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Study of self-insurance of state-owned property in Montana

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A STUDY OF SELF-INSURANCE OF STATE-OWNED PROPERTY IN MONTANA

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CHAPTER I

THE NATURE AND SCOPE OF SELF-INSURANCE

I. INTRODUCTION

Self-insurance has long been recognized by state governments and large corporations as a method of treating risk. This method of treating risk, though foreign to many holders of values, is not a new concept in the field of risk management. Self-insurance funds used as a method of treating risk date back to 1829 when New York established a guaranty fund for the payment of debts of insolvent banks.[1]

There are several types of state self-insurance funds. Most common are those covering workmen's compensation, teachers' pensions, state employees' pensions, hail insurance, bank guaranties, public deposits guaranties, public property, life insurance, Torrens title insurance, and public official bonds.[2]

South Carolina established a self-insurance fund for public property as early as 1900. Numerous states have at one time studied, considered, and/or adopted a plan of self-insurance. To date twenty states have tried

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[1]David McCahan, State Insurance in the United States (Philadelphia: University of Pennsylvania Press, 1929), p. 2.

[2]Ibid.

a form of self-insurance for public property.[3] Nine of the twenty states currently have a fully functional self-insurance program, three have small-loss reserve programs and eight have dropped the program. The nine states that currently self-insure public property are: Alabama, Florida, Georgia, Kentucky, North Carolina, North Dakota, Oregon, South Carolina and Wisconsin.

Corporations are also beginning to recognize the benefits of self-insurance. Large corporations using self-insurance generally restrict coverage to fire, liability, and/or workmen's compensation. Of the 1,100 business firms with membership in the American Society of Insurance Management (1960), 650 reported that they self-insured these exposures either wholly or in part through the use of large deductibles.[4]

Montana is among the twenty states that had a self-insurance fund. With expectations of savings, the State Legislature passed a self-insurance Law in 1935. For various reasons the fund was not successful and in 1936

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[3]States which have abandoned self-insurance programs are: Colorado, Hawaii, Iowa, Michigan, Minnesota, Montana, New Jersey, Pennsylvania, Rhode Island, Tennessee, and Vermont.

[4]For a complete review of these corporate plans see: Robert C. Goshay, Corporate Self-Insurance and Risk Retention Plans (Homewood, Ill.: Richard D. Irwin for the S.S. Huebner Foundation for Insurance Education, 1964).

the state reverted to commercial insurance. Possible savings for Montana have again aroused an interest in a state self-insurance fund. Montana currently expends approximately $350,000 annually for fire and extended coverage insurance for state-owned buildings and their contents, while at the same time losses are considerably less. Since 1951 the average ratio of losses to premiums paid has been forty-five percent. A study to examine the possibility of savings was called for in 1969, by the Forty-first Montana Legislative Assembly. During the assembly the Senate and House of Representatives passed Senate Joint Resolution 26, asking that the Legislative Council conduct a study of the feasibility and desirability of establishing a self-insurance fund for state-owned property.

The purpose of this paper is to examine the feasibility and desirability of self-insurance. What exactly is self-insurance and what is the need for it? What are the characteristics of a state that can self-insure? What is the economic feasibility of self-insurance that would justify its existence? Accordingly there are three major sections or chapters to this paper. First, a distinction will be made between risk and uncertainty to clarify exactly what the need is for risk treatment. The various methods of treating risks will also be dealt with in the first section, as well as the criteria and prerequisites of self-insurance. The second part will involve an analysis of the nine

existing self-insurance programs. Thirdly, Montana's past and present insurance programs will be examined. Finally, conclusions will be drawn from the first three sections and recommendations made as to the feasibility and desirability of self-insurance for public property in Montana.

Arguments and discussions of self-insurance are often based on emotion and tend to be one-sided. Appendix I summarizes the arguments commonly used by proponents and opponents of self-insurance.

II. RISK AND THE TREATMENT OF RISK

An initial step in developing any self-insurance program is to ascertain the risk-treating alternatives available to the risk-bearer. Self-insurance, as will be fully explained later, is one of several techniques available for treating risks. This section's purpose is two-fold: first, it will define what is meant by "risk" and clarify its association with "uncertainty"; second, it will establish the place of self-insurance among the various methods of risk treatment.

A person seeks insurance in order to protect himself, to provide protection against "risk" as well as "uncertainty." Since these terms are often confused it is essential that they be clearly defined. A variety of definitions for "risk" and "uncertainty" have been offered by authors over the years. Many of these definitions are simply inadequate and

misleading. For example, "risk" is often defined only as "uncertainty of chance of loss". The definition of "uncertainty" is usually left ambiguous. A more thorough definition of these terms is offered by Irving Pfeffer. He states, "Risk and uncertainty are counterparts of one another; the one being measured by objective probability; the other, by a subjective degree of belief."[5] Williams and Heins define "risk" as "objective doubt concerning the outcome in a given situation," and "uncertainty" as subjective doubt concerning the outcomes during a given period."[6] The noted author, A. H. Willet, who is often quoted in textbooks on risk and insurance, also refers to objectivity in connection with "risk". "The word 'risk', as it is employed in common speech, is by no means free from ambiguity. It is sometimes used in a subjective sense to denote the act of taking a chance, but more commonly and preferably in an objective sense to denote some condition of the external world."[7] Frank H. Knight states that

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[5]Irving Pfeffer, Insurance and Economic Theory, (Homewood, Illinois: Richard D. Irwin, Inc., for S.S. Huebner Foundation for Insurance Education, 1956), p. 179.

[6]Arthur Williams and Richard M. Heins, Risk Management and Insurance, (New York: McGraw-Hill Book Company, 1964), p. 5.

[7]Allan H. Willet, The Economic Theory of Risk and Insurance, (Philadelphia: University of Pennsylvania Press, S.S. Huebner Foundation for Insurance Education, 1951), p. 5.

we can "employ the terms objective and subjective probability to designate risk and uncertainty respectively."[8]

These authors generally agree that "risk" is objective or measurable. The technique used to measure "risk" is probability.[9] When a chance of loss exists, an attempt is made to determine the objective probability that it will occur. If the chance or probability of loss is certain, there is no "risk" involved. Similarly, if there is no chance of an event occurring, "risk" again, is not involved. "Risk" thus exists for any event that falls between these two extremes and probability is used to predict whether or not a loss will arise from the "risk". The greatest problem facing the risk-manager, it must be remembered, is not his loss, per se, but his inability to predict (with any exactness) the time, the nature, or the extent of the loss.

"Risk" is not the same as uncertainty. "Uncertainty" is a state of mind that exists in each individual--it is doubt which always exists for the individual despite all he knows concerning the possible outcomes of certain

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[8]Frank H. Knight, Risk, Uncertainty and Profit (New York: Sentry Press, 1964), p. 233.

[9]Probability is the relative likelihood that an event or in this case, an accident or loss, will occur. If the probability is 1, it will occur. The closer probability approaches 1, the more likely a loss will occur. The closer it approaches 0, the less likely it will occur.

events and the probabilities of their occurrences. Thus, for a given set of circumstances, the "risk" is the same for all persons. On the other hand, "uncertainty" varies by degree among individuals and depends more or less upon the information at their disposal and their ability to use it while estimating their risks.

From the above arguments it can be concluded that "risk" is an objective phenomenon that can be measured by objective probability; and that, "uncertainty", is a subjective phenomenon--a state of mind--that cannot be accurately measured by probability. It is important to recognize at this point that, although the function of insurance is to decrease the uncertainty of events in one's mind, any inducement that insurance offers toward preventing or reducing the losses involved tends to lessen the "risk" or probability of the event.

Two concepts are important in understanding the management of risk--the concept of variability and the law of large numbers (or what is commonly referred to as the law of averages). A leading authority views risk as "a combination of hazards which are capable of causing loss or gain. When measured by probability, risk is considered the statistical expression of chance of loss or gain. From this view, the essence of risk is variability."[10] As an

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[10]Willet, p. 7.

illustration of the concept of variability, consider two ranchers, A and B. Each has 500 head of cattle under similar conditions. Over a period of four years, rancher A summarizes that he has lost a total of 100 head of cattle: 28+22+24+26, respectively, each year, with an average loss of $25=\frac{(28+22+24+26)}{4}$. The variations each year from the average have been 3, 3, 1, and 1. A's average variation is $2=\frac{(3+3+1+1)}{4}$. Rancher B also lost 100 head of cattle: 5+40+45+10. His average loss per year was the same as rancher A, $25=\frac{(5+40+45+10)}{4}$. However B's variations from average were more extreme being $\frac{(20+15+20+15)}{4}$ or 17.5.

Utilizing the definition of risk mentioned above, it can be said that the first rancher with an average variation of 2, displays a lesser degree of risk than rancher B whose average variation is 17.5, even though they had the same average loss. This illustration gives one a good idea of the significance of the change in risk as variability changes.

Upon establishing that the risk is relatively high, the question arises as to how this risk can be lowered, i.e., in the above example how could the average variation of 17.5 be lowered to 2? First, the conditions surrounding the risk may be improved. For example, in the above illustration, if rancher B discovers that his losses increase during bad weather, he could attempt to provide protection

for his herd during this type of weather. Such conditions are not always controllable; they are especially not susceptible to control by an insurance company if the rancher has insured his loss. It, therefore, may be important for an insurance company to reduce its variation or risk by insuring several herds of cattle dispersed over a wide geographic area. However, for the individual rancher it would be difficult to improve his variations in losses by increasing cattle numbers.

The second concept is the law of large numbers, a basic law of mathematics and foundation of insurance. This law states that as the number of exposure units increases, the more certain it is that probable loss experience will equal actual loss experience. Hence, the risk decreases as the number of exposure units increases.[11] Stated in a slightly different way, the law of large numbers says that if we do not know the exact probability underlying some occurrence, we can estimate it with increasing precision by increasing the number of observations in a sampling process. In the above example, the insurance company seeks to insure greater numbers of cattle to be able to accurately predict the probability of loss.

To clearly understand the law of large numbers and

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[11]Mark R. Greene, Risk and Insurance (2nd ed., Cincinnati: Southwestern Publishing Company, 1968), p. 5.

its operation as it applies to these kinds of data, consider another well-known statistical law which states that the probable variation increases only as the square root of the number of cases increases.[12] If the number of cases is increased 100 times, the probable variation will increase only 10 times. Consider, for example, that in 10,000 observations for a number of years on an average one loss occurs for every 1,000 observations. The average loss is then 10 units. Furthermore, assume the variation based on past observations is found to be 5. That is, the average loss per year has varied between 5 and 15 units. The probable variation is then 10. Ten is .1 percent of 10,000. The essence of insurance is bound up in the truth that if the observation units are increased from 10,000 to 1,000,000 the average loss would be 1 per thousand or 1,000 units. The variation of actual losses from the average does not increase from 5 to 500, but only from 5 to 50. The losses can then be expected to range between 950 and 1050. The probable variation now is only .01 percent as opposed to the earlier variation of .1 percent. With Willet it may be concluded ". . . that the area of uncertainty increases as the square of the number of cases, and that its ratio to the entire number becomes correspondingly less."[13]

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[12] Willet, p.9. [13] Ibid.

Having defined and illustrated the concept of risk, the question then becomes, how does an individual, a business enterprise, or governmental unit handle potential risks? The alternative ways of treating risks have been grouped together in several different categories. They include: avoiding, ignoring, preventing, transferring, and retaining the risk.[14]

"Avoiding" the risk can best be demonstrated by an illustration. Assume that a hunter decides the risk of being shot by a hunting companion or other hunters is extremely high on a given day. The hunter avoids the risk of being shot by simply not hunting that day.

"Ignoring" a risk is rather meaningless as a method of risk treatment in the sense that one simply does nothing about it, i.e., doesn't actually treat it. In the case of the hunter, he merely ignores the risk of being shot or does nothing about it and goes hunting. This risk is, to him, unworthy of his concern.

"Prevention" of risk differs from the first two methods of risk treatment in the sense that an attempt is made to reduce or eliminate the risk. "The term prevention, rather than the traditional elimination and reduction is used as a general category of treating risk because it most

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[14]John H. Magee and David L. Bickelhaupt, General Insurance (7th ed., Homewood, Illinois: Richard D. Irwin, Inc., 1964), p. 12.

aptly describes the method which is available to the enterprise as well as the result which is the objective of the risk treatment method."[15] Accordingly, an increase in knowledge of loss prevention is desirous even if alternative risk treatment methods are used.

One who is subject to a risk may decide to induce another to assume the risk. This transaction is commonly referred to as transferring of risk. Usually the transferee receives some consideration for his willingness to assume the consequences of the risk.

In former times risk transfer occurred when traders who shipped goods to foreign ports frequently borrowed money at high interest rates, with the understanding that the loan would not be repaid unless the voyage was completed, thus shifting the risk to the creditor. This form of risk transfer was the beginning of insurance as we know it today.

Numerous definitions for insurance exist. Generally they can be categorized according to five viewpoints: economic, legal, business, social, or mathematical; the precise definition is usually a function of the emphasis of those defining the subject. Two authors, in summarizing

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[15]Robert C. Goshay, Corporate Self-Insurance and Risk Retention Plans (Homewood, Illinois: Richard D. Irwin, Inc., S. D. Huebner Foundation for Insurance Education, 1964), p. 13.

the concept of insurance, point out that no one brief definition does justice to its many important viewpoints. "It may be an economic system for reducing uncertainty through pooling of losses; a legal method of transferring risk in a contract of indemnity; a business conducted for profit and providing many jobs in a free economy; a social device in which losses of a few are paid by many; or an actuarial system of applied mathematics."[16]

However, for purposes of this report and viewed from the functional standpoint it can be said that, "insurance is a social device whereby the uncertain risks of individuals may be combined in a group and thus made more certain, small periodic contributions by the individuals providing a fund out of which those who suffer losses may be reimbursed. It is the application of the statistical law of large numbers to the economic problem of risk."[17]

Risk "retention", the last method of risk treatment to be treated in this report, is meeting a risk by merely accepting the chances of loss. In such a case the person facing the chance of loss does nothing about it, but merely plans to withstand whatever loss may occur. A person is retaining a risk when he has a deductible

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[16]Magee and Bickelhaupt, pp. 20-22.

