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An operation analysis of the Montana Liquor Control Board

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AN OPERATION ANALYSIS
OF THE
MONTANA LIQUOR CONTROL BOARD

By

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CHAPTER I

INTRODUCTION

For the past several years the Montana Liquor Control Board, hereafter referred to as the Board, has experienced high cost of sales relative to other liquor monopoly states (Table I). Not all monopoly states are comparable in their methods of operations. For this reason, Idaho has been chosen as a state that most nearly approximates the methods of operations employed by the Board to make a valid comparison. The Board's basic problem is the disproportionate amount of costs as a percentage that are taken out of gross receipts compared to other monopoly states. This report hypothesizes that the Board is not contributing the amount of revenue to the state that it could be.

Principally, the purpose of this report is to reveal the reasons for the Board's abnormally high costs and to submit recommendations intended to reduce those costs. Several specific areas of operation will be investigated that, in large part, account for the Board's excessive costs. This report will discuss dollar cost savings that may result and will also elaborate upon possible human factor savings, i.e., better utilization of personnel and the related increase in efficiency of operations.

It may be questioned why a cost analysis report such as this is necessary. The problem of rising costs or excessive costs is always of major concern to any enterprise, including state governments. The liquor business in Montana is "big business"; in fact, it is second only to taxes

TABLE I

COST OF SALES OPERATIONS AS A PERCENTAGE OF GROSS RECEIPTS 1967-1970

STATE	1967	1968	1969	1970
Alabama	5.1	5.0	4.9	5.0
Idaho	4.9	4.8	4.5	4.6
Iowa	6.3	6.4	6.6	6.7
Maine	5.6	5.9	5.8	5.8
Michigan	1.8	1.9	2.0	2.0
Mississippi	.9	1.0	.9	1.0
Montana	8.6*	8.8*	9.2*	8.7*
New Hampshire	4.3	4.6	4.7	4.7
Ohio	3.1	3.2	3.2	3.3
Oregon	4.4	4.2	4.1	4.6
Pennsylvania	8.0	8.4	8.3	9.0
Utah	4.8	5.0	5.0	5.3
Vermont	4.1	4.1	3.9	4.2
Virginia	6.1	6.1	5.9	6.1
Washington	4.7	5.0	5.3	5.6
West Virginia	8.1	8.0	8.2	8.2
Wyoming	1.8	1.8	1.8	1.9

*Montana's Cost of Sales Operations Includes Cost of State Administration Collection.

Source: Distilled Spirits Institute, Public Revenues From Alcoholic Beverages 1967-1970, Washington, D.C.

as a leading provider of revenue to the state.[1] Sales in fiscal year 1971 exceeded $26 million and estimates for fiscal year 1972 could approach $30 million. Revenue to the State amounted to over $12 million[2] and $13 million in 1970 and 1971 respectively.[3]

Montana, following the 1971 Legislature, is in need of additional revenues. State expenditures have become more judicious and in several instances state institutions have had to function with reduced funds.

This problem then indicates more urgently the need to reduce costs of operations and to release these savings to the state's general fund. It is this report's hypothesis that the Board can significantly reduce its costs and in the process release money to the general fund.

The greatest limiting factor that this report will have to contend with is politics. The Board operates under a political patronage system where individuals are employed at the discretion of the political party currently in office. For example, the five member board is appointed by the governor for four-year terms. The Board, in turn, designates the administrator. Employees of the state liquor stores are generally recommended and appointed by the political party's Central Committee. With a change in the political party in power, the Board experiences an influx of new personnel.

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[1]Montana, Office of the Legislative Auditor, Report on Examination of the Montana Liquor Control Board for Fiscal Year Ended June 30, 1969, (Helena, Montana: State of Montana, 1970), p. 5.

[2]Distilled Spirits Institute, Public Revenues From Alcoholic Beverages - 1970, (Washington, D.C., 1970), p. 39.

[3]Montana, Montana Liquor Control Board, Consolidated Statement-All Departments, For Fiscal Year 1971.

It is within this framework that many of the Board's problems manifest themselves. Many dollar savings could be realized by the dissolution of the political patronage system.

This report will cover three specific areas of the Board's operations. Chapter II will study the inventory management system of the Board and related areas comprising good inventory procedures. Chapter III will deal with personnel requirements, while Chapter IV will concern itself with state liquor store operations and their location.

The methodology employed in preparing this report has been a combination of personal interviews, telephone conversations, and examination of related reports and documents. Primary sources of data include records of the Board and the Idaho State Liquor Dispensary, the Legislative Auditor's Report on the Board in 1970, the IBM Study of 1970, and documents provided by the Distilled Spirits Institute.

CHAPTER II

INVENTORY MANAGEMENT PROCEDURES

The Board is plagued by an inventory management problem both in terms of the inventory being excessive and uncontrolled. It is excessive in that there exists no system that optimally determines how many cases of each type of liquor should be on hand in both the warehouse and the liquor stores. It is uncontrolled because the Board is using no rational method to determine "how much to order" and "when to order".

Slow-moving inventory is one of the major reasons for the excessive inventory. During the time frame of the Legislative Auditor's study (1969-1970) seventy-five items of liquor which had an average 18-month time lapse since the last sale were identified.[1] It is not within the scope of this report to identify specific slow movers by date of last sale, but a more approximate method does exist. One has only to examine the annual report of case sales by class and brand compiled by the National Alcoholic Beverage Control Association to determine the number of slow movers. In many cases specific items will be found to have sold only a few cases the previous year. In the succeeding year, again, only a few cases were sold. Yet, the item was stocked for a two year period.[2]

In connection with the problem of inventory control, the Legislative Audit Report recommended that an inventory management program, used

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[1]Auditors, Examination, p. 32.

[2]National Alcoholic Beverage Control Association, Monthly Sales Report on Alcoholic Beverages: Montana (Washington, D.C., National Alcoholic Beverage Association: 1971), p. 5-21.

in conjunction with data processing equipment, be implemented. This was a program that answered the two questions: "how much to order" and "when to order". Implementation of this program would have enabled the Board to control its inventory at optimal levels. Presently, no action has been initiated on this recommendation.

