing plant; causes and effects of fires already occurred; description of public fire fighting equipment of the various towns and cities of this state. These reports are for the use of the insurance companies.

The work of fire prevention engineering is becoming one of the most important factors in the fire insurance field and constitutes quite a large part of the service rendered by the Inspection Bureau. This feature is distinctively engineering in character and consists of the giving of recommendations for improvements in

the construction, arrangement and maintenance of property so as to lower the fire hazard and with it the rates of insurance. Some 15,000 letters of this charactre were written by the Bureau during 1922, each one giving a series of specific recommendations for the property in question with an approximate estimate of the saving in insurance rates. This service is free to all property owners and tenants and the service of the Bureau inspectors may be had if desired.

Although the work of rate making and fire prevention engineering is not so technical in its nature as that of the older branches of the engineering profession, it should still be classed as an engineering branch because it requires a fund of scientific knowledge as a prerequisite and includes the designing, arrangement and operation of buildings, machinery, waterworks, etc. A four-year course leading to the degree of Bachelor of Fire Prevention Engineering is being offered at Armour Institute, Chicago, with at present about 100 students enrolled. The subject of "Schedule Rating" is also offered at Harvard. An education in almost any of the engineering branches, however, is a satisfactory preparation for this class of work.

Other organizations associated with the Ohio Inspection Bureau are: Western Actuarial Bureau, Chicago; National Fire Protection Association, Boston; National Board of Fire Underwriters, New York; Underwriters Laboratories, Chicago.