[17]Robert Reigel and Jerome S. Miller, Insurance Principles and Practices (5th ed., Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 29.

clause on his automobile policy. This type of risk treatment is a reasonable approach for small losses that are within the person's, business', or government's ability to absorb losses.

Self-insurance is a highly formalized method of risk retention. Accordingly, self-insurance might more properly be termed insurance, rather than risk retention. To qualify as "self-insurance", the risk retention plan, as will be noted in the next section, must encompass all the requirements of insurance. "Self-insurance in principle differs from insurance only in its management."[18] No-insurance results when a risk retention plan lacks any requirement of insurance.

III. CRITERIA AND DEFINITION OF SELF-INSURANCE

To the average individual the term self-insurance appears self-explanatory. He instinctively assumes that insurance, per se, is no longer necessary and that the holder of values is ready to practice a program of risk retention. This interpretation is misleading and results in confusion. A great portion of this confusion could be eliminated if more information on the subject was available. To date, only a limited amount of literature is

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[18] C.A. Kulp and John W. Hall, Casualty Insurance (4th ed., New York: The Ronald Press Company, 1968), p. 748.

available and there are few who choose to write on the subject. The authorities agree only in general as to what constitutes self-insurance. The articles and books are sketchy and deal more with risk retention than with self-insurance, leaving the reader more confused than ever. Accordingly, as one author states, "The scope of self-insurance, for two reasons, is difficult to define: First, the expression is used to cover a great variety of methods of hazard treatment ranging from simple assumption of hazard to application of the most advanced insurance management techniques; secondly, statistics of self-insurers are generally not published and when published are generally not comparable with those of insurers."[19] This section is devoted to reviewing the criteria necessary for the attainment of a self-insurance program.

Mark R. Greene lists five conditions he considers necessary before a program of risk retention will qualify for self-insurance:

1. There must be a large number of homogenous units that are not subject to simultaneous destruction.

2. A fund of cash or near cash assets is set aside to meet large unusual losses; reinsurance being used until the fund is large.

3. Reliable statistics must be available to permit accurate estimates of losses.

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[19] Ibid. pp. 747-748.

4. The entity should be in sound financial condition.
5. A self-insurance program requires careful administration and planning.[20]

Another leading authority, S.S. Huebner, gives eight conditions he feels must be fulfilled before self-insurance can be practiced:

1. The number of exposure units must be large enough to permit the application of the law of large numbers.
2. Exposure units should be small and uniform.
3. Retention of only reasonable non-hazardous risk units.
4. The loss of one unit should not effect the probable loss of another unit.
5. Gradual creation of a fund accompanied by a gradual withdrawal from commercial insurance.
6. The use of past losses should only be used to a limited extent in predicting future losses.
7. The financial condition of the property owner should be sound.
8. The fund should be kept inviolate and not diverted to other uses.[21]

Magee and Bickelhaupt's self-insurance criteria are fairly consistent with those of Huebner and Greene. It is interesting to note that Magee and Bickelhaupt feel the main consideration should be in the actual setting up and administration of the plan.[22]

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[20]Greene, pp. 85-87

[21]S. S. Huebner, Property Insurance (New York: D. Appleton Century Co., Inc., 1938), pp. 92-94.

[22]Magee and Bickelhaupt, p. 14.

Robert Goshay gives three general elements he considers prerequisites of a self-insurance plan: financial capacity; adequacy of exposure distribution; and catastrophe protection.[23] Financial capacity, as referred to by Goshay, is whether or not the losses anticipated as being retained are within the financial capacity of the firm, given its various capital requirements. Adequacy of exposure distribution ultimately results in stable loss experience. Reinsurance is used to distribute losses greater than the self-insured wishes to absorb, thus providing catastrophe protection--Goshay's third criterion. Many criteria used by others, such as conscientious administration, are presumed by Goshay.

Once an individual, business enterprise, or governmental unit has reviewed what authorities consider as prerequisites, and knows that under self-insurance all the scientific principles and practices pursued by an insurance company must be undertaken, then it follows that the next step should consist of a more detailed analysis of the particular needs of self-insurance. Exactly what is there about self-insurance that in essence turns risk retention into an insurance program?

The term self-insurance is best associated with the word "plan". Webster's definition of "plan" is: "(1) an

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[23]Goshay, p. 22.

outline, draft, map; or (2) a scheme for making, doing or arranging something, project, program, or schedule."[24] Self-insurance is properly referred to as a plan because it is definitely an outline, a program, and a scheme of arranging for losses arising from risks retained.

Self-insurance is a plan of risk retention undertaken by a holder of values. It is generally more appropriate to refer to a holder of values than it is to an entity, form, or property owner. An entity or firm does not include governmental units or individuals, while the phrase "property owner", does not include bailees or leasees who are responsible for values in their possession that they do not own. The phrase "holder of values" leaves no doubt as to who can practice self-insurance: a bailee, housewife, small business, large corporation or governmental unit are all holders of value.

A self-insurance program requires the establishment of a fund out of which losses arising from the risks retained are paid. According to Robert Goshay there are two methods of fulfilling the "financial ability criterion", as he refers to the fund.[25] The first, is established by an inviolable fund. The second involves a "cash flow

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[24]Webster's New World Dictionary of the American Language (College Edition, Cleveland: The World Publishing Co., 1960), p. 1117.

[25]Goshay, p. 24.

approach", where the level of retention is set within the working capital capabilities of the concern.[26] Greene does not agree with a cash flow approach. He points out that if working capital is increased to meet the losses rather than establishing a reserve fund, self-insurance is not being practiced, only a form of no-insurance.[27]

Goshay and Greene are not the only authors that have divergent opinions on the establishment of a fund. Roy A. Westran of the American Management Association has a slightly different attitude.[28] He advocates that if the absence of a specific fund changes self-insurance to no-insurance, then a planned no-insurance program is the more desirable of the two because it would not tie up funds or necessitate reserves to take care of known losses at a future date.

Self-insurance carries with it the expectation that losses will occur. In a highly refined self-insurance program, the amount of loss each year is stable and hence predictable. These losses need not be absolutely identical

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[26]It should be noted that Goshay is referring solely to corporations.

[27]No-insurance is the name generally given to a risk retention plan that lacks one or more of the requirements of self-insurance.

[28]Roy A. Westran, "A Planned No-Insurance Program" American Management Association, Report No. 73 (New York: American Management Association, 1962), p. 78-84.

each year, only stable in a relative way, such as a certain percent of total values. Assuming losses are stable, a fund covering such losses would not be necessary if allowance is made for them in working capital. In reality, what actually happens is that the specific amount of loss that occurs year after year is expected and becomes an expense item which is covered by cash flows.

A fund or reserve may suffice for covering predictable losses, but what of a large unexpected catastrophic loss? Any competent manager of risks who chooses to retain risk, recognizes there is a limit to the loss that any one holder of values can absorb. Similarly there is a limit to the risk that any one insurance company can retain. A commercial insurance company reinsures to protect against a catastrophe situation. Initially when a program is young, only slightly more than the predictable losses can be absorbed by the fund. Gradually, with favorable loss experience, the reserves can be built up and larger losses can be absorbed. Catastrophe protection to a self-insurer is similar in many ways to insurance carried on one's automobile. The average person is generally willing to accept the first $50 to $100 of damage to his automobile, but anything beyond this could put a financial strain on him so he insures with a commercial company.

One authority gives a vivid description of the attitude many self-insurers have toward retaining small

losses and protecting against a financial disaster, "Where it is uneconomical to transfer risk because it is frequent, known, and can almost be expected from year to year, we feel it is best to assume this risk and use our available premium dollars to buy true insurance; coverage which is designed to protect our catastrophe potential and which is paid for by the premiums of the many."[29]

Another criterion that a program must meet before being properly defined as self-insurance is that of adequate exposure distribution. The requirements of mass, homogeneity, and independence must be fulfilled to meet this criterion. However, the importance of this criterion is "stability of loss experience emanating from exposure distribution."[30] Self-insurance assumes that losses will occur; the ability to predict these losses can readily be the determining factor in the program's success or failure.

To permit an accurate measure of losses there must be enough exposure units to permit application of the law of large numbers. This means, in part, that homogenous units must be distributed over a geographic area. The size of the area as well as number of exposure units and loss stability varies with each situation, but for industrial

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[29] Ibid.

[30] Goshay, p. 24.

firms one authority maintains that, "the exposure distribution of the firm should be broad enough to permit loss prediction, given an exposure base adjusted for changing conditions within say, a 15 percent range over three or more fiscal periods."[31]

The financial condition of the holder of values is another factor which determines the amount of variation in losses that is acceptable. If the enterprise or government unit already has a low net asset position, i.e., largely financed by debt, it would desire a much lower element of risk (losses vary in a narrow range) than an entity in better financial condition. Accordingly, the entity having difficulty meeting insurance premiums is not advised to attempt self-insurance.

When a holder of values predetermines the amount of risk to retain, he has demonstrated an awareness of the need for adequate exposure distribution. He considers the present financial condition to be sound and establishes a fund according to his financial capacity. The element of consciousness has been demonstrated. It should be noted that risk retention in an unconscious form is not self-insurance, but no-insurance. When risks are merely ignored or unknown they are not self-insured.

When a holder of values elects to practice self-insurance there are many services provided by an insurance

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[31] Ibid. p. 24.

company that he will have to provide, such as engineering and prevention measures. It is difficult to measure the actual value of these services.

A properly managed self-insurance plan maintains proper coverages for the exposure units and adequate loss reporting and collection procedures. The value of each must be determined in order to facilitate payments from reserves. These responsibilities are largely assumed by insurance companies when one insures with them. In summary, "a self-insurance plan requires careful administration and planning. Someone must be in charge of investing funds, paying claims, inspecting exposures, preventing losses, keeping necessary records and other duties of an insurance program. If the administrative talent is not available to supervise and carry out these duties, self-insurance will not be a satisfactory solution to the treatment of risks."[32]

A definition of self-insurance can now be constructed to include all of the above criteria and prerequisites. Self-insurance is a plan of risk retention practiced by a holder of values which involves the establishment of a fund. Losses arising from the risks assumed are paid out of the fund. The plan is conscious in that it: (1) establishes a predetermined maximum to the assumed risk

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[32]Greene, p. 86.

within the financial capacity of the holder of values; (2) establishes that the distribution is adequate, given the exposures; and (3) determines whether the financial condition of the holder of values is sound. A self-insurance program must include procedures and responsibilities that a professional risk manager would provide. These include engineering and prevention measures, management and protection of the fund, adequate allowance for catastrophe losses, and proper coverages and loss procedures.

IV. ADMINISTRATION OF A SELF-INSURANCE PLAN

Holders of values (governmental units, individuals, or business concerns) who are interested in and meet the prerequisites of self-insurance, must set up and administer the program. Being primarily concerned with state insurance in this paper, attention is directed toward an illustration of the administrative and statutory requirements of a governmental insurance program.

A state can have adequate exposure distribution, stable loss experience, a sound financial condition, etc., and still fail to provide adequate self-insurance protection. If the statutory provisions are inadequate, and if the management is incompetent, or the program lacks full administrative support the program will fail.

At the outset the self-insurance plan should be created in such a manner that the management can be

assigned to one person or office. All property to be covered, whether state, or both state and local, must be clearly described. Inspection and appraisal of property must be provided. All aspects of premium, rates, and methods of payment should be set down. The law must provide procedural guidelines for reimbursement of losses made from the fund. Policies for purchasing catastrophe insurance must be made explicitly clear as well as the amount of each risk to retain. Of primary importance is the protection of the reserves accumulated. By law, there must be stringent rules set down as to how the reserves are used or invested. Furthermore, a goal or objective as to fund size, should be set. There are a myriad of details and the above are only intended to exemplify that the setting up and administration of a self-insurance plan is a complicated matter.

Self-insurance, as is the case with most state affairs, does not involve a textbook formula that can be readily transformed from theory to practice. For this reason the human element is important. A law must be written in a manner that will give general foundations from which the administration can form policies. If enthusiastic personnel are given policies that are adaptable, they should successfully carry out the program. It is important for legislatures to keep in mind that a degree of flexibility must be present. When a law is written, it is

an impossibility to either know or consider all the pertinent variables. Similarly, external conditions vary and must be adapted to. For example, insurance rates may become more acceptable; one area within the state may become a high risk area, or another area might substantially reduce its risk through fire-fighting equipment. In each of these instances flexibility is necessary.

CHAPTER II

REVIEW OF EXISTING STATE SELF-INSURANCE PROGRAMS

As indicated in the introduction, nine states currently have insurance programs that fully qualify as self-insurance programs. The nine states currently insuring state-owned buildings are Alabama, Florida, Georgia, Kentucky, North Carolina, North Dakota, South Carolina, and Wisconsin. This chapter is devoted to reviewing and summarizing these nine programs. Table I gives a summary of general information, operational, and statistical data for the nine programs.

I. THE FUND

The central element around which each of the self-insurance programs revolves is the fund. All nine states under consideration maintain a fund into which premiums are paid, and from which expenses are paid and losses reimbursed. Excepting Georgia, which fund was started in 1965, all of the plans were initiated between 1900 and 1945.