Consequently, the basic need of the Board is to reduce the substantial amounts of capital tied up in inventory, while at the same time providing satisfactory customer service. For example, in 1970 the Legislative Auditors reported that the Board had at least $800,000 tied up in excessive inventory.[3] In that same year IBM reported the Board to have a $2,000,000 average warehouse inventory and that they believed $566,600 of excessive inventory could be deleted.[4]

With these facts in mind, this report proposes four methods that could be employed to effect desirable reductions in inventory: 1) Proper utilization of an inventory management system. 2) Establishing more suitable product mixes. 3) Outlining procedures and guidelines for listing and delisting liquors. 4) Eliminating the perpetual inventory method and adopting the retail inventory method.

An Inventory Management System

To optimize inventory levels the Board needs to determine both order quantities and the timing of orders. Since its inception, the Board has trusted its own personnel's judgment as how best to manage the inventory.

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[3]Auditors, Examination, p. 16.

[4]IBM, Final Report on IBM Inventory Study for Montana Liquor Control Board (N.P.: IBM, July 1970), p. 20.

As the Board's sales have steadily increased so has the amount of inventory and the problems associated with controlling it. With inventory levels being subjectively determined, formidable problems have arisen.

As an example, in 1970 International Business Machines (IBM) stated that if each brand and size within each liquor store was considered individually this would be the equivalent of 60,000 items! In this case it appears that the power of a computer can and should be used to control effectively such a volume.[5]

Not only must a computer be utilized when dealing with such large numbers, but so also must an effective inventory management system. It may be argued that there are a multitude of reasons why an organization should employ an inventory management system. In any such discussion, however, three main reasons for such a system always emerge: 1) Provide better customer service. 2) Minimize costs involved. 3) Provide timely management information.[6]

Briefly, better customer service can be described in terms of "service level" as a percentage, i.e., the percentage of demands which may be filled from available stock. To some it may be desirable to provide a one hundred percent service level; but upon reflection, it is discovered that this would require maintaining a very large inventory to guard against running out of items. A reasonable level in most cases would be 97 percent to 98 percent.[7]

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[5]Ibid., p. 5.

[6]Ibid., p. 4.

[7]Ibid.

It can be seen from Figure 1 that inventory increases rapidly as the service level approaches 100 percent. Therefore, a balance must be struck between inventory and service.

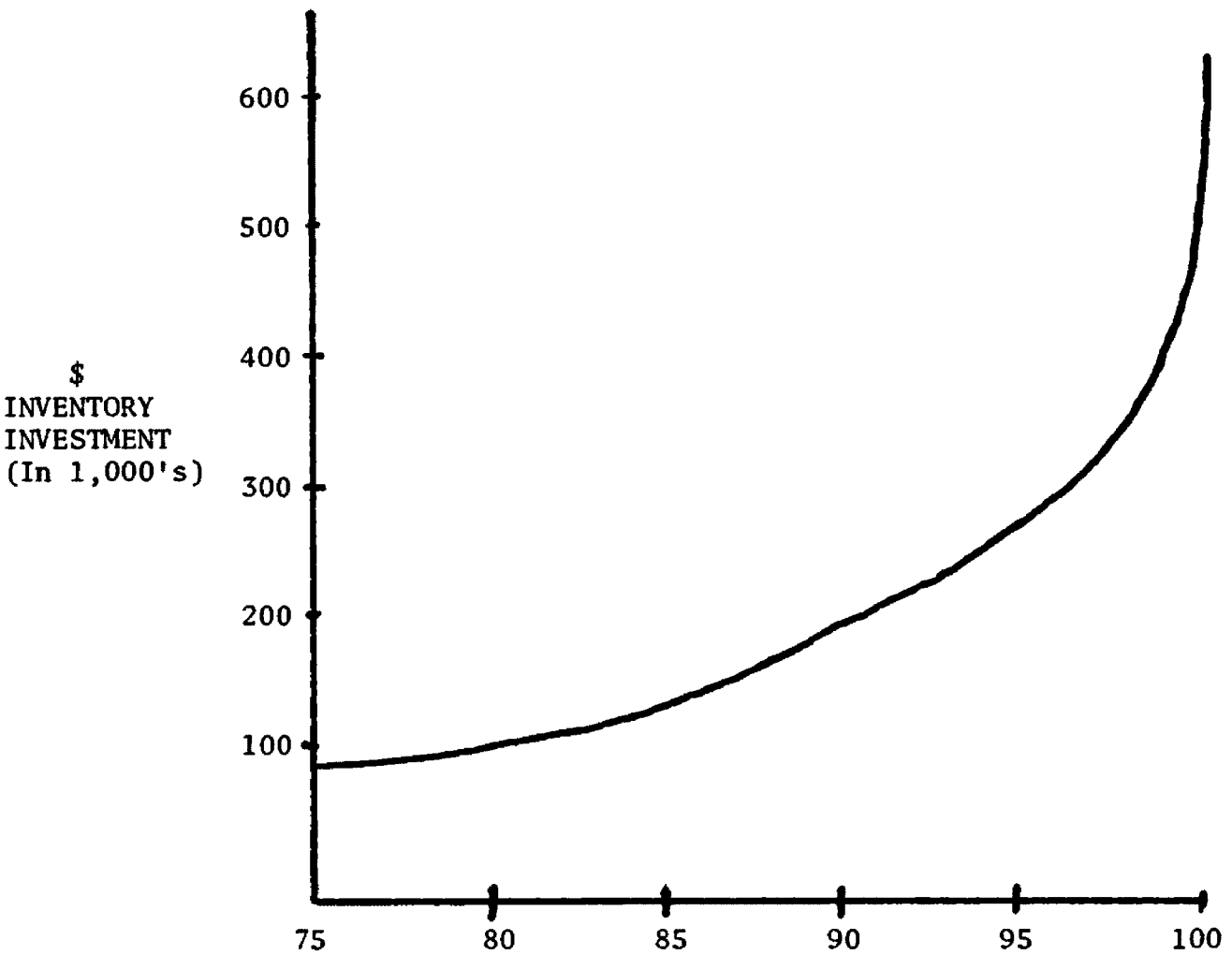

Figure 1. Inventory investment required for various service levels.

Source: IBM, Basic Principles of Wholesale IMPACT-Inventory Management Program and Control Techniques Pamphlet, (White Plains, New York, 1967), p. 25.

Minimizing costs in inventory management encompasses two principal costs: 1) Acquisition costs. 2) Maintenance costs. The costs that can be

minimized the best by utilizing an inventory management system are the maintenance costs. In the case of the Board, the most significant cost reduction would be in the area of "cost of capital". That is, if money were not invested in inventory it could be released to the general fund and result in a net savings to the state of Montana equal to the prevailing interest rates (7% interest rate X $566,600 inventory savings = $39,662 expected savings).

Information provided by the system must be timely if the management is to use it effectively. Instituting an inventory management system could provide management with substantial amounts of related data. Examples would be: 1) Data on the movement of individual items. 2) Monitoring and evaluating of the results of current policy. 3) Aid in the listing and delisting of brands.[8]

A system such as the one just described was suggested to the Board by the Legislative Auditors, IBM representatives, and NCR representatives in 1970. As of this writing, nothing has been initiated or contemplated in this area by the Board or, for that matter, the state government. It is hard to believe that nothing has been done when one considers that the Board is doing approximately $30 million in sales a year (Fiscal Year 1972 estimate).

Several inventory management systems exist but principally they all operate similarly and with the same goal--optimization of the organization's inventory. Two such systems are: 1) IBM's Inventory Management Program and Control Techniques (IMPACT) program. 2) National Cash Register's

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[8]Ibid., p. 4-5.

(NCR's) EMPHASIS program. For illustration, let us consider the merits of the IBM IMPACT program. This is a system that provides a distributor with the information necessary to determine when and how much to order for items in inventory. Thus, it minimizes the total cost of carrying inventory, purchasing and receiving, freight charges, and lost discounts for any specified level of service.

It specifically considers such factors as:

1. Lead time.
2. Forecast demand and error.
3. Service desired for each item.
4. Inventory carrying costs.
5. Purchasing and receiving costs.
6. Item and vendor discount structures.
7. Carload and pallet requirements.
8. Vendor minimums and maximums.

The system will also provide information that will permit management to know the results that can be expected from such inventory decisions as varying the cost associated with carrying a unit of inventory or changing the service level.[9]

For further illustration, let us consider results obtained from the use of IMPACT, particularly by other liquor monopoly states. Ohio, by using this technique, estimated at least a 17 percent reduction in average inventory and a 30 to 40 percent improvement as far as computer time is concerned.[10] Consider the following results obtained by the state of Oregon. Since adopting IMPACT in 1967, the Oregon Liquor Control Commission has been able to reduce average inventory by $800,000, although sales increased by five percent. Oregon tried for a 99 percent service level but attained a little over 98 percent.[11]

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[9]IBM, 1311 Wholesale IMPACT Computer Program Library Application Description (White Plains, New York: IBM, N.D.), p. 1.

[10]IBM, Final Report, p. 20.

The IBM study conducted for the Board in 1970 proffered the following figures as seen in Table II.

IBM stated that as a general "rule of thumb" they usually anticipate a 30 percent reduction in the average inventory upon the institution of IMPACT.[12] The 28.3 percent figure compares favorably with that projection. Montana's general fund could conceivably retain an additional $566,600 in reduced inventory outlays through implementing IMPACT.

TABLE II

SUMMARY OF PROJECTION

ANALYSIS (SERVICE LEVEL=95%)

Present Average Warehouse Inventory	$2,000,000.
Projected Decrease by Using IMPACT	566,600.
% Reduction	28.3%
Expected Savings Due to Reduction	39,662.*
Expected Increase in Costs	5,835.
Projected Net Savings	33,827.

*This is at a seven percent interest rate.

Source: IBM, Final Report on IBM Inventory Study for Montana Liquor Control Board (N.P.: IBM, July 1970), Figure 15.

The advantages and merits of such systems could be elaborated upon, but one important question still lingers, "Why hasn't the Board or the state government participated in such a venture?" In personal interviews with IBM personnel, it was learned that they were at a loss as to an

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[12]Data obtained through telephone conversation with IBM representatives in Helena, Montana.

answer to that question. Their study presented several unique applications of data processing and provided the Board enormous informational data. Also, when interviewing NCR representatives it was discovered that they had also presented similar information, and they stated that this information was balked at by the Controller's Office. Since 1969, the Board has been referred three times to an inventory management system; yet, three times the Board or the state government has balked.

There are two alternate courses of action available to the Board to rectify the existing inventory situation. First, it can retain its present data processing equipment and institute an inventory management system program. Secondly, the Board can obtain the use of other more sophisticated equipment to better serve its purposes or buy computer time on equipment in other state agencies.

Under the first approach, the Board has the capability of still instituting IMPACT on its IBM 1440. Through personal conversations with IBM personnel, it was learned that the IMPACT program could be duplicated from another existing program and still run on the Board's present equipment. This would negate the need to reprogram and rewrite the Board's current software. Inherent in this course of action is the ultimate need for an inventory manager and an individual familiar with all aspects of operating a sophisticated inventory management system.

IBM has indicated several times to the Board the need for an inventory manager and, also, school-trained personnel on IBM equipment and software if an inventory management system is to be adopted. At the present time the Board has neither an inventory manager nor school-trained data processing personnel.

The problem of data entry is significant if a system such as IMPACT were adopted. Presently, the Board's equipment, which operates a perpetual inventory, is fed data by punched cards. Machine operators punch data onto these cards from the daily sales slips of each state liquor store. IBM personnel believe that a great deal of streamlining is necessary in this field of data entry no matter what course of action the Board decides on. Their study states that "the benefits of such a streamlining are: reduced personnel requirements, reduction of errors and corresponding computer reruns, increased controls over cash balances, and a single source document being used as input for inventory analysis, cash balancing, retail store analysis, and sales analysis."[13]

It is desirable to use data in its original form. This was suggested to the Board in 1970, both by the Legislative Auditors and IBM. In addition, this report also recommends using original data, if the first course of action is adopted. Perhaps the best method involves machines called "Optical Character Recognition" equipment that have the ability to read handprinted numerals and machine printed characters. Both the Legislative Auditors and IBM referred to these source documents as "mark sense" cards. Each store vendor does his or her own ordering by utilizing "mark sense" cards--penciling in numbers on preprinted forms that reflect certain data--and returning them to the Helena warehouse for computer interpretation. It is recommended that the Board authorize this type of procedure if IMPACT is adopted. The savings through the use of IMPACT could pay for the additional "OCR" equipment mentioned above.