As noted in Table I, various names have been given to the nine self-insurance plans. Either the commissioner of insurance or the department of insurance is in charge of fulfilling statutory requirements of maintaining the funded plan in Kentucky, North Carolina, North Dakota and Wisconsin. Other states leave the administration up to the

TABLE I

GENERAL INFORMATION AND OPERATIONAL DATA FOR VARIOUS STATE SELF-INSURANCE PROGRAMS

State	Fund Title	Year Initiated	Administrating Agency	Property Covered (Other than state)
Alabama	State Insurance Fund	1923	Finance	Public Schools
Florida	State Fire and Insurance Trust Fund	1917	Treasury	None
Georgia	Insurance and Hazard Reserve Fund	1965	Purchases	None
Kentucky	Fire and Tornado Fund	1936	Insurance	None
North Carolina	State Property Fire Insurance Fund	1945	Insurance	Local Government
North Dakota	Fire and Tornado Fund	1919	Insurance	Local Government, Townships and Schools
Oregon	Restoration Fund	1925	Commerce	Vessels
South Carolina	Insurance Sinking Fund	1900	General Services	County Property and Public Schools
Wisconsin	State Insurance Fund	1903	Insurance	County, City, Town and School Districts

TABLE I (Continued)

State	Reinsurance Dollar Point	Placement of Reinsurance	Allowable Investments[a]
Alabama	Ranges to $300,000	Negotiation	U.S., State and Local Bonds
Florida	Single Risk over $50,000	Negotiation	U.S., and Local Bonds
Georgia	90% over $25,000 100% over $100,000	Competitive Bidding	Time Deposits
Kentucky	$300,000	Negotiation	U.S., State and Local Bonds
North Carolina	$500,000	Negotiation	U.S. Securities
North Dakota	$500,000	Competitive Bidding	U.S., State and Local and Corporate Bonds
Oregon	$200,000 and Cumulative Loss Over $1.75 million	Competitive Bidding	U.S. Securities
South Carolina	$150,000 per occurance	Competitive Bidding	U.S. Securities and Loans to State and Local Governments
Wisconsin	Annual or Single Loss over $2 million	Competitive Bidding	Full Range

[a]State and Local refer to bonds of the self-insuring state.

TABLE I (Continued)

State	Perils Covered (Other than Fire & Extended Coverage)	Basis of Insurable Values	Fund Limit	Basis of Reinsurance
Alabama	Vandalism and Malicious Mischief	Actual	None	Per Item and Per Occurrence
Florida	None	Replacement	None	Per Loss and Per Building
Georgia	Vandalism and Malicious Mischief	Actual	None	Per Item and Per Occurrence
Kentucky	None	Depreciated Replacement	$2 million	Per Item and Per Occurrence
North Carolina	Vandalism and Malicious Mischief, Sprinkler and Business Interruption	Not Available	None	Per Loss and Per Building
North Dakota	Vandalism and Malicious Mischief	Not Available	$13 million	Per Occurrence
Oregon	Vandalism and Malicious Mischief, Storm, Flood and Earthquake	Replacement	2% of insured Value	Cumulative
South Carolina	Vandalism and Malicious Mischief	Actual	5% of insurance in force	Per Occurrence
Wisconsin	Vandalism and Malicious Mischief (Named Exclusions)	Actual	$2 million	Cumulative

Source: Applicable state statutes and correspondence from administering officers of the self-insuring states.

department of finance, supervisor of purchases, department of commerce, or the state treasury. Generally a fund manager is assigned to the overall control of the plan.

The law controlling the self-insurance program in five states designates a limit to the size of the fund. Kentucky and Wisconsin each have a $2 million limit, and North Dakota has a $12 million limit on its fund. Fund limits in Oregon and South Carolina are set at a percentage of values insured. Oregon has a limit of "2 percent of values covered" and South Carolina, a limit of "5 percent of insurance in force".

II. COVERAGES

The basic coverage of self-insurance plans includes the perils covered by fire and extended coverage. The basic fire contract covers both the perils of fire and lightning, while the extended coverage endorsement includes windstorm, hail, riot, explosion, riot attending a strike, civil commotion, and aircraft, vehicle and smoke damage. Florida and Kentucky alone confine their coverages to fire and extended coverages. All the other states also insure against the perils of vandalism and malicious mischief. In addition, North Carolina protects against sprinkler leakage and business interruption; Oregon protects against the perils of flood and earthquake; and Wisconsin probably having the most inclusive coverage, naming exclusions, would include all of

the above perils.

Self-insurance plans are primarily designed to cover state-owned buildings and their contents. However, the programs in North Carolina, North Dakota, South Carolina and Wisconsin cover, in addition to the state-owned property, local government and public school property. Alabama covers only public school property in addition to state-owned property.

Values of covered properties are generally determined in a similar manner as are values for commercial insurance. Florida, Oregon, Kentucky, Alabama, Georgia, Wisconsin and South Carolina use either of the two standard procedures: cash values or market values; or replacement cost less depreciation. The state law in North Carolina is vague in that there is apparently no prescribed manner by which to determine the insurable values. In North Dakota values are determined by the insurance commissioner or an appraisal company.

III. REINSURANCE

All nine states protect against the catastrophe situation or use what is commonly referred to as reinsurance. Large, individual and cumulative losses, along with high risk property, are covered by commercial reinsurance. There are various bases for this reinsurance. Some variation of the cumulative basis, such as excess per occurrence or per

year is commonly used.

Dollar points at which commercial reinsurance becomes effective vary. This dollar point has generally been adjusted upward as the funds become more sound. North Carolina, for instance, initially reinsured all single risks greater than $50,000. Presently its reinsurance point is $500,000. The dollar point at which reinsurance is entered into is listed on Table I. Whether the state used a bid or negotiated method for selecting the reinsuring company is also indicated in Table I.

Reinsurance premiums, for the most part, are not comparable. North Dakota reinsures only three high-risk properties, while Georgia reinsures 90 percent of all single risks over $25,000 up to $250,000 and 100 percent of the value over $250,000. Furthermore, in some states, such as Wisconsin and Oregon, special appropriations from the general fund are used to purchase reinsurance and, therefore, are not reflected as a cost to the self-insurance program.

Reinsurance selection, whether prescribed by statute or administrative decree, is by competitive bidding in five states and by negotiation in four.

IV. PREMIUMS

Premiums paid into self-insurance funds are generally based on the rates used by commercial insurance companies. To facilitate determining the proper rates to

use, many programs subscribe to rating bureaus. Alabama, for example, uses the current bureau rate less 40 percent. North Dakota and Wisconsin charge various agencies 50 percent of the rate established for them by the fire rating bureau. Georgia charges slightly more than bureau rates, while Kentucky uses exactly bureau rates and South Carolina slightly less than, or equal to bureau rates. Premiums in Oregon are not based on bureau rates but rather a rate is used which is considered sufficient to maintain the fund at an adequate level. Prior to 1969 the maximum amount paid into Oregon's fund was $400,000. In 1969 Oregon changed to a rate of ".2 percent of the property insured" as the amount paid into the fund rather than a set dollar amount.

The amount of premium paid into the various funds differs according to the amount of property insured. In 1968 property insured in North Dakota was valued at $305-million and the value of the property covered by the fund in Wisconsin was nearly $2 billion. Therefore, a comparison of premiums paid without a comparison of the values insured would be meaningless. Table II lists both values and premiums for an easy comparison.

V. FUND INVESTMENTS

Funds accumulated as reserves tend to be invested in low risk securities. Generally these reserves are invested

TABLE II

OPERATING STATISTICS FOR NINE STATE SELF-INSURANCE FUNDS

1960-1968

Alabama[a]

Year	Total Property Value ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1960	$ 372	$ 5,169	48.7	6.4	NA*
1961	397	5,636	34.2	5.8	3.5
1962	453	6,149	50.2	4.9	3.6
1963	484	6,782	16.7	5.6	3.5
1964	519	7,160	54.5	7.7	3.6
1965	552	7,788	26.5	7.1	3.7
1966	606	8,241	63.3	7.3	4.3
1967	667	9,190	30.5	7.4	4.0
1968	727	8,867	65.9	8.2	4.3

[a]Data are for fiscal year ending September 30.

[b]Losses as a percentage of premiums.

[c]Expenses as a percentage of premiums.

*Not Available.

TABLE II (Continued)

Florida[a]

Year	Insurance in Force ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1960	$ 219	$ 4,986	NA*	8.5	NA*
1961	238	5,201	NA*	9.9	3.3
1962	275	5,548	7.0	10.1	3.3
1963	295	5,880	11.4	9.6	3.2
1964	326	6,171	33.3	11.0	3.2
1965	364	6,431	57.1	13.4	3.1
1966	397	6,749	36.0	9.4	3.1
1967	408[d]	7,187	9.7	10.8	3.0
1968	422	7,688	12.4	9.8	3.0

[a]Data are for fiscal year ending June 30.

[b]Losses as a percentage of premiums.

[c]Expenses as a percentage of premiums.

[d]Estimated.

*Not Available.

TABLE II (Continued)

Georgia[a]

Year	Total Property Value ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1965	$248	$2,683	35.8	6.1	NA*
1966	364	1,471	10.3	5.4	2.2
1967	435	1,803	26.0	4.8	4.8
1968	588	2,187	38.8	6.6	4.6

[a]Data are for fiscal year ending April 30.

[b]Losses as a percentage of premiums.

[c]Expenses as a percentage of premiums

*Not Available.

TABLE II (Continued)

Kentucky[a]

Year	Insurance in Force ($000,000)	Fund Assets[b] ($000)	Loss Ratio[c] (%)	Expense Ratio[d] (%)	Return on Avg. Assets (%)
1961	$ 225	$2,192	26.5	10.0	NA*
1962	245	2,359	22.4	10.0	3.0
1963	270	2,399	25.9	30.9	2.5
1964	300	2,389	29.5	30.3	2.8
1965	342	2,456	7.6	39.7	2.7
1966	365	2,475	27.0	31.4	2.8
1967	370	2,553	11.7	28.5	2.6
1968	395	2,670	5.0	10.0	2.4
1969	450	2,190	57.0	10.1	3.9

[a]Data are for fiscal year ending September 30.

[b]Amount that would have accumulated in the fund without transfers to capital construction program.

[c]Losses as a percentage of premiums.

[d]The expense ratio (expenses as a percentage of premiums) for 1963-1967 includes the cost of reinsurance.

*Not Available.

TABLE II (Continued)

North Carolina[a]

Year	Total Property Value ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1961	$450	$2,464	10.5	30.8	NA*
1962	475	2,646	5.0	29.0	3.2
1963	521	2,916	62.0	30.2	3.5
1964	535	3,175	29.2	28.4	3.5
1965	558	3,308	69.2	25.3	3.5
1966	584	3,439	65.6	30.6	3.7
1967	636	3,744	39.0	18.4	4.2
1968	702	4,040	50.9	30.1	4.0
1969	781	4,2--	66.6	31.5	4.3

[a]Data are for fiscal year ending September 30.

[b]Losses as a percentage of premiums.

[c]The expense ratio (expenses as a percentage of premiums) includes the cost of reinsurance.

*Not Available.

TABLE II (Continued)

North Dakota[a]

Year	Total Property Value ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1960	$234	$4,696	51.7	12.5	NA*
1962	292	5,529	34.6	11.7	4.9
1964	316	6,502	41.6	9.6	5.1
1966	343	7,545	27.4	6.8	5.6
1968	305	7,944	100.5	29.8	8.2

[a]Data are for calendar-year bienniums ending December 31.

[b]Losses as a percentage of premiums.

[c]The expense ratio (expenses as a percentage of premiums) includes the cost of reinsurance.

*Not Available.

TABLE II (Continued)

Oregon[a]

Year	Total Property Value[b] ($000,000)	Fund Assets ($000)	Loss Ratio[c] (%)	Expense Ratio[d] (%)	Return on Avg. Assets (%)
1960	$301	$2,956	NA*	NA*	NA*
1962	352	2,970	NA*	NA*	7.4
1964	440	1,932	680	7.0	8.8
1966	513	2,032	174	3.8	10.4
1968	602	241	447	2.5	16.2

[a]Data are for fiscal-year bienniums ending June 30. Data are not comparable with other states because of Oregon's statutory limitations on premium charges.

[b]Total property value less values insured commercially.

[c]Losses as a percentage of premiums.

[d]Expenses as a percentage of premiums.

*Not Available.

TABLE II (Continued)

South Carolina[a]

Year	Insurance in Force ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1960	$501	$14,483	29.3	28.7	NA*
1961	543	15,917	14.3	29.3	2.7
1962	585	17,157	29.0	21.0	3.4
1963	623	18,689	9.5	21.0	2.9
1964	670	20,119	25.2	21.4	3.7
1965	711	21,558	44.2	22.8	3.5
1966	782	22,591	51.3	23.8	3.6
1967	892	24,050	41.0	26.7	3.8
1968	1,018	25,773	46.1	24.0	4.1

[a]Data are for fiscal year ending September 30.

[b]Losses as a percentage of premiums.

[c]The expense ratio (expenses as a percentage of premiums) includes the cost of reinsurance.

*Not Available.

TABLE II (Continued)

Wisconsin[a]

Year	Insurance in Force ($000,000)	Fund Assets ($000)	Loss Ratio[b] (%)	Expense Ratio[c] (%)	Return on Avg. Assets (%)
1960	$ 754	$7,554	35.5	7.2	NA*
1961	884	8,101	23.1	9.2	3.1
1962	995	8,558	63.1	10.8	3.6
1963	1,186	8,963	64.2	14.1	4.1
1964	1,278	5,738	87.1	13.8	3.9
1965	1,450	5,510	154.4	13.8	3.7
1966	1,652	4,765	47.9	13.4	4.1
1967	1,765	5,950	70.3	12.7	4.2
1968	1,987	3,159	94.4	13.5	---[d]

[a]Data for calendar year ending December 31.

[b]Losses as a percentage of premiums.

[c]Expenses as a percentage of premiums.

[d]Negative amount.

*Not Available.

Source: Applicable state reports and correspondence from state administrators.

in some form of government securities. Only Florida and Wisconsin allow a full range of investments, including everything from U. S. government securities to corporate common stocks. North Dakota is investigating a similar range of investments.