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[13]Ibid., p. 33.

The second course of action offers several distinct advantages over the first. First, through possible competitive bidding the Board could obtain data processing equipment less expensive than the $41,000 a year equipment now being operated. For example, in an interview with NCR computer personnel they stated that their Century series computers could perform the same tasks for about $29,000 a year. Second, computer equipment could be obtained that has the ability of being fed direct data input, thereby negating the need for employees at the warehouse to alter original source documents so the computer can read them. This method, to be explained later in greater detail, involves the use of machines at the retail stores that prepare punched paper tape. Third, the use of "remote job entry" into another state-owned computer could result in lower costs and yet achieve the same results. Fourth, utilization of a new generation computer with desired attachments such as "OCR", could more efficiently modernize the Board's operations.

The available options under the second plan are as numerous as there are computers. There are three principal routes the Board could follow to achieve a functional inventory system. First, the Board could utilize an inventory management system, such as IMPACT, on the State Administration Department's IBM 360-40 and, in effect, buy computer time. This would require rewriting a great deal of the Board's present programs, which will be both costly and time consuming. It would also require changes in the IBM 360-40 equipment so that it could handle the additional data.[14]

The utilization of "remote job entry" into the IBM 360-40 from the central warehouse could be accomplished through either terminals set

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[14]Information supplied by IBM representatives in a personal interview at Helena, Montana.

up in the warehouse or through a messenger. The messenger would hand carry the input data to the computer and return with the results. This would be the least expensive approach.

The second available method entails the acquisition of a new generation computer to be used in conjunction with IMPACT. In 1970 IBM recommended that the Board utilize the System/360 computer system rather than its IBM 1440 equipment. When IMPACT is used on the 1440 system, it is necessary for the user to program his own routines to perform exponential smoothing. He must also perform other intricate and necessary routines to update data stored in the computer. These problems would not exist should the Board decide to acquire System/360 equipment.

For example, IBM has developed a set of prewritten routines (called macros) to aid the programmer in his efforts. These macros perform the exponential smoothing, updating of bases indices, etc., which means the programmer does not have to become proficient in mathematics and statistics. While it is true that both the 1440 system and the System/360 may be utilized to run IMPACT, it becomes a simpler task on the System/360.[15]

In another interview with IBM representatives, it was stated that the Board's best bet would be to obtain the IBM 360-Model 20-Submodel 5. It would not require any reprogramming or rewriting of programs on the part of the Board. It was also stated that the cost of this machine would run in the neighborhood of $50,000 to $60,000 a year as opposed to the present outlay of $41,000 for all IBM equipment. This is considerably more than the $29,000 quoted by NCR and a careful evaluation would have to be made to see which system would be preferrable. Additional attachments such as "OCR"

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[15]IBM, Final Report, p. 25.

equipment and page readers would increase the cost, but utilizing some of the aforementioned devices such as "mark sense" cards could result in corresponding cost decreases in personnel needed to order and personnel needed to prepare data cards for the existing computer. Again, the overall net savings from utilizing IMPACT alone could pay for such equipment and yet provide years of continued savings.

Finally, it is felt, that the following option has the most to offer the Board. It involves the acquisition of cash registers, perhaps from NCR, that not only register sales in terms of dollars and cents but also have the ability to punch paper tape. The punched paper tape would act as the new source document for each store and would be sent by each store on either a daily basis or weekly basis to the central warehouse in Helena for processing. Incorporated in this scheme is either a computer system such as mentioned earlier or a NCR system that has the capability to accept directly, punched paper tape.

As an example, each large sales volume liquor store (principally known as "A" stores which have annual sales over $450,000) could be operated using a NCR Model 5 cash register. These machines, costing about $3,000 each, would keep not only a daily cash balance on paper tape, but also prepare with each sale a punched character on a separate tape. At the end of each day the "A" stores could send their tapes via certified mail to Helena as direct input for inventory management. This arrangement could conceivably be utilized with either a NCR Century series system or the IBM 360 computer system which would need special attachments to interpret the NCR punched paper tape.

There are currently seventeen "A" stores being operated. This would entail an immediate out-of-pocket cash outlay of approximately $51,000.

The fact to bear in mind is that this would be a one-time expense and would not include the deductions for trade-in values of the present equipment. The other smaller liquor stores could, on a weekly basis, send their summaries of sales to a consolidated point (an "A" store) where the data would be punched onto paper tape and sent to Helena. Perhaps through a more detailed analysis, it may be found that some "B" stores could use the Model 5 cash register and function as other consolidation points.

As an illustration, the seventeen "A" stores account for approximately 57 percent of total sales. Including the next 13 leading stores by sales volume (predominantly "B" stores) it is found that 20 percent of the stores now yield about 71 percent of all sales.[16] So with the introduction of these special cash registers it can be seen that even for a one-time out-of-pocket expense of $90,000 the Board can receive, on a timely basis, the bulk of its sales reports from relatively few stores.

The cost savings per year through implementation of an effective inventory management system could pay for all of these proposed schemes. In the long run the efficiency produced because of timely data being placed in the computer system could result in substantial savings to the Board and ultimately to the state of Montana.

Better Product Mixes

Previously, it was cited that slow-moving items constituted one of the Board's main inventory problems. In effect, the Board has a "product mix" problem that has not improved since the 1970 Legislative Auditor's report. The utilization of a computer, along with a good inventory management system, will eventually solve the problem. Albeit the use of a computer

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[16]Figures developed from projections by doubling the first half of fiscal year 1972 sales per store.

would be more efficient, a visual examination will serve, in most cases, the same basic purpose.

For example, in 1970 the Legislative Auditors found the Board had seven tequilas listed, two of which accounted for 77 percent of total tequila sales. Also, twenty-two different brands of 80 proof vodka were listed as of November 1, 1969.[17] The Legislative Auditors also discovered in a four-month analysis that 27-29 percent of the liquor items listed accounted for 90 percent of total case sales, as shown by Table III.

TABLE III

PERCENTAGE OF LIQUORS WHICH ACCOUNTED FOR

Month & Year	50% of Sales	75% of Sales	80% of Sales	90% of Sales
December 1967	3.2%	11.1%	14.7%	27.3%
December 1968	3.3	11.3	14.8	27.2
September 1969	3.3	11.5	15.1	27.6
December 1969	3.4	11.9	15.7	28.9

Source: Montana, Office of the Legislative Auditor, Report on Examination of the Montana Liquor Control Board for Fiscal Year Ended June 30, 1969, (Helena, Montana: State of Montana, 1970), p. 23.

Examination of more recent data (calendar year 1971) published by the NABCA yielded the following information:

1. The 99 distilled brand leaders (12% of all items) account for 65 percent of all case sales, and 91 percent of all distilled spirits case sales.

2. When the 40 top wine brand leaders (minimum of 1,000 case sales per year) are combined with the top 99 distilled brand

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[17]Auditors, Examination, p. 25.

leaders, it is discovered that these 139 items or approximately 17 percent of all items account for 87 percent of all case sales.

3. Approximately 11 percent of the wine items account for 76 percent of total wine sales.

4. There were eight tequilas, two of which constituted 84 percent of tequila sales.

5. There were 24 different brands of 80 proof vodka listed for sale, three of which accounted for 74 percent of 80 proof vodka sales.[18]

Further investigation of the NABCA sales report found that in calendar year 1971 there were other glaring examples of poor product mixes:

1. Thirteen brandys were listed, four of which accounted for 92 percent of brandy case sales. One item alone accounted for 78 percent of brandy sales.

2. Twenty-six domestic gins were listed, four of which accounted for 69 percent of domestic gin sales.

3. There were four sloe gins listed, and one of them accounted for 92.5 percent of sloe gin sales.

4. There were five cognacs listed, two of which accounted for 88 percent of cognac sales.

5. Twenty-six Scotches, bottled in the U.S., were listed; four of which accounted for 71 percent of U.S. Scotch sales.[19]

The above data exemplifies the basic problem of the Board's inventory, i.e., many slow movers, which tie up excessive amounts of capital and take up valuable warehouse space. Also, the amount of additional manual labor needed to handle these items is of importance.

It is not meant that all these particular items need to be deleted, because one of the Board's primary concerns is to provide various types of liquor to the public. But in some instances, it would be useful to delete

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[18]NABCA, Montana Sales, p. 5-21.

[19]Ibid.

many of the listed items based upon a study conducted by Consumer Reports. The study was conducted using a panel of expert tasters from different distilleries to determine if the extra dollar outlays for different brands of vodka and gins were worth it.

It was found that basically no difference is discernible between individual brands of domestic vodka. "What it boils down to is this: When you buy vodka, you're buying alcohol. Since laboratory-grade ethyl alcohol is not commonly available to consumers for beverage use, you'd be wise to buy the least expensive vodka brand you can," states Consumer Reports.[20] It is evident that over twenty different 80 proof vodkas is entirely too large and expensive to maintain. Service could be just as well provided with fewer brands.

The panel also tasted twenty-five brands of gin for any differences. Briefly put, gin is slightly flavored vodka. Both British and American producers start with a very pure alcohol which they dilute with water and redistill in the presence of herbs, spices and other botanicals (especially juniper). Consumer Reports cited that there exists no degree of dryness in gins and that these claims only amount to puffery. Their panel of expert tasters was baffled when it came to identifying specific brands. Their principal remarks were that some of the imported gins were smoother but at a sacrifice in flavor strength. The report also stated that perhaps with the first drink one could recognize a familiar gin but that this difference would disappear upon succeeding drinks as one's taste was dulled. They also

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[20]Consumer Reports, Vodkas, Gins & Rums, (Mount Vernon, N.Y.: Consumer Reports, July 1967), p. 381.

doubted that a person could spot the difference between individual gins when in a mixed drink. Consumer Reports recommended buying the cheapest brand available rather than the prestigious brands.[21]

Establishing Listing and Delisting Procedures

The previous section pointed out the fact that there are too many slow-moving items in the Board's inventory due to poor product mixes. It was also mentioned that with the aid of a computer or through visual examination many of these items can be deleted. At this juncture remain two important questions: 1) At what point is an item considered a slow mover? 2) How does the Board avoid stocking such items in the first place? The answer to the first question involves the establishment of a quota system for the delisting of individual items. Associated with the second question would be the establishment of criteria and procedures that would enable the Board to evaluate proposed new items for listing to preclude the addition of possible slow movers.

At the present time the Board does not use a quota system to determine slow-moving items. That is, there exists no minimum sales level any particular item must achieve. The Legislative Auditors recommended that this type of system be instituted. Their report also indicated that this idea has been discussed by the Board for the past fourteen years without much headway.[22] The present administrator has tried to utilize quotas

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[21] Ibid., p. 382.

[22] Auditors, Examination, p. 29.

but has been hampered by the actions of the five member Board who feel that the administrator has no authority to delist and that it is the Board members' function to delist.[23] It is time that someone determines who is responsible for delisting and that action be initiated immediately to begin the process.

In April 1966 the previous administrator suggested the following minimum monthly sales requirements for vodka, straight whiskey and blended whiskey:

Half pints	5 cases
Pints	10 cases
Fifths & quarts	20 cases
Half gallons	15 cases

North Carolina, for example, utilizes quotas for the following types of liquor: Canadian, bonds, corn, straight and blended bourbons, Scotch, gin and vodka. Their quotas are based on the price range of the item and they vary between 30-300 case sales per month as evidenced by Table IV.

Montana's existing system for establishing minimum sales requirements is inadequate and the items covered by quotas need to be expanded to perhaps resemble North Carolina's system. It is not meant that the precise quotas of North Carolina's be adopted by Montana but rather the Board should give serious consideration to instituting quotas that reflect reasonable sales levels and that account for high value liquors versus low value liquors.

Mr. Joseph Shea, the present administrator, stated in an interview that his biggest problem when delisting an item was that individuals throughout the state would telephone his office and complain that their favorite

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[23] Ibid.