VI. OPERATING PERFORMANCE

The nine states practicing self-insurance represent a wide economic spectrum in terms of population and wealth. There is also diversity in the values covered by the funds. In 1968 North Dakota, the state with the smallest fund, insured $305 million in values. Wisconsin, the state with the largest fund, had property values of nearly $2 billion. Assets held by the funds varied from $241,000 to $26 million.

Over a period of time the success of any self-insurance must be determined from a comparison of expenses to premiums. Table II gives a summary of the operating statistics for the plans since 1960. The loss ratio, expense ratio, and return on assets, given for each state indicate favorable loss and expense history but a low return on assets.

Loss ratios for commercial companies have been consistently above 50 percent. Loss ratios for the nine self-insurance funds have been less stable but far more favorable at 40 percent. In only three instances was the loss ratio in a state over 100 percent. All three instances were in

one state, Oregon, and this high rate can be attributed to the fact that, prior to 1962 the maximum paid into the fund was $400,000. This amounted to a premium rate of $1 per $1,200 of values. Furthermore, there is no indication that loss ratios are rising in the nine self-insuring states.

Expenses as a percentage of premiums for the self-insurance funds are also quite favorable when compared to the expenses of commercial carriers. Property and casualty insurers in 1968 had an expense ratio of 49.3 percent. None of the self-insuring states have ever had a ratio this high. Even if an additional 20 percent is added for reinsurance the expense ratios are still favorable when compared to commercial carriers.

Investment returns earned by the fund have generally been around 3.5 percent. This relatively low return is due to the necessity of investing in sound, near cash, government securities.

VII. SUMMARY

The nine self-insurance funds have been successful. Loss ratios experienced by the self-insurance plans have been significantly better than those of commercial insurers. Expense ratios have been lower than those of commercial carriers even when an additional 20 percent is allowed for reinsurance. Neither loss nor expense ratios appear to be increasing.

Experiences in Wisconsin and North Carolina represent the ultimate in a state self-insurance fund. North Carolina pays premiums into the fund; in addition, the legislature appropriates $250,000 annually for the fund from the general revenues. Since 1957 the $250,000 appropriation has not been increased, thus indicating the success of the plan. In Wisconsin premiums have not been collected on state property since July 1, 1961, but losses have been paid as usual. The only premiums collected were on county, city, town, and school property.

CHAPTER III

MONTANA'S INSURANCE PROGRAM PAST AND PRESENT

I. EARLY DEVELOPMENTS

The question of insurance on state property was first considered in 1893 when the legislative assembly appropriated $760 to insure state property, $360 of which was set aside for insuring the state law library. However, it was not until 1897 that licensing laws were enacted. There was no person serving as insurance commissioner until 1909.

Prior to 1932 commercial insurance carried on public buildings was handled by a group of insurance companies, commonly known as a pool, and the commissions arising from the sale of insurance to the state were distributed to the various participating agents. In 1933, when the total value of state property was set at $9,300,000, the state reverted to a bidding basis: the lowest bidder received the entire line of insurance.

II. THE 1935 SELF-INSURANCE LAW

Self-insurance is not a new concept in Montana. In 1935 the Twenty-Fourth Legislative Assembly passed a bill which provided for self-insuring state-owned buildings and their contents.

Self-insurance was apparently justified in 1935 as a

possible savings device. During the ten years prior to the 1933-35 period, a total of $300,000 was paid out to insurance companies.[1] Losses during this same ten-year period were between $8,000 and $9,000. This means that for every dollar collected on insured losses, $37 was paid in premiums.

There was a belief held by insurance men at the time, that the self-insurance bill was a political football.[2] During the 1934 election, politicians in opposition to the insurance business gained a majority in the legislature. Consequently, insurance men felt that prejudices as well as economies were behind passage of the bill.

S.B. 22 was reluctantly passed on March 6, 1935, thus enacting the self-insurance law.[3] The law as stated in Chapter 179 of the Twenty-Fourth Legislative Assembly reads:

> An act to provide for state insurance of public buildings and contents; to provide for the valuation thereof, to provide for the duties of public officers in connection therewith; to

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[1] Report of Special Investigating Committee Appointed Under Senate Joint Resolution No. 7, to Investigate State Auditor's Office as to the Administration of the State Insurance Act and the Administration of Other Insurance Matters, (Unpublished, 1936 and 1937).

[2] Arnold Huppert, History of the Montana Association of Insurance Agents (Unpublished, 1959), p. 13.

[3] L. E. Pease, "An Examination of the Insurance Business and its Role in the Growth and Development of a Non-Industrialized State." Unpublished Ph.D. Dissertation in process, The Ohio State University, Columbus, Ohio, p. 13.

> provide for the levying of assessment premiums, for the investment and distribution of the insurance fund, and for the payment of losses; to prevent any other manner of insuring public property, except as herein provided and to provide penalties for violation of the Act.[4]

The 1935 self-insurance law was a disappointment. The law provided that insurance be written at the prevailing and commonly accepted insurance rates. Since much of the insurance coverage contemplated by the law was not readily available from commercial companies, there were no prevailing rates for such coverage. As a result, rates were substantially increased on coverages for which there was no insurance experience. In Cascade County, for example, $8,500 more was paid into the state fund than would have been paid to private carriers for the same coverage. The minimum increase was estimated to be 133 percent.[5]

Proponents of the self-insurance law were dismayed at the increased rates. Reasoning that the State Auditor and Deputy Commissioner of Insurance, as stated in Section 2 of the law were responsible for carrying it out, proponents suspected them of mismanagement. Consequently, a special investigating committee was appointed to examine

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[4]Twenty-Fourth Legislative Assembly, Laws Resolutions and Memorials of the State of Montana (Helena, Montana: State Publishing Company, 1935), p. 378.

[5]Huppert, p. 17. It should be noted that these figures were compiled by insurance men and there may be a slight exaggeration. However, the increase would still be substantial.

this possibility.

The committee found that prior to passage of the law, state property was being insured at a rate of $.78 per hundred. In 1936 under the self-insurance law a reinsurance contract was entered into at a rate of $1.40 per hundred, an increase of nearly 100 percent. During 1936, $110,529.82 was spent for reinsurance. Prior to this time, over three years of insurance coverage could have been purchased for this amount. The Special Investigating Committee noted: "As we have pointed out, the company offering the contract did not change--only the contract. We see no reason for this action, unless the reason might be that the State Auditor and Ex-officio Commissioner of Insurance wished to discredit both the company offering the contract and the law itself. If this be true, such action on the part of a state official is indefensible."[6]

It was suspected that failure of the program was also attributable to poor drafting of the legislation. No money was appropriated for the purpose of creating a fund out of which losses could be paid. As a result, most of the insurance protection had to be reinsured. Not only was state-owned property insured, but it was mandatory that every political subdivision of the state also be insured under the law. A penalty of a fine and jail sentence was possible for

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[6] Report of the Special Investigating Committee. (See the first footnote of Chapter III.)

the heads of the political subdivisions if the insurance was not placed with the state. Extended coverage, as it exists today was not available in Montana in 1935. The bill, however, provided for extended coverage plus such hazards as floods. Many of these coverages were made mandatory by the law and consequently buildings on mountainsides were insured against floods, and office equipment against hail.

Insurance men around the state became concerned that the self-insurance law was costing the people of Montana too much money. The Montana Association of Insurance Agents decided to initiate a referendum in an effort to repeal the law. In order to successfully carry out a referendum it was necessary to secure signatures of 15 percent of the 1932 gubernatorial vote in a majority of the counties, a total of about 25,000 signatures. With the required number the law would have become inoperative until the 1936 election when the people could vote on it. Charles Miller, Jr., head of the Miller Agency in Butte, was to reinsure all the state's insurance business. He was to benefit financially from this business and sought to keep it. Accordingly, he leased a Helena newspaper, The Western Progressive, to combat the referendum.[7]

The Montana Association of Insurance Agents carried

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[7]Huppert, p. 18.

out their mission of securing the required signatures with great success. When it appeared that they had enough signatures, Charles Miller filed an injunction against the Secretary of State to keep him from certifying that there were enough signatures to make the law inoperative. Consequently, the law remained in effect until the election of 1936 when it was voted down by a large majority.[8] Thus, the short-lived self-insurance program ended and state insurance was reverted to commercial coverage.

III. PRESENT STATE INSURANCE PROGRAM

Since 1936, Montana has purchased commercial insurance. State-owned buildings and their contents are insured under two standard fire insurance contracts. The fire insurance is divided between stock and mutual companies, each of which is represented by an association. Stock companies are represented by the Montana Association of Insurance Agents and mutuals by the Montana Association of Mutual Agents. The amount of state insurance written by each association is determined from the premium tax paid by their respective member companies. Stock companies pay the majority of the tax, 90 percent; thus, they write 90 percent of the state's coverage. Mutuals pay 10 percent of the tax and write 10 percent of the state's coverage. The actual

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[8]Pease, p. 13.

policies are written for the Montana Association of Insurance Agents by the Home Insurance Company and the Montana Association of Mutual Agents by the Northwestern Mutual Insurance Company.[9] Likewise, Home and Uniguard reinsure with associate insurance companies on the basis of premium tax paid in Montana.

Coverages provided are basically the same as those that have been in effect for a number of years. All state buildings and their contents are insured against the perils of fire and extended coverage. Specifically, the basic contract covers the perils of both fire and lightning; extended coverage includes windstorm, hail, explosion, riot, riot attending a strike, civil commotion, and aircraft, vehicle and smoke damage.

State buildings and their contents are insured under one of three forms attached to the standard fire contract: (1) the Public and Institutional Property form (PIP) which insures all eligible property; (2) the Miscellaneous Blanket form which insures property ineligible for the PIP form; and (3) a specific insurance coverage on property acquired by the Right-of-Way Division of the Highway Commission during condemnation proceedings, and not covered by either of the above two forms. A 90 percent coinsurance clause applies to all values insured except those under the

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[9]The Northwestern Mutual Insurance Company has recently changed its name to Uniguard.

Right-of-Way values.

Montana adapted its insurance coverage to the PIP form on July 1, 1960, and approximately 95 percent of all insurable values are presently covered by this form.[10] The PIP form has been one of the most interesting new developments in property insurance. It is optional for insuring hospitals, churches, schools, colleges, and municipal, county and state installations. The PIP form is unusual in several respects: (1)credits of 25 percent or more are given if the insured complies with initial inspection requirements, quarterly self-inspections, and annual statement of values; (2) valuations are controlled by a mandatory agreed-upon amount of valuation and a mandatory 90 percent amount of insurance; and (3) a $100 deductible per item applies, as well as a maximum deductible per loss of $1,000 per all perils except fire and lightning. The result has been a form which emphasizes broad coverage, loss prevention and lower cost, making it a highly competitive and stable new multipleline insurance contract.[11]

Approximately 5 percent of the state's insurable values are covered under the miscellaneous blanket form. This form is used primarily to cover property ineligible

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[10]Conversation on 12/9/69 with State Board of Examiners, Helena, Montana. The Examiners estimate that $65 thousand was saved in premiums the first year through this adaptation.

[11]Magee and Bickelhaupt, p. 585.

for the PIP form. It includes the state prison, Mountain View School, Pines Hills School, Swan River Youth Forest Camp and several airport facilities. Values covered by this form are about $8 million.

A third type of coverage is written for Right-of-Way property. Values involved are about $71,000, .04 percent of the total current schedule, and there is a provision for the automatic pick-up of properties acquired by the Highway Commission during condemnation proceedings.

State insurance contracts are generally written without use of deductibles, but some forms currently carry deductible clauses which vary in amount in accordance with: (1) location of the property; (2) kind of property covered; and (3) nature of peril against which insurance is provided. In general, $100 shall be deducted from every loss arising from all insured perils other than fire and lightning, and for all values insured under the PIP form with a limit of an aggregate deductible of $1,000 in any one occurrence. For dwellings covered under this form, a $50 deductible is applicable to losses arising from fire and lightning. The Miscellaneous Blanket form and Right-of-Way Sections of the contracts have a $50 deductible applicable to insured perils occurring to dwellings. This deductible is increased to $100 for losses originating from wind and hail for thirty-one counties in the state. Those counties generally lie east of a line north and south through Great Falls.

State properties change in valuation as repairs, additions, alterations, acquisitions and disposals occur. These contracts anticipate such changes by calling for periodic inspection and adjustment in the insurance contracts. One state agency, the Board of Examiners, has the responsibility for administering state insurance matters. However, several other groups offer inspection services. Each individual agency, department head, or administrator must complete a "self-inspection blank" semi-annually to qualify for the PIP plan. The Montana Fire Rating Bureau inspects state properties annually, and the Montana Association of Insurance Agents, through a licensed safety engineer, conducts a thorough reappraisal of values every three years. Further, the facilities of the Montana Fire Marshall's office are continuously inspecting buildings throughout the state with specific attention given to fire protection recommendations.

IV. LOCATION AND VALUE OF STATE-OWNED PROPERTY IN MONTANA

Prior to recommending a type of risk treatment for state-owned buildings and their contents, the risk manager must have a knowledge of the value and location of such property. Table III shows the number, valuation, and percentage distribution of these properties as of January 1, 1970. There were 177 locations or cities where this

TABLE III

NUMBER, VALUATION, AND PERCENTAGE DISTRIBUTION OF STATE-OWNED PROPERTIES

January 6, 1970

Valuation[a]	Number of Properties	Total Value Within Category ($000)	Percentage of Total Value
Less than $10,000	52	$ 328	.18
$10,000 - $49,999	85	1,860	1.05
$50,000 - $99,999	10	816	.46
$100,000 - $299,999	9	1,477	.84
$300,000 - $999,999	6	3,252	1.84
$1,000,000 - $2,999,999	4	7,803	4.42
$3,000,000 - $5,999,999	3	16,068	9.11
$6,000,000 - $9,999,999	3	20,367	11.54
$10,000,000 - $29,999,999	3	43,152	24.46
Over $30,000,000	2	81,323	46.09
	177	$176,449	99.99

[a]Total values were calculated from the 90 percent insurable values reported by the State Board of Examiners. Each property represents a location. In some cases location totals are distorted because "all contents" belonging to one agency are listed at one location; when, in fact, the contents are at several locations.