TABLE IV

CASE SALE MINIMUMS PER MONTH

FOR THE NORTH CAROLINA BOARD OF ALCOHOLIC CONTROL

BY PRICE RANGE

BONDS

Range 2	50 cases	$6.00
Range 3	75 cases	$5.00
Range 5 & 6	100 cases	$4.00

STRAIGHTS

Range 1	50 cases	$8.00
Range 2	75 cases	$6.00
Range 3	100 cases	$5.50
Range 4	150 cases	$5.00
Range 5	175 cases	$4.50
Range 6	200 cases	$4.00
Range 7	225 cases	$3.70
Range 8 & 9	250 cases	$3.35

BLENDS

Range 6	200 cases	$4.00
Range 7	225 cases	$3.70
Range 8	250 cases	$3.40
Range 9	300 cases	$3.25

CORNS

150 cases

SCOTCHES

Range 1	30 cases	$8.00
Range 2 & 3	50 cases	$6.50
Range 4 & 5	60 cases	$4.50
Range 6 & 7	75 cases	$4.25

GINS

Range 6,7&8 150 cases

VODKA

80°	200 cases
90°	200 cases

CANADIANS

75 cases

Source: Data provided by J. W. Pierce, Administrator, North Carolina Board of Alcoholic Control, Raleigh, North Carolina, March, 1972.

brand was being treated unfavorably. This is the precise reason that the Board should institute a quota system for all specific types of liquors. Utilizing a quota system, the Board would have objective guidelines that any individual could examine and be cognizant of when a liquor was not meeting the minimum requirements. There would be far less subjective decisions made and the Board's actions could be verified by objective methods and data.

In addition to utilizing a quota system, the Board should formulate an evaluation program. Items should be reviewed and evaluated at least every six months to identify slow movers. If an item is recognized as a slow mover, then an additional six months should be allotted for the item to reach its assigned quota. At the end of the period, if the item still does not meet the minimum, then all purchases should cease and the item be delisted.

Perhaps this problem of excessive inventory could be dealt with better if slow-moving items were never stocked. This approach involves establishing written criteria or guidelines from which to analyze and evaluate proposed new items. The Legislative Auditors reported that "they believed that the absence of written sound criteria and guidelines and the lack of a formal evaluation using these guidelines is the major reason excessive amounts of liquor are listed for sale."[24] When 21 percent of the Board's distilled spirits account for 91 percent of distilled spirit sales, something is wrong.

Basically, the procedures for stocking a liquor in Montana are as follows:

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[24]Ibid., p. 25-26.

1) The distiller sends samples to the Board members.
2) The distiller's representative provides basic information about a liquor such as age, proof, and size.
3) The representative meets with the Board members and gives his "sales pitch" at one of the monthly meetings.
4) The Board members discuss the proposal and decide whether the liquor should be stocked.[25]

Again, the Board exercises very little objectivity about the merits of proposed items. One would think that the Board would employ all available information before committing money and warehouse space to any new item. Following are examples of the available information that some monopoly states use: 1) How many other brands are in the same category by price and age. 2) Whether or not the brand has been listed before. 3) The number of other monopoly states listing the brand. 4) The sales record in other states of the brand. 5) The possible sales quotas from other monopoly states.[26] There is no reason why the Board cannot avail themselves of this type of information.

It is very apparent that the Board does not seriously consider the number of similar brands in particular categories as evidenced by the aforementioned product mixes. For example, in 1969 there were 22 different brands of 80 proof vodka, while during 1971 the Board listed 24. There were seven tequilas in 1969, and in 1971 eight tequilas were carried. The Board handled approximately 834 individual brands as of December 31, 1971.[27] When one considers that for many brands there exists several sizes, the number of items handled soars over the 1,000 mark. The

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[25]Ibid., p. 24.

[26]Ibid.

[27]NABCA, Montana Sales, p. 5-21.

Legislative Auditors reported that in 1970 there were 1,400 separate items listed for sale. As mentioned earlier, there would be substantial cost savings if this number were reduced as the Legislative Audit Report recommended two years ago. A more workable figure would be in the 400-600 range. Idaho in 1971, for example, listed only 404 different brands for sale.[28]

As an added illustration, on December 20, 1971, the Board added 52 new items to the inventory. This list included the addition of three new vodkas, when eighteen already are listed; one new tequila, where four are presently listed; seven brandys, when twelve separate brands are already available for sale; three new gins, when the Board already lists nineteen gins; and three new rums were added, where nine already exist.[29]

Implementation of Retail Inventory Method in Place of Perpetual

"The system used in the state's liquor stores to maintain sales records is antiquated in view of systems used by other liquor monopoly states and many retail businesses," stated the Legislative Audit Report in 1970.[30] This system, known as the perpetual inventory method, has been used by the liquor stores since the Board was established. Tabulating daily sales involves three steps: 1) Writing up a sales ticket to record each sale. 2) Maintaining a worksheet to accumulate sales by specific item. 3) Preparing and transmitting a sales report to the central warehouse.

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[28]Derived from Idaho State Liquor Dispensary Price List, dated November 1, 1971.

[29]Derived from Supplement No. 5 to May 1, 1971, Price List of the Board, dated December 20, 1971.

[30]Auditors, Examination, p. 47.

This work involves considerable amounts of time and effort for both the liquor store employees and central office employees. In fact, considerably more time and effort is expended by the central office personnel who must sift through all of the 150 incoming sales reports and compare the cash receipts to the total sales. In addition, these personnel must also key punch cards on a daily basis for each item sold and correct errors contained within each sales report. It is the opinion of the Legislative Auditors that it is quite unnecessary to maintain such a time-consuming and work-demanding practice when there exists a much simpler and more suitable method--the retail method.

Basically, the Board utilizes the perpetual inventory method for one reason--to check bottle overages and shortages. In other words, it is a control technique to account for every single bottle of liquor within the system. For example, in fiscal year 1971 the Board's total losses, breakages, and shortages amounted to .00028 of sales.[31] It may be argued that this low figure is a direct result of the perpetual inventory method, but this is not the case. The above figure is a result of both good security procedures within each store and the inability of customers to shoplift due to the layout of most liquor stores. This simply is not adequate justification for continuing to maintain the perpetual inventory method.