Note: Figures may not add due to rounding.

Source: State Board of Exminers, Schedule of State Properties as of July 1, 1968; Notes on changes of the State Building Schedule January 15, 1969 (unpublished) and January 6, 1970.

property is situated, and the total valuation was $176,419,910.[12]

Valuations in terms of locations are quite polarized. As noted in Table III, values are either quite low or relatively high. There are very few middle or typical properties making up a general valuation. Of the 177 locations, 147 or 83 percent have values of less than $100,000. These 147 smaller locations account for only 1.7 percent of the total value of $176,419,910. In contrast, Table IV reveals that the 15 largest valued locations (values of $1 million or greater) account for 95.7 percent of all values. Similarly, the two locations with the highest values (Bozeman and Missoula) alone comprise 46 percent of the total valuation. Only 15 locations, accounting for 2.9 percent of all values, are in the middle categories of $100,000 to $999,999.

Most of Montana's largest valuations are located within a specific geographic area. As indicated in Figure 1, eighty percent of the total values lie within a 100-mile air radius of Anaconda. Individual locations vary in size from $1,111 to over $42 million.

It is mandatory that all buildings be insured under the present insurance program; individual buildings range

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[12] $176,419,910 represents insurable values which are determined by using cost to replace current materials, less any depreciation.

TABLE IV

LOCATIONS WITH VALUES OF
$1 MILLION OR GREATER

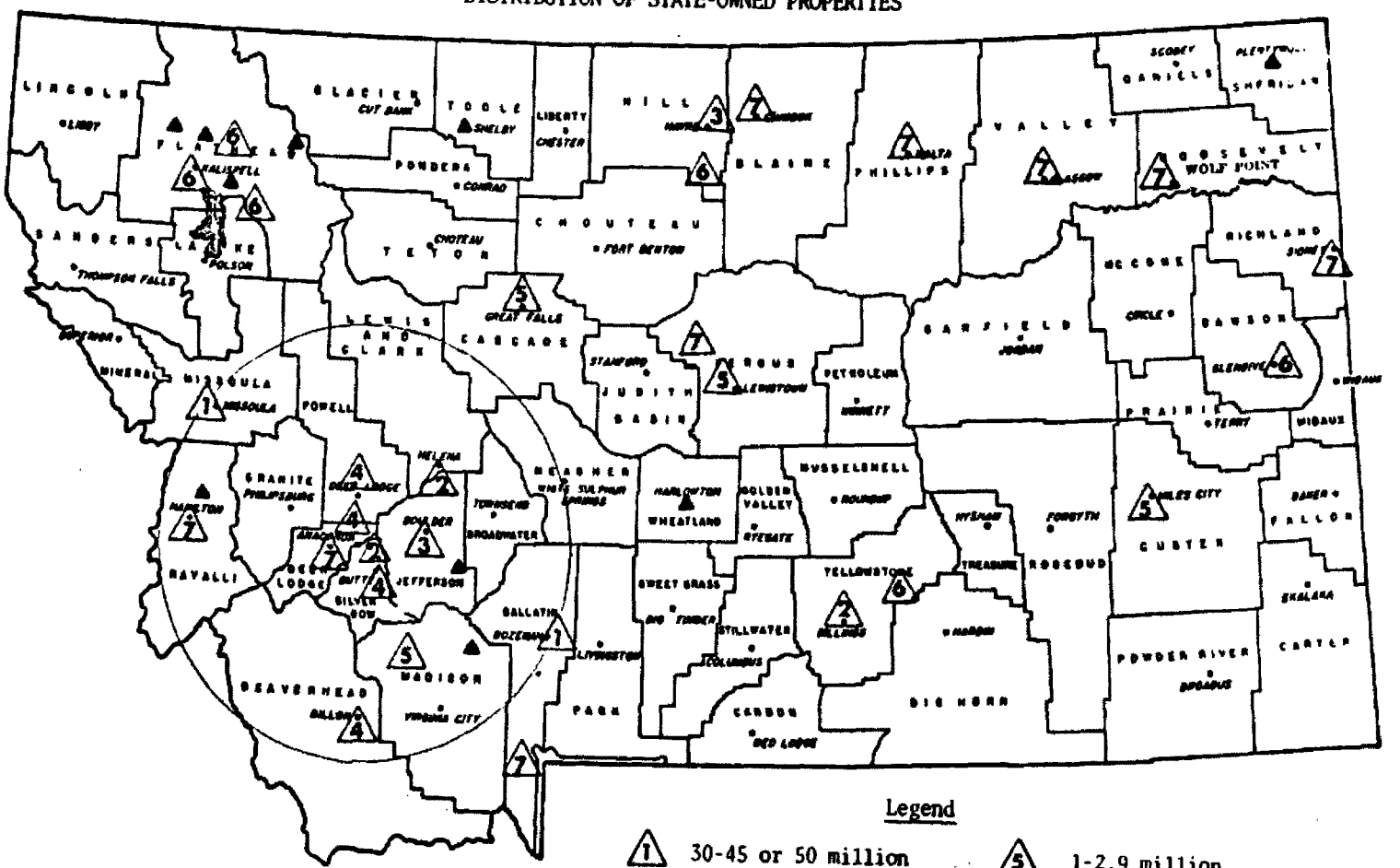
January 6, 1970

Location	Value	Percentage of Total Value
Billings	$14,773,000	8.4
Boulder	6,361,809	3.6
Bozeman	42,684,331	24.2
Butte	5,360,000	3.0
Deer Lodge	5,066,971	2.9
Dillon	6,437,776	3.6
Galen	5,641,436	3.2
Great Falls	1,569,111	.9
Havre	7,567,555	4.3
Helena	18,043,443	10.2
Lewistown	1,788,488	1.0
Miles City	2,566,000	1.5
Missoula	38,640,222	21.9
Twin Bridges	1,879,145	1.1
Warm Springs	10,335,724	5.9
Total (15 locations)	$168,686,223	95.7

Total Valuation of all locations $176,419,910.
15 Above Locations as Percent of Total - 95.7%.

Source: State Board of Examiners, Schedule of State Properties as of July 1, 1968; Notes on changes of the Building Schedule (unpublished), January 15, 1969 and January 6, 1970.

DISTRIBUTION OF STATE-OWNED PROPERTIES



Legend

1 30-45 or 50 million	5 1-2.9 million
2 10-20 million	6 300-999 thousand
3 6-9.9 million	7 100-299 thousand
4 3-5.9 million	▲ 50-99 thousand

Note: Valuations represent insurable values.

Figure 1

in value from a low of $100 for a garbage-can shed at Warm Springs State Hospital, to a high of $6,339,555 for the State Capitol Building. When the contents of the State Capitol Building are included, it has a total value of $7,117,332.

An issue of increasing concern among the insurance companies presently insuring Montana's buildings is that individual risks or buildings are becoming quite large.[13] The state now has approximately thirty-five buildings that are valued at over $1 million each. Interconnecting buildings have also caused increasing concern. For example, at the University of Montana there have been two instances where three dormitories have been connected, creating a large building or "fire area" valued at over $1 million. Similarly, at Warm Springs, several buildings have been joined by corridors thus combining several small risks into one large risk.

Increasing concentration and therefore, enlarging fire area sizes, however, does not necessarily imply that fire poses the greatest risk of loss. Increased fire area sizes mean that the dollar loss of a fire in one of the large areas could be substantial. The major concern lies

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[13]The Montana Fire Rating Bureau defines the area in which a fire is likely to spread as a fire area.

not in the peril of fire, but in the peril of earthquakes. To a lesser degree, concentrations are a concern because of the vast amount of dollar values that are located at the state's universities which are susceptible to student disorders.

Explosion is another peril that attacks concentrations of values. Concentrations of values such as those at Montana's universities where central heating plants are used would be of primary concern. Explosions can be catastrophic in nature in that the whole building can easily be destroyed.

Presently very little is known about the values that would be lost due to any one explosion. Before any conclusions can be drawn as to the possible loss the exact exposure must be determined. For purposes of this report it is important that recognition be given to the peril of explosion.

The concern for earthquakes is significant because 95.7 percent of all state-owned buildings and their contents are concentrated in fifteen locations. Furthermore, it has been revealed that 80 percent of the values are located within 100 air miles of Anaconda in southwestern Montana. The southwestern section of the state lies in one of the highest seismic risk areas in the

United States.[14] In relation to earthquakes in Montana, one authority stated shortly after the 1959 quake that, "Montanans seem to forget it, . . . but this state gets a perceptible jolt about every two years, and a real wallop once every decade. Since seismograph records have been kept, truly severe earthquakes have hit Montana in 1925, 1935, 1947 and now 1959."[15]

V. PREMIUMS AND LOSSES

During the period from July 1, 1951 to December 30, 1968, Montana paid approximately $3 million for fire and extended coverage insurance. Losses recovered from insuring companies for the same period totaled $1,330,451. The overall average ratio of losses recovered to premiums paid was approximately 45 percent. As Table V indicates, the yearly loss ratios ranged from 6.0 percent in 1960 to 133.9 percent in 1963.

A study of an insurance program is greatly facilitated by comparison of the trends in insurance-in-effect, premiums paid, and losses recovered. Figure 2 illustrates the spread between premiums and losses since 1942. As

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[14] Seismology-Responsibilities and Requirements of a Growing Science, Part I (National Academy of Sciences, Washington, D.C., 1969), p. 11.

[15] Samuel W. Matthews, "The Night the Mountains Moved," National Geographic, Vol.117, No. 3 ,(March, 1960), p. 355.

TABLE V

PREMIUMS, LOSSES AND LOSS RATIO
STATE OF MONTANA

July, 1951 to December 31, 1968

Year	Premiums Paid[a] ($)	Total Losses[b] ($)	Loss Ratio (Losses/ Premiums) (%)
1951 (July-December)	$ 39,884	$ 9,126	22.9
1952	79,768	95,517	119.7
1953	79,768	6,389	8.0
1954	98,138	87,959	89.6
1955	116,509	66,557	57.1
1956	116,509	12,184	10.4
1957	130,730	14,288	10.9
1958	144,953	72,353	49.9
1959	144,953	109,102	75.3
1960	193,730	11,723	6.0
1961	242,509	68,836	28.4
1962	226,722	134,231	59.2
1963	210,937	282,541	133.9
1964	210,937	26,492	12.6
1965	231,142	175,257	75.8
1966	251,349	70,781	28.2
1967	251,349[c]	38,321	15.2
1968	251,349[c]	48,795	19.4
Total	$3,021,236	$1,330,452	

[a]Yearly premium payments were derived by averaging fiscal-year payments over a three-year period and then shifting the basis to a calendar year.

[b]Losses not covered by state policies are excluded from these figures.

[c]Estimated.

Source: State Board of Examiners, Unpublished Loss and Premium Reports, July 1, 1951 to December 31, 1969.

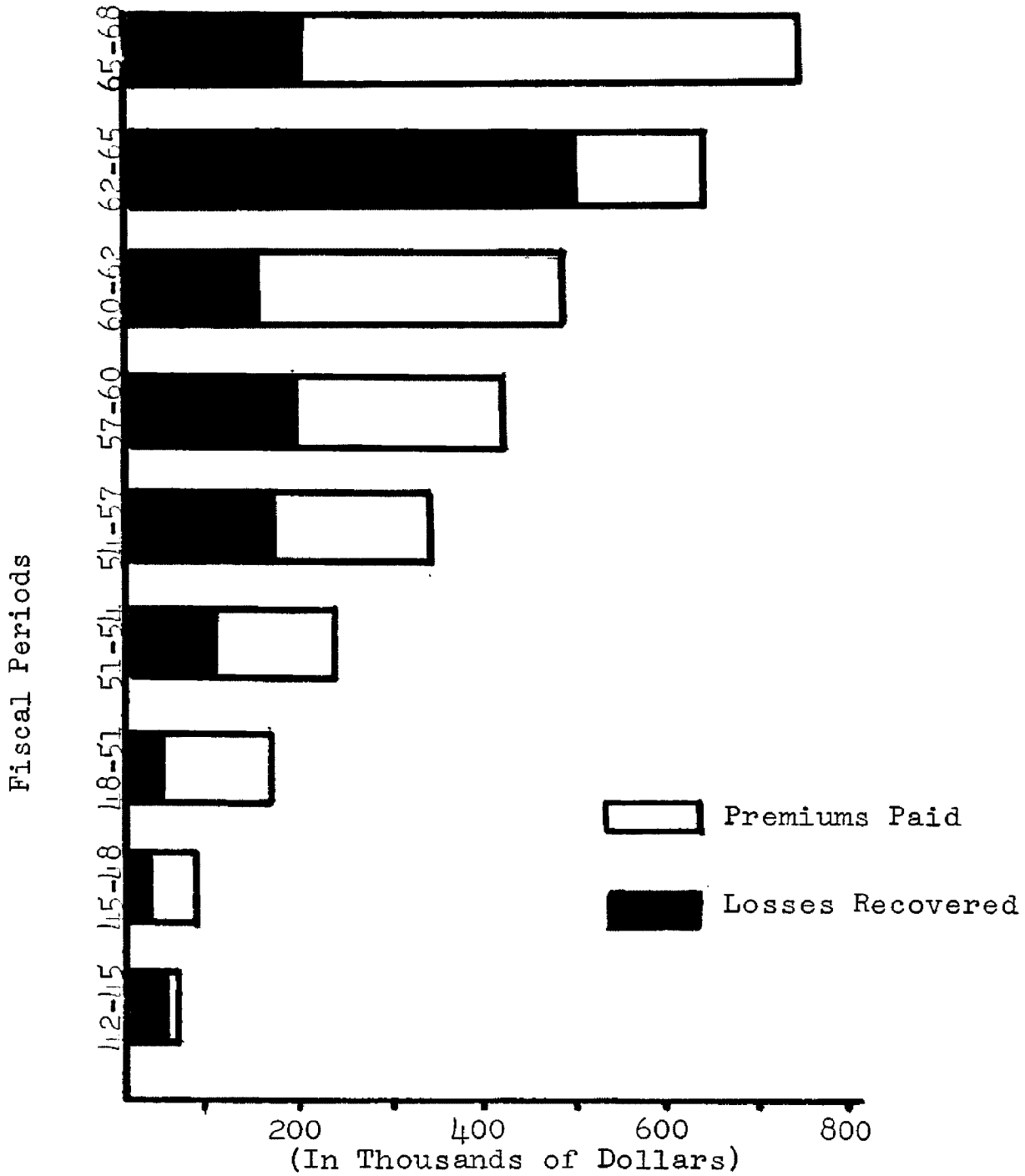

FIGURE 2

STATE OF MONTANA
PREMIUMS PAID AND LOSSES RECOVERED
Fiscal Periods, 1942 to 1968

Source: State Board of Examiners Unpublished Data, 1942-1968.

noted in Figure 2 premiums have always exceeded losses recovered. Except for the period 1962-1965, it appears that losses have been quite stable, and therefore, predictable. The high loss ratio of the 1962-1965 period was largely the result of one large $241,444 loss. Without this one loss, the loss ratio would have been approximately 50 percent as opposed to the actual of 78 percent. Losses for the period would have been about $250,000.