In an interview with Mr. Joseph Shea, the Board's administrator, he related how in the past two years sixteen liquor stores (presumably "A" stores) have ceased using the perpetual method. Yet, if a person were to visit the two Missoula liquor stores (No. 3 & 4 in sales volume) he would discover the perpetual inventory methods still in practice.

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[31]Derived from the Board's 1971 Comparative Profit & Loss Statement.

In place of the present system, it is recommended that all state liquor stores adopt the retail inventory method accounting for inventories. Many other liquor monopoly states utilize this system effectively, as does the vast majority of American businesses. Monthly sales can be determined by a simple mathematical application known as "forced sales". As an example, consider the results obtained for item X in Table V:

TABLE V

EXAMPLE OF "FORCED SALES" METHOD

	Number of Units	Retail Value
Inventory beginning of month (physical count)	1,000	$10,000
Plus shipments to store during month (shipping records)	600	6,000
Balance available for sale	1,600	$16,000
Less inventory end of month (physical count)	900	9,000
Sales during month (forced figures)	700	$ 7,000

Source: Montana, Office of the Legislative Auditor, Report on Examination of the Montana Liquor Control Board for Fiscal Year Ended June 30, 1969, (Helena, Montana: State of Montana, 1970), p. 50. Different figures substituted.

This "forced sales" figure of $7,000 is the amount for which a store vendor would be accountable and when combined with the forced sales figures for all stock items handled by the store, the total should equal the cash deposits made by the vendor during the month.[32]

[32]Auditors, Examination, p. 50.

Certain benefits would be derived if the perpetual inventory method were eliminated. Generally, each "A" store assigns one employee to operate either the perpetual worksheet or to fill in sales slips as sales are recorded. The employee seated on a stool near the cash register copying down cryptic numerals is a familiar sight to most customers. Discontinuing the perpetual method would enable each "A" store to eliminate one employee at the least. Since there are 17 "A" stores, 17 employees could be terminated which would result in an approximate annual cost saving of $91,800. This figure could be substantially higher when the reduction in the state's cost of employee benefits is considered. This annual cost saving could be increased markedly if the "B" stores were to utilize part-time clerks rather than full-time clerks.

Methods of the past are not necessarily relevant in today's business world. What was used in the 1940's should not necessarily be carried forward into the 1970's and be expected to provide useful service. The perpetual inventory method employed by the Board for its liquor stores is just such a case. This practice illuminates and personifies only too clearly the basic problem with the Board itself, i.e., a lack of professionalism. A business cannot expect to operate efficiently when its leadership only manages its affairs twice a month. A business cannot expect continuity and smoothness when the possibility exists that its leadership will change with a change in the governorship. When outmoded and inefficient methods are employed by a business, its operations, in most cases, reflect those methods.

Considerable time could be saved both for the employees and the customers if the perpetual method were discontinued in that sales slips would no longer need to be recorded for each sale. Most customers of the

liquor stores during rush hours are subjected to long lines and waiting periods just to purchase a bottle of liquor. These delays result mainly from the need to fill in sales slips. Better customer service could result and movement through the stores could be made much easier if the retail inventory method were adopted.

CHAPTER III

PERSONNEL REQUIREMENTS & THEIR MANAGEMENT

One of the major problem areas investigated was the Board's lack of good employment practices. The Legislative Auditor's Report in 1970 stated, "The Board has not established a policy for determining the number of employees needed in state liquor stores. Many times the number of employees is determined by vendor requests and the availability of applicants."[1] This particular situation still exists and is one of the prime reasons that the Board experiences high operating costs in comparison to other liquor monopoly states.

As an example, consider the contents of Table VI that was compiled by the Legislative Auditors in 1969:

TABLE VI

EMPLOYEES PER STORE SALES LEVEL

Store	Approximate Sales 1968-69	Number of Employees	Self-Service Store
A	$1,050,000	7	No
B	970,000	8	Yes
C	2,050,000	8	No
D	1,650,000	9 1/2	Yes
E	580,000	4	No
F	580,000	5	No
G	330,000	2	No
H	230,000	2 1/2	No

Source: Montana, Office of the Legislative Auditor, Report on Examination of the Montana Liquor Control Board for Fiscal Year Ended June 30, 1969, (Helena, Montana: State of Montana, 1970), p. 53.

3.

It is interesting to note that in all of the above examples no clear correlation is discernible other than the fact that liquor stores that have fewer sales are often blessed with more employees. It is apparent that sales are not the determining factor when it comes to the employment of new personnel. Table VII for fiscal year 1972 illustrates just as vividly that in the three years since the Legislative Auditors recommended establishing personnel requirements the Board has not acted. Many disparities exist between the number of employees employed at a liquor store in relation to the sales volume of the store. There appears to be no consistency between the number of employees and the sales volume differences.

The Board, as of March 23, 1972, employed 254 full-time people in its 150 liquor stores. This figure fluctuates generally between 254 and 257 employees. If part-time personnel are included, the number of employees becomes substantial. During 1971, 390 people were employed either as full-time or part-time personnel. Contrast this with the state of Idaho, which used 174 full-time employees to operate its 125 retail liquor stores during fiscal year 1971.[2] It is apparent from Table VII that something is wrong with the methods used by the Board to employ personnel for the liquor stores.

During fiscal year 1971 the Idaho State Liquor Dispensary employed a total of 211 permanent people as shown in Table VIII. Comparatively, the Board employed approximately 303 people divided into the following categories: 1) Twenty-three office personnel including the administrator and his assistant. 2) Twenty-three warehousemen, five of which are night watchmen doubling as janitors. 3) 257 employees in the liquor stores.[3]

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n unpublished data provided by the Idaho State Liquor

TABLE VII

EMPLOYEES PER STORE SALES LEVEL 1971

Store		Sales July 1971-December 1971	Number of Employees	Dollar Difference
Helena	#1	$ 877,764	7	$428,308
Butte	#2	449,456	8	
Billings	#5	278,873	4	30,745
Libby	#6	248,128	3	
Bozeman	#9	529,222	4	35,471
Kalispell	#12	493,751	6	
Bozeman	#9	529,222	4	194,641
Anaconda	#14	334,581	5	
Havre	#26	352,444	2	234,460
Red Lodge	#27	117,984	2	
Billings	#4	1,054,720	9	605,264
Butte	#2	449,456	8	
Lewistown	#15	194,368	3	9,658
Glendive	#21	184,710	2	
Billings	#3	549,841	7	20,619
Bozeman	#9	529,222	4	

Note: This list does not include part-time employees.