Table VI indicates that fire and wind have been the major perils resulting in losses to state buildings. Since 1951 there have been 359 losses sustained by these buildings. Fire has caused 162 or 45 percent of the losses and 110 or 31 percent have resulted from wind or windstorm. Hail caused 15.1 percent of the losses, explosion 2.6, lightning 1.7, while smoke, riot and vehicle damage each accounted for about 1 percent of the total. Losses to state property in Montana have generally been quite small. As Table VII illustrates, over half, 56.8 percent, of the loss claims have been under $500. Nearly 90 percent of the 359 loss claims have been under $5,000.

In comparison to the large number of small losses there have been only a few large losses. The eight largest losses account for nearly 50 percent of the total loss claims. Similarly, four of these eight losses account for 37 percent of all dollar values lost.

The state has been fortunate that a few losses make

TABLE VI

NUMBER OF LOSSES ON STATE-OWNED PROPERTIES
BY TYPE OF LOSS[a]

1951-1968

Year of Loss	Total No. of Losses	Fire	Wind	Hail	Explosion	Lightning	Smoke	Riot	Vehicle	All Other[b]
1951 (July-Dec.)	7	4	2	--	1	--	--	--	--	--
1952	18	11	3	1	2	--	--	--	--	1
1953	13	7	5	1	--	--	--	--	--	--
1954	14	10.5	1	1	--	0.5	--	--	--	1
1955	21	5	5.5	7	1	--	1	--	--	1.5
1956	21	12	8.5	--	--	0.5	--	--	--	--
1957	15	9	4	1	--	--	--	1	--	--
1958	24	2	10.5	8	1	1	--	--	1	0.5
1959	27	6.5	13.5	1.5	1.5	--	--	1	1	2
1960	14	4	8	1	1	--	--	--	--	--
1961	39	17	11	11	--	--	--	--	--	--
1962	38	8	16	11	--	1	1	--	--	1
1963	22	14	2	3	--	2	1	--	--	--
1964	8	4	2	1	--	--	--	1	--	--
1965	17	6	5	5	--	1	--	--	--	--
1966	18	12	3	2	--	--	--	--	1	--
1967	20	16	4	--	--	--	--	--	--	--
1968	23	14	6	--	2	--	1	--	--	--
Total	359	162	110	54.5	9.5	6	4	3	3	7

[a]When losses resulted from more than one cause, one-half of the loss was shown under each cause. Losses not covered by the policies are excluded from these figures.

[b]Includes losses due to vandalism, water, glass, and fire and smoke, and those losses reported without the cause being listed.

Source: State Board of Examiners, Unpublished Loss Reports, July 1, 1951 to December 31, 1968.

TABLE VII

NUMBER OF LOSSES ON STATE-OWNED PROPERTIES
BY SIZE OF LOSS[a]

1951-1968

Year of Loss	Total Number of Losses	Under $500	$500-$999	$1,000-$4,999	$5,000-$9,999	$10,000-$19,999	$20,000-$49,999	$50,000 and Over
1951 (July-Dec.)	7	4	2	--	1	--	--	--
1952	18	12	--	4	--	--	2	--
1953	13	10	--	3	--	--	--	--
1954	14	7	2	4	--	--	--	1
1955	21	12	3	2	1	2	1	--
1956	21	17	1	3	--	--	--	--
1957	15	9	2	3	1	--	--	--
1958	24	11	2	7	2	1	1	--
1959	27	20	3	2	--	1	--	1
1960	14	10	1	3	--	--	--	--
1961	39	26	2	7	2	1	1	--
1962	38	21	4	8	1	2	2	--
1963	22	11	2	6	1	1	--	1
1964	8	2	1	4	--	1	--	--
1965	17	7	--	5	--	2	2	1
1966	18	4	4	7	1	1	1	--
1967	20	12	4	3	--	--	1	--
1968	23	9	5	6	2	1	--	--
Total Number	359	204	38	77	12	13	11	4

[a]Losses not covered by the policies are excluded from these figures.

Source: State Board of Examiners, Unpublished Loss Reports, July 1, 1951 to December 31, 1968.

up a large percent of the total dollars lost. Considering that the yearly average amount of values insured since 1951 have been over $100 million, the largest losses have not been severe. A loss for $241,444 at the State Training School caused by fire in 1963 and a loss of $90,000 at Montana State University resulting from an explosion in 1959 have been the state's two largest losses.

Montana's loss experience may be either stable or unstable depending on the comparisons made. One authority suggests that yearly losses should deviate no more than 15 percent from a three-year loss average before self-insurance was attempted. Montana's yearly deviations from the respective three-year averages are significantly greater than 15 percent (Table VIII). In only four years is the deviation within the 15 percent range.

In absolute terms Montana's loss experience has been quite good. When losses are compared to the state's budget they appear quite small. In 1963, the largest loss year on record, losses only amounted to .19 percent of the state budget. Losses made up only .01 percent of the budget in the following year. Similarly, the largest loss ever of $241,444 in 1963 was less than .2 percent of the values insured.

A good loss record could invalidate the 15 percent deviation rule. For example, an average that is quite large can be compared to large variations from this average

TABLE VIII

TOTAL AND AVERAGE LOSSES ON STATE-OWNED PROPERTIES BY YEAR

1951-1968

Year of Loss	Total Number of Losses	Total Loss	Three-Year Averages		Percentage Deviation From Three-Year Average	
			Number	Amount[a]	Number	Amount
1951 (July-Dec.)	7	$ 9,126	--	--	46.2%	75.3%
1952	18	95,517	13	$ 37,000	38.4	158.2
1953	13	6,389			0	82.7
1954	14	87,959			26.3	57.1
1955	21	66,557	19	56,000	10.5	18.8
1956	21	12,184			10.5	78.2
1957	15	14,288			31.8	78.0
1958	24	72,353	22	65,000	9.1	11.3
1959	27	109,102			22.7	67.8
1960	14	11,722			53.3	83.7
1961	39	68,836	30	72,000	30.0	4.4
1962	38	134,230			26.7	86.4
1963	22	282,541			37.5	75.5
1964	8	26,492	16	161,000	50.0	83.5
1965	17	175,257			6.2	8.8
1966	18	70,731			10.0	33.5
1967	20	38,321	20	53,000	0	27.7
1968	23	48,796			15.0	7.9
Total	359	$1,330,451				

[a]Rounded to the nearest thousand.

Source: State Board of Examiners, Unpublished Loss Reports, July 1, 1951 to December 31, 1968.

and very little percentage deviation is noted. Consider an average loss record of $1,000,000 for a three-year period. Yearly losses can have a range of $150,000 and be within the 15 percent range. If the average is quite small, around $75,000 as in Montana, the loss range can only vary $5,650 from the average and still remain in the 15 percent range.

Losses, actual and anticipated finally affects rates, where insured perils are unchanged. The present system of insuring state-owned properties reflects this truth. Figure 3 compares insurance-in-effect with insurance premiums paid (the cost of insurance). Prior to 1968 the spread between the insurance-in-effect and premiums paid appears favorable. This means that unit cost of insurance was decreasing. However, for the 1968-1971 policy period the state is experiencing a reversal of that trend. That is, the percent increase in insurance premiums is greater than the percent increase in insurance-in-effect.

VI. FINANCIAL CONDITION OF MONTANA

A sound financial condition has been indicated as one criterion that a holder of values should satisfy in order to carry out successfully a self-insurance program. A strong financial position is important because it is an indication of a holder of value's ability to endure losses. Therefore, before recommending whether or not self-insurance

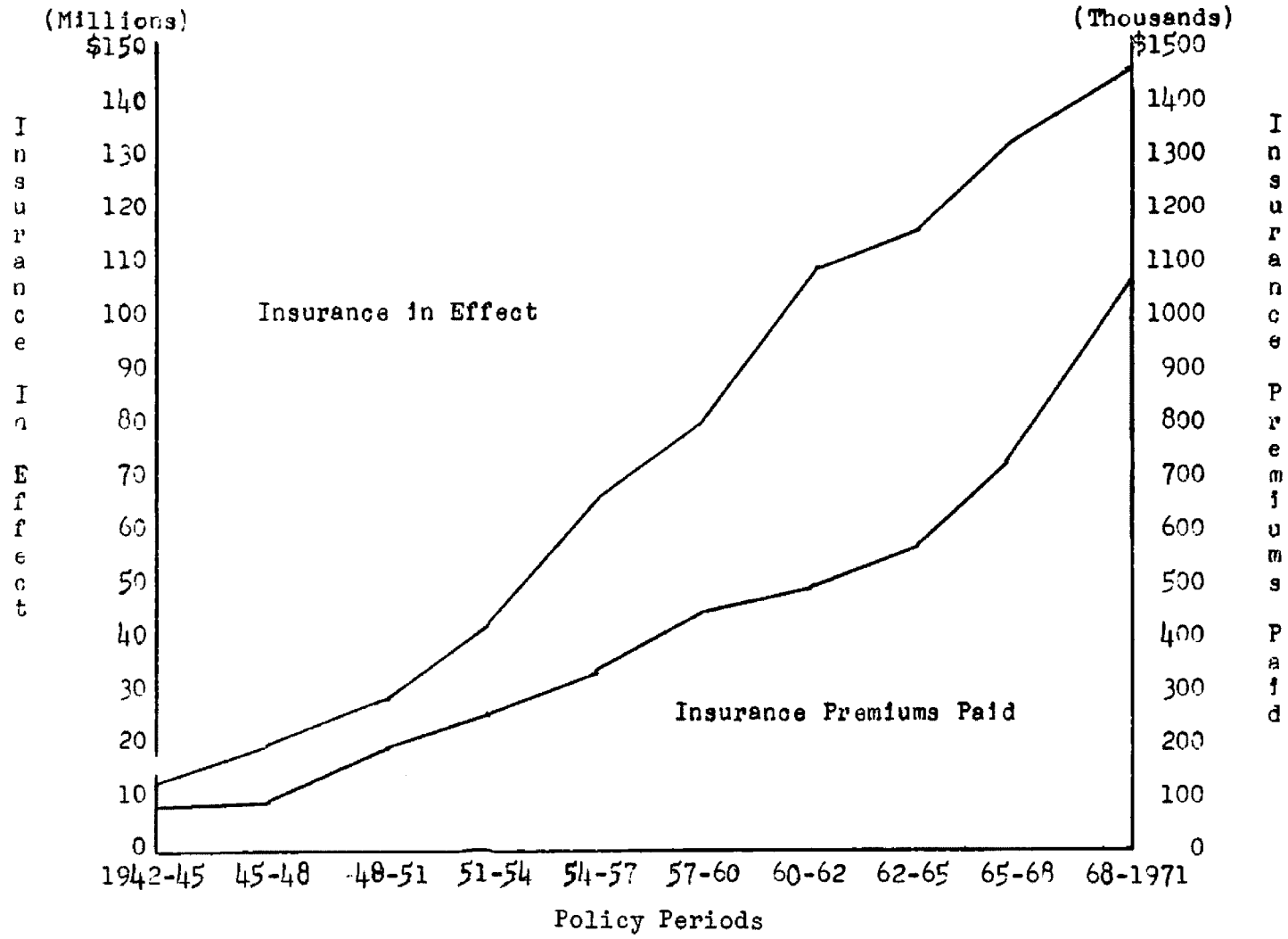

FIGURE 3

TREND BETWEEN INSURANCE IN EFFECT AND PREMIUMS PAID

Source: State Board of Examiners Unpublished Data, 1942-1968.

would be feasible and desirable for Montana, its financial position should be examined.

An accurate description of the financial soundness of Montana's government is not given in a simple statement. To determine the financial condition of the state would require a thorough study which is beyond the scope of this paper. The financial condition of the state is an issue that is commonly discussed and rarely agreed upon . It it is an issue that is never completely resolved.

As noted above, the financial condition of a self-insurer is important because it is an indication of his ability to endure losses. This ability is primarily needed when a self-insured state experiences an extraordinary loss. The loss would be extraordinary if it were not reinsured or if there were insufficient reserves with which to replace the property lost.

In such an instance, there are two sources from which the state would have to obtain the necessary funds. A state might get the funds from (1) issuing new debt or (2) by diverting funds from cash and near cash reserves of the state.

Accordingly, Montana's financial condition as it regards self-insurance, depends a great deal on how flexible its debt structure is--that is, how easily can new debt be issued. The amount of cash reserves the state has which could be diverted to replace losses is also a determinant.

Legislatures in most states have limitations on their

authority to borrow. In Montana, borrowing proposals must be (a) enacted by the legislature, and then (b) approved by popular referendum.[16] Further, in Montana the legislature meets only biennially and the capital expenditure program is fully committed, making cash reserves tight. Considering these various aspects, Montana's financial flexibility as it pertains to self-insurance, in principle, appears limited.

To further examine the state's financial position as it pertains to a self-insurance program, a comparison of the finances of nine states currently having successful programs can be made. Such a comparison is made on the assumption that their finances would establish a norm. Pertinent state finances would be those directly affecting debt flexibility and cash reserves. These would primarily include: total revenue, per capita taxes, per capita personal income, and limitations on debt flexibility in the various states.

When ranked by revenue size Montana ranks forty-fifth.[17] The nine states engaged in self-insurance, excluding North

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[16] James W. Maxwell, Financing State and Local Governments, (Rev. Ed., Washington, D.C.: The Brookings Institution, 1969), p. 194.

[17] U.S. Bureau of the Census, Statistical Abstract of the U.S.: 1969, Table No. 598 (90th Ed., Washington, D.C.: Government Printing Office, 1969), p. 420.

Dakota, ranked somewhat better: Alabama 22; Florida 11; Georgia 17; Kentucky 23; North Carolina 13; North Dakota 41; Oregon 29; South Carolina 28; and Wisconsin 10. Similarly, only North Dakota and Vermont have less assessed property subject to general property taxation than Montana.[18]

Revenue ranking and property subject to taxation lose importance when the amount of risks insured and per capita figures are considered. Values insured in the nine states are considerably greater than in Montana. Wisconsin has the most values--nearly $2 billion with North Dakota insuring the least, at $305 million.[19] Montana presently has only $176 million. Only Wisconsin and North Dakota have more general revenue per capita than Montana.[20]

Per capita debt outstanding, coupled with per capita personal income, would be the major determinants of debt flexibility if the people were to vote on an additional debt referendum. North Carolina, North Dakota and South Carolina are the only states of the nine with less per capita state and local government debt than Montana.[21]

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[18] Ibid., Table 615, p. 427.

[19] Data collected from the nine self-insured states.

[20] U.S. Bureau of the Census, loc.cit.

[21] Ibid., Table No. 596, p. 418

Similarly, only three states, Florida, Oregon, and Wisconsin, have more personal income per capita than Montana.[22]

Personal taxes would also be an important consideration in any debt increase as these taxes would more than likely be affected. North Dakota is the only state in which more personal income goes to state and local governments than in Montana. However, when "charges" are eliminated and only the "big three" direct personal taxes--income, property and general sales tax--are considered, Montana is well below the national average because of the absence in the state of a sales tax.[23]

Finally, borrowing authority in Kentucky, North Carolina, and South Carolina is similar to that in Montana, i.e., enactment by the legislature and approval by popular referendum. In the other five states debt financing is less flexible than in Montana. In these states borrowing is prohibited except as authorized by a constitutional amendment.[24]

It appears safe to generalize that on margin Montana seems to fare reasonably well in comparison with other states

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[22]U.S. Department of Commerce, Survey of Current Business, (Washington, D.C.: U.S. Government Printing Office August, 1969), Vol. 49, Number 8, Table 2.

[23]Daniel J. Foley, "State's Taxpayers Pay $16 over U.S. Average", Daily Missoulian, February 27, 1970, p. 1.

[24]Maxwell, loc. cit.

in its ability to react to the need for funds to meet the emergency brought about by destruction of its properties. Yet, the research reveals that no criteria exist which makes the self-insured state comfortable in the knowledge that these standards have been met. Furthermore, financial capacity is a difficult criterion to judge, particularly where a governmental unit is involved.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Before making any recommendations as to whether or not the state should attempt to self-insure, it would seem advisable to summarize what has been covered up to this point. At the outset an appendix was introduced. This appendix gives the pros and cons of the emotional issues frequently heard in relation to self-insurance. A discussion of risk and uncertainty was undertaken to clarify the need for risk treatment. It was concluded that "risk" is an object or measurable phenomena and "uncertainty", a subjective degree of belief or state of mind. Risk is measured by probability, i.e., the probability that a loss will occur.

Holders of values, upon establishing that a risk exists, have several alternative methods of risk treatment available to them. As indicated, one of the most commonly used methods has been transfer or insurance. A holder of values usually protects himself against the chance of loss through insurance. It was pointed out that a particular risk will be the same for different individuals. No matter how much insurance is purchased, the numerical probabilities will not change. The state of uncertainty varies for each individual according to the information available on the risk and how he uses and interprets the information.

Uncertainty will then decrease for the individual through the purchase of insurance. Risk, though not changed, will be transferred to the insurance company.

Another method of risk treatment, the one with which this paper is primarily concerned, is that of risk retention. Self-insurance is a formalized method of risk retention, so formalized that if correctly structured and administered meets the requirements of insurance. The criteria and prerequisites of self-insurance were presented in order to construct a thorough definition. A very important feature of a state self-insurance plan was said to be the actual writing and administration of the law.

Next, there was a discussion and review of the existing state self-insurance programs. Specifics of the different programs were given to acquaint the reader with some of the operational features of the various plans. It was discovered that these existing plans have been generally successful.

Montana's past and present insurance programs were outlined. Montana had a self-insurance law in 1935 that failed for various reasons. In 1936 the self-insurance program was abolished by a public referendum and the state has since used commercial insurance. It was noted that state-owned property in Montana is presently protected against the perils of fire and those perils included under extended coverage. Present insuring companies are Home and

Uniguard, which write the current policies and then reinsure with associate companies. The present policies are of the blanket type, such that all state-owned buildings and their contents must be insured. A majority, 95 percent of the property, is included under the PIP Form which was inaugurated in 1962. The PIP Form is used for public and institutional property, and results in considerable savings.

Property values, along with losses and premiums for several years, were analyzed. The value of all state-owned buildings and their contents were determined to be $176,419,910. Property values were also found to be either very large or quite small. It was revealed that 95.7 percent of the state's values were located in fifteen cities. Of the 177 locations where state property is located, 147 contained less than $100,000 of insurable values. It was also noted that 80 percent of the state's property was located within 100 air-miles of Anaconda.

Losses, with the exception of one period, have been small and fairly predictable. Until 1968 the rate of increase of insurance-in-effect was slightly greater than the rate of increase in insurance premiums. For the 1968-1971 period it appears that this trend will be reversed, i.e., the rate of increase in premiums will be greater than the rate of increase in insurance-in-effect.

Earthquakes and explosions were determined to cause considerable concern. Many of the state's building values

are located in southwestern Montana which is an area of high earthquake risk.

Montana's financial condition, in principle, was determined to be quite inflexible. However, when compared to the finances of the nine states currently having self-insurance programs, Montana appears to have a comparative adequate financial condition.

In order to make final recommendations about self-insurance as it applies to Montana, conclusions must be made as to whether or not the prerequisites can be adequately met. Furthermore, if the prerequisites are met, would self-insurance be the best solution to the insurance needs?

Mass, homogeneity and independence are the essence of an adequate exposure distribution--one of the most important prerequisites of self-insurance. An adequate exposure distribution also reflects a stable loss experience. For Montana the question is, does the state have a large number of homogeneous exposure units that are fairly independent, and which reflect a stable loss experience?

Viewed as independent units, there are over 1,700 state-owned buildings in Montana. If each of the buildings was sufficiently independent, the criterion of large numbers would appear to be satisfied. However, in terms of fire, areas, there are not 1,700 independent exposure units. As previously revealed, state-owned buildings are somewhat concentrated in 177 locations. Each of the 177 locations

has one or more fire areas, thus putting the actual number of exposure units somewhere between 177 and 1700. To determine the exact number of exposure units would require a great deal of research that is beyond the scope of this study. Conservative calculations sufficient for the purposes of this paper put the number of exposure units roughly within the range of 500 to 600 units.

Assuming that there are between 500 and 600 independent exposure units, and that this is sufficient to satisfy the criterion of large numbers or mass, there is still the factor of homogeneity. Are the exposure units fairly equal in value? State buildings in Montana are polarized to a great extent. Building values are either quite low or relatively high. There are roughly thirty-five individual buildings valued over $1 million, which together account for a significant portion of the total state valuation of $176,419,910. These larger units account for only a minority, less than 20 percent, of the fire areas. This indicates that there are probably a sufficient number of smaller fire areas in the $50,000 to $100,000 range to satisfy the adequate exposure criterion for these smaller values.

A stable loss experience, as indicated earlier, is a reflection of an adequate exposure distribution. Loss ratios since the late 1940's have been fairly stable with the exception of the 1962-1965 period. During this period

one loss of $241,000 raised the loss ratio for that period to 80 percent.

Thus, Montana meets the prerequisites of adequate exposure distribution to a limited extent. First, when "fire areas" are considered, rather than in terms of single buildings or locations, there are probably around 500 to 600 exposure units. Secondly, about 80 percent of these fire areas are homogeneous and these are valued quite low. Thirdly, when smaller values of $50,000 to $100,000 are considered and a few large losses are eliminated, the loss experience is stable and, therefore, predictable.

Another important prerequisite is that the holder of values must be in sound financial condition before attempting to self-insure. A sound financial condition is needed primarily to absorb extraordinary losses. Thus, the holder of values that cannot afford to pay commercial insurance premiums is not advised to self-insure. In principle, Montana's financial condition is somewhat inadequate. The debt structure is quite flexible and there is a fully committed capital-expenditure budget making cash reserves difficult to divert. However, assuming that the nine states with successful self-insurance programs establish a norm for self-insurance finances, Montana's position is comparatively favorable.

The importance of the above prerequisite can be discounted to an extent. As noted, the primary need for a

sound financial condition is for absorbing extraordinary losses. When a self-insurance law is adequately written and reinsurance is properly used, extraordinary losses and financial strains would be virtually impossible. Thus, considering that the state's finances are reasonably adequate, and reinsurance can alleviate extra-ordinary losses, Montana appears to meet this prerequisite.

Another prerequisite that has been advocated by scholars of self-insurance is the need for adequate accurate and relevant records. Statistics are needed in making projections of future risks and in predicting losses. The State Board of Examiners have kept fairly good records on past losses. The Montana Fire Rating Bureau has been compiling a record of individual building rates which should be published in 1971. In the past, many records needed for self-insurance purposes have not been kept. For example, the number and size of actual fire areas needed in accurately describing the exposure distribution have never been determined. Similarly, data for determining the risk of explosion at each of the fifteen larger locations needs to be up-dated. Records on one of the most important perils that threatens the state's buildings--earthquake--has practically been ignored. Overall though, records not readily available at present, appear to be obtainable, if not from state sources, then from an independent source such as the Montana Fire Rating Bureau. Accurate statistics

on the peril of earthquake would probably require extensive research.

The last prerequisite that needs consideration concerns the ability to continue the services provided by insurance companies which would be forgone if the state resorts to self-insurance. This prerequisite seems to be the one that could be most completely met by Montana. Along the lines of prevention and safety engineering, insurance companies presently insuring state buildings hire the services of a professional safety engineer. Such an engineer could be hired directly by the state. The present insuring companies also require a periodic inspection and report to be made by the head of each state agency or institution using state buildings. A practice such as this could be continued by state personnel without the aid of insurance companies. Adjustment services are also available to the state. The General Adjustment Bureau, whose services are primarily used by commercial insurance companies, would provide the state with similar services.

Further services, such as the management of the fund, payment for losses, proper coverages, collection of premiums, appraisal procedures, and other administrative duties, can be adequately provided by state personnel. Any argument against the state's ability to perform these duties and provide these services is based on the premise that governmental activity is inefficient when contrasted with private

enterprise. If the self-insurance law is adequately written, and consciencious personnel are given the job of administering it, there is no reason that the state cannot provide these services efficiently and adequately. Those services that cannot be provided by the state can be purchased from outside sources.

Montana's present program of commercial insurance is not free of criticism, nor is it recommendable for future use. Present insurance policies require that all state-owned buildings be insured. There are many low-valued buildings such as garbage-can sheds and livestock sheds that should not be insured. The loss of such buildings would not cause the degree of hardship as would the loss of a hospital. A limit should be set under which values lower than a certain amount should not be insured. For example, Florida does not insure values of less than $500. However, in most cases these low-valued units serve a useful puspose and must be replaced when lost.

Present insurance policies do not allow for any deductibles, except under certain circumstances, and then the deductible is a minimum. No insurance is provided for earthquake, which probably represents the largest potential loss of any peril. Lastly, the rates of commercial insurance have been steadily rising. The insurance companies can justify these increases, but the state might be able to alleviate some of the increases through a revised

insurance program.

As noted, the present insurance program is not recommended for future use. However, the state does not fully meet the prerequisites of self-insurance; thus, full self-insurance is not recommended. Rather, a combination of commercial insurance and self-insurance would be advisable. The prerequisites of self-insurance are met to the extent that a program of partial self-insurance would be beneficial. Partial self-insurance could be initiated through the use of deductible commercial insurance.

Table IX reveals the various savings the state would have incurred had various deductibles been used with the insurance program that was followed since 1952. Table IX also reveals that the smaller deductible of $1,000 would have resulted in the most savings. The large savings from the smaller deductible is a reflection of the small losses which have occurred. Had the state used full self-insurance since 1942, savings would have been approximately $1.8 million, less any expenses that would have resulted. Using as expenses 10 percent of premiums, which is a higher expense rate than the average used by the states currently self-insuring, the state would have saved $1.8 million less $320,000 or approximately $1,480,000.

Partial self-insurance is the name given to the recommended insurance program rather than deductible commercial insurance because a fund is needed from which to pay

TABLE IX

ESTIMATED SAVINGS FROM VARIOUS DEDUCTIBLES

MONTANA

July 1, 1951 to December 31, 1968

	Deductible Per Occurrence				
	$1,000	$5,000	$10,000	$25,000	$50,000
Total Premiums	$3,021,236	$3,021,236	$3,021,236	$3,021,236	$3,021,236
Deductible Credit	18%	22%	25%	31%	35%
Gross Savings (Credit times Premium)	$ 543,822	$ 664,672	$ 755,309	$ 936,583	$1,057,433
Less Deductible Losses Paid by State	179,531	437,773	600,159	784,315	1,032,757
Estimated Net Savings	$ 364,291	$ 226,899	$ 155,150	$ 152,268	$ 24,676

Source: State Board of Examiners, Unpublished Loss and Premiums Reports, July 1, 1957 to December 31, 1968.

Correspondence, Home Insurance Company, February, 1970.

the deductible losses. In the past the primary reason that a blanket policy with no substantial deductibles has been in use is because there have been no funds available from which to replace the smaller losses. Since 1951 nearly 58 percent of the losses have been under $500. If the principles of self-insurance are followed, a fund would be created and proper administration would be provided for reimbursing these smaller losses. If this were the case, Montana would not have to dollar swap with the insurance companies and savings could be enjoyed by both parties.

By the use of partial self-insurance in which smaller risks are retained, a formalized set of records could be started. Through these records and further studies such as this one, long-range planning for insurance could be initiated. Long-range insurance planning needs to be undertaken by the state. Long-range planning could help answer several questions. What will the insurance situation in the state be in ten or twenty years? Will commercial insurance become more and more difficult for public schools to obtain? Will these schools then turn to the state for insurance? Will the school demonstrations and riots continue to cause increasing rates? Other questions pertaining to the possible ways in which the concentrations of buildings in the fifteen locations can be altered should also be considered.

In closing, Montana should initiate a partial

self-insurance program. This would amount to retaining the present insurance program, but with a likely deductible of $1,000 to $10,000. It is important to refer to the program as partial self-insurance because of the need for establishing a fund and conducting the plan as self-insurance. It cannot be over-emphasized that the success of a partial self-insurance program will greatly depend on the drafting of legislation authorizing the plan and outlining administrative procedures. Partial self-insurance would not only benefit the state through savings, but as a hedge against an uncertain commercial insurance market. Though not so prevalent in Montana as in many other states, many educational units, due to large fires and student disorders, are faced with inflated insurance rates and an often-reluctant commercial market. If these trends continue, and a self-insurance plan becomes mandatory in the future, the state will benefit tremendously by initiating such a plan now, when gradual adjustment is possible.

APPENDIX I

ARGUMENTS FOR AND AGAINST SELF-INSURANCE

Historically, many discussions and studies of self-insurance have been based on emotion rather than logic and fact. As noted in the section "Definition and Criteria of Self-Insurance", a major reason for the confusion that surrounds the topic is the lack of information and study on it. Accordingly, this appendix is devoted to presenting both sides of the common issues of self-insurance. An attempt is made to familiarize those who are frequently subjected to biased and inadequate information on both sides of the issue. It should be noted that a genuine effort has been made to present equally the pros and cons of each argument without slanting the presentation one way or another. A "middle of the road approach" has been taken.

The more common arguments center on six issues: savings, management of the fund and other services, self-insurance as insurance, catastrophe losses, free enterprise, and political issues.

I. SAVINGS

Opponents argue that "self-insurance funds provide no guarantee that insurance costs would be reduced, since their limited operations could not expect to realize the competitive economies of the vast private insurance

companies."[1] More specifically, costs would not decrease because: (1) the pressure from the companies for fire prevention would be removed, and therefore fire losses would increase; (2) no single state would have a fund large enough to realize economies of management--either in investing the funds or in handling the claims; (3) the state would forego premium taxes; and additional offset to any potential savings; and (4) costs to taxpayers of establishing and maintaining the fund far exceed the illusory savings of insurance commissions and the like. As evidence, those arguing against self-insurance point out that there are no known examples of tax reductions which can be traced to the implementation of a self-insurance program. "On the contrary, the record is filled with cases where heavy additional taxes have been levied because of uninsured losses to government property."[2] Furthermore, reinsurance charges will be higher because transfer costs (commissions, etc.) must be included, unless the entire line (insurance plus reinsurance) is written by the company or associations. Thus, even though the state may save transfer costs on that portion of the insurance carried by the self-insurance fund,

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[1]George S. Hanson, State and Municipal Self-Insurance (New York: National Association of Insurance Agents, 1954), p. 13.

[2]"At Your Own Risk, The Dangers and Delusions of Self-Insurance for Local Government Properties," The Journal of Insurance Information, Vol. XXVIII, No. 1, January-February, 1967, p. 3a.

savings are unlikely unless the entity operates its retention program as efficiently as an insurer could.[3]

Proponents of self-insurance maintain that administrative costs are not necessarily higher: "That argument implies that all governmental activity is inefficient, while all activities of private enterprise are efficient."[4] If all activities of private enterprise are efficient, then the self-insurance funds operated by private enterprise must also be managed efficiently; if that is true, then a self-insurance program operated by a governmental unit could also be efficient. The argument concerning greater losses presumes that there are no prevention measures; yet, all nine states currently involved in self-insurance, put a great deal of emphasis on loss control.[5] It is also possible to hire consultants for the purpose of implementing proper prevention practices.

In reply to questions of additional burdens for taxpayers, those favoring self-insurance proport that the fund is built up gradually and from money that would have gone to purchase insurance, so there are no additional

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[3]C. Arthur Williams, Jr. and Richard M. Heins, Risk Management and Insurance (New York: McGraw-Hill Book Co., 1964), p. 155.

[4]L.B. Strickler, "In Defense of Funded Self-Insurance for State Buildings and Contents" (Unpublished paper written at Oregon State University, Corvallis, Oregon), 1969.

[5]Ibid.

burdens. In examining this question, Strickler found that even if the funds were established on a one-shot basis, the levy in seven of the nine self-insuring states would have equalled only about 1 percent of the annual revenue collected in those states.[6]

The possible savings of self-insurance is ultimately determined by comparing the expense ratio required by insurance companies with that of a state operated self-insurance fund. The following example is often used to verify potential savings:

TABLE X

COMPONENTS OF INSURANCE PREMIUM EXPRESSED AS A PERCENTAGE OF A PREMIUM DOLLAR*

Tax Expense	2.7%
Loss Adjustment Expense	4.8
Acquisition Expense	27.1
General Expense	8.2
Profit and Contingency Expense	6.5
Total Expenses	49.3%
Direct Losses	50.7
Total	100.0%

*Figures were calculated from averages for 553 mutual and 1,120 stock companies writing fire and extended coverage in 1969 as shown in A.M. Best and Company's Aggregates and Averages, Property--Liability (New Jersey: A.M. Bests Company, 1969), 30th Annual Edition. Some of the figures are percentages of premiums earned, while others represent proportions of premiums written.

[6]Ibid.

It is argued that a state funded self-insurance program could eliminate the tax expense (except that portion offset by the premium tax revenue foregone), the acquisition expense, that portion of general expenses which is for any kind of bureau membership, and that part of the profit and contingency expense which is profit. Other items included in the general expense category, such as home office costs, may also be eliminated by a self-insurance plan. Then, too, if the loss ratio of the state is less than the average used by insurance companies or rating bureaus in establishing rates, additional savings will materialize.

On the point of tax reduction, those favoring self-insurance answer that the inability to identify tax reductions with self-insurance does not necessarily imply higher costs. In fact, the savings from self-insurance may be applied to other governmental activities.

II. MANAGEMENT OF THE FUND AND OTHER SERVICES

Opponents maintain that the proper investment of funds is an important ingredient of any insurance program; since state self-insurance funds are likely to be managed by personnel engaged in other activities, investment funds will be poorly managed.[7] Furthermore, legislators and

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[7] The Journal of Insurance Information, pp. 5a-6a.

administrators are likely to neglect the administrative facets so the entire program will be poorly managed. Another argument commonly made against self-insurance is that the state is automatically denied valuable services, such as administration, engineering, safety planning and specialized counsel, which accompany commercial insurance relationships.

One insurance expert summarized the "neutral" position in this way:

> The self-insurance plan requires careful administration and planning. Someone has to be in charge of investing the self-insurance fund, paying claims, inspecting exposures, preventing losses, keeping necessary records, and performing the many other duties connected with any insurance program.[8]

Just because the administration happens to lie with state employees it does not imply that the administration and management will not be taken seriously. According to one researcher mismanagement has not occurred in the nine states currently operating a self-insurance program. A fund manager is always assigned the task of carrying out the more detailed administrative facts of the plan.[9] Allegedly, states may not need all the services provided by insurance companies; the state may well have experts in these areas, and objections to premium payments which

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[8]Greene, p. 86.

[9]Strickler.

in effect pay for services already existent within state agencies, are certainly legitimate. If the services cannot be provided by state personnel, many are provided through reinsurance programs or purchased from independent agencies.

III. SELF-INSURANCE AS INSURANCE

It is often pointed out that self-insurance is not insurance because it does not involve: (1) a transfer of risk; (2) effective risk selection; (3) proper rating; and (4) an adequate number of risks. This implies that if self-insurance is not insurance, a governmental unit should not use it as a substitute for insurance.[10]

Those defending the self-insurance point of view maintained the validity of such an argument depends upon the definition of insurance. Some insurance authorities do not include transfer, for example, as a criterion of insurance:

> Essentially, insurance is a formal social device for the substitution of certainty for uncertainty through the pooling of risks. It may or may not be a business; it may or may not use the services of statisticians and actuaries; it is always a social device operating on the principles of pooling. . . The insurer may be an unincorporated association, a private corporation, a government, Insurance does not depend upon the legal status of the insured, the source or method of finances, or the application of particular statistical or actuarial techniques.[11]

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[10] Hanson, pp. 12-13. [11] Kulp and Hall, p. 10.

For those who define insurance in terms of pooling, the term self-insurance is not a misnomer, but an accurate description of a process by which uncertainty is reduced or eliminated."[12] The essential point is, however, that in arguing about semantics, the self-insurance opponents lose sight of whether or not the undertaking, whatever it is entitled, would be advantageous to a governmental unit.

Regarding items (2) through (4) above, proponents point out that: (1) a state self-insurance program that lacks sufficient number and diversity of risks can include local governmental property (this has been done by a number of the states currently operating a self-insurance program); (2) reinsurance provides another alternative to risk selection and spread; and (3) many states do rate each risk individually and therefore do follow generally accepted insurance principles.

IV. CATASTROPHIC LOSSES

Those opposing self-insurance argue that a "major fire might necessitate a large legislative appropriation, bond issue, or bankrupt the fund. Where the governmental unit is at or near the debt limitation, destroyed property

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[12]Herbert S. Denenberg, et al. Risk and Insurance (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 79.

might not be rebuilt for a considerable period of time."[13] Usually, state owned property is concentrated, exposing large portions of it to catastrophic losses. For example:

> In January, 1927, a fire in Colorado State Agricultural College at Fort Collins incurred a loss of $105,000. At this time, there still remained $19,000 of insurance carried with private companies and not yet expired, leaving an uninsured loss of $86,000, with less than half that amount in the State Fund to meet it. It was late in 1928 when the final payment of $80,000 to meet the loss was finally approved by the State Auditing Board. During the interim it was impossible to replace the destroyed building and equipment services for which it was created by the taxpayers.[14]

Proponents of self-insurance contend that a self-insurance program is not created instantaneously; that is, there is no dramatic departure from commercial insurance, and, therefore, if the plan had been properly designed, instances like that in Colorado could not have happened. By most definitions, self-insurance is a previously set limit to the amount of risk retention. If such a definition is followed, a risk in excess of the plan's reserves would not be retained. As evidence, the proponents point out that most self-insurers carry catastrophe insurance.

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[13] Hanson, loc. cit.

[14] Ibid.

V. FREE ENTERPRISE

The charge has been made that, "self-insurance constitutes an invasion by government of a field of private enterprise, and such invasion is contrary to public policy and detrimental to the public welfare."[15]

In rebuttal one political scientist notes that:

> This complaint could be made about almost any aspect of governmental activity. Such standard aspects of governmental business as operation of highways and delivery of mail have in the past been handled by private concerns. There is no clear line between functions that should be carried on by private business and those which should be handled by government.[16]

Other supporters of self-insurance argue that this is not a violation of private enterprise since insurance principles are based on the assumption that property owners need protection against those hazards which they cannot afford to bear. Thus, self-insuring losses which the governmental entity can afford, and the purchasing of commercial insurance for catastrophe coverage are quite consistent with basic principles of insurance.

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[15] The Journal of Insurance Information, p. 4a.

[16] Edward V. Schten, Insurance on State Property in Kentucky (Lexington, Kentucky: University of Kentucky Bureau of Business Research, 1960), p. 27.

VI. POLITICAL ASPECTS

Skeptics of State self-insurance programs point out that a low loss ratio for several years will result in large idle funds; these idle funds would, in turn, be an invitation for politicians to divert them to other "pet" projects. If the funds are diverted, there may not be sufficient money to pay for subsequent losses. Another political danger is that of public censure should a self-insurance program fail.

The success or failure of a state self-insurance program depends, to a large extent, on how the law enacting such a plan is written. Generally, existing laws explicitly state what can and cannot be done with the reserves which might accumulate. If a state law is well written, argue the proponents, diversion of the funds would be virtually impossible. The only comment on public censure is that it is immaterial. Public officials accept this same risk in any area of decision making; that risk cannot be used as a justification for indecision.

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