Sources: Sales figures derived from unpublished data of the Board's Operating Statement of July 1971 through December 1971.

Employee figures derived from unpublished data provided by the Board.

TABLE VIII

PERSONNEL OF THE IDAHO STATE LIQUOR DISPENSARY
1970-71

POSITION TITLE	NO. EMPL.
Superintendent	1
Purchasing Assistant	1
Principal Internal Auditor	1
District Liquor Supervisor	2
Senior Secretary	1
Senior Account Clerk	2
Principal Clerk	1
Cashier Clerk II	1
Senior Clerk	6
Posting Machine Operator	3
Clerk II	6
Utility Man	1
Warehouse Supervisor	3
Warehouseman	8
Liquor Store Manager	48
Liquor Retailer	75
Liquor Stock Clerk	51
Total	211

Source: Derived from unpublished data of the Idaho State Liquor Dispensary as provided by the administrator.

These employment practices of the Board are terribly inefficient and wasteful. Salary costs could be dramatically reduced if the Board would adopt guidelines and criteria by which to fulfill its personnel requirements. Perhaps sales per store could be the basic criterion along with such statistical information as cases or units handled per employee. Just from visually examining Table VII it can be seen that several employees could be terminated, thereby creating cost savings to the Board through reductions in salaries and employee benefits.

The time has arrived for the Board to adopt sensible and generally accepted business practices. Untold savings could arise just from initiating guidelines that assure optimization of personnel.

CHAPTER IV

RETAIL LIQUOR STORE OPERATIONS

Much of the Board's excessive personnel troubles are directly traceable to the number of liquor stores in operation. As of December 31, 1971, the Board had 150 liquor stores in operation. A minimum of 56 liquor stores is required because of Section 4-114, R.C.M. 1947, which states that each county seat must contain a state liquor store.

Although it is the purpose of the Board to maintain and operate liquor stores, provide service, and make a profit, many of the stores are operating in a lackluster fashion. For example, using the net profit figures for one half of fiscal year 1972, it was discovered that 53 stores had net profits of under $4,000. A more detailed analysis illustrates the following results in Table IX:

TABLE IX

PROFIT RANGE OF LIQUOR STORES

Profit Range	No. of Stores
$0 -$1,000	11
$1,000-$2,000	27
$2,000-$3,000	7
$3,000-$4,000	8

Source: Derived from unpublished data of the Board's operating statement for July 1971 through December 1971.

These figures are not, in and of themselves, reason to consider closing a store. In some cases these particular stores are located in county seats and therefore are required by Montana law. In other cases they exist for no other reason than to provide service. The figures do demonstrate that many of the stores are quite marginal in their operations and might require closer scrutiny as to their usefulness.

One prime reason for the low profits of some liquor stores is their location. Liquor stores are, in some cases, placed almost side-by-side and, in effect, their proximity to one another produces duplication of effort. Also, this juxtaposition of the stores forces them to compete against themselves for the same sales dollars, thus breeding inefficiency.

To illustrate, consider the following disparities: 1) Two stores located at Plains and Paradise are situated six miles apart. 2) Between Three Forks and Bozeman, a distance of thirty miles, four stores are in operation. 3) Also, between Shelby and Sweetgrass, a distance of thirty-five miles, four more stores are located. 4) In Ravalli county, between Darby and Stevensville, four stores are in operation only thirty-five miles apart. There are several other such examples, but these suffice to demonstrate the aforementioned inefficiency and duplication.

The placement of other liquor stores throughout the state present some questions. Why is it necessary to have liquor stores in both Helena and East Helena when they are only four miles apart? Why is it required to maintain a state liquor store in Birney, which has a population of thirteen, and in Roy, which has no population recorded in 1970? Is it indispensable for the Board to operate eleven liquor stores that surround the Fort Peck Indian reservation?

The point of the discussion is that it appears that liquor stores have been allowed to proliferate without the slightest design or justification. It has been mentioned several times in this report that one of the primary purposes of the Board is to provide service to the people of Montana. Without a doubt, this is being accomplished but at a severe cost in efficiency. The Board cannot hope to service all of the people but of the people it does service, it should do so in an efficient manner that returns the greatest amount of revenue to the state coffers. Some people may be inconvenienced by reducing the number of stores, but that fact already exists for many Montanans.

The following stores could be closed based solely on the town's proximity to another liquor store and in every case, if these liquor stores were to be closed inhabitants of that town would have to travel no farther than fifteen miles to purchase liquor, as evidenced by the mileage in parenthesis:

1. Paradise	(6)	7. Kevin	(15)
2. East Helena	(4)	8. Fairview	(12)
3. Victor	(8)	9. Froid	(12)
4. Nashua	(12)	10. Flaxville	(11)
5. Manhattan	(9)	11. Virginia City	(14)
6. Sweetgrass	(8)	12. Brady	(12)

Their closure could result in the following cost savings to the Board: 1) At least a $50,000 a year reduction in salaries and commissions (nine employees @ $4,900 and three employees @ ten percent of projected fiscal year 1972 sales). 2) A total cost savings of approximately $84,000 a year for expenses for all of the stores closed. Again this figure would be increased when employee benefits and freight charges to the stores are included.

This is not to say that these above-mentioned stores are mandatory closures nor is it implied that these stores are the only ones that could be closed. The intention here is to illustrate that there exist stores, operated by the Board, that certainly need to be investigated and considered for termination.

There needs to be a policy formulated by the Board that attempts to locate liquor stores optimally throughout the state to achieve both high sales and good service. Population should be one of the primary considerations in locating stores. In addition, the store's location in relation to other liquor stores must be thoroughly evaluated to see if duplication and inefficiency are going to result. It is within the power of the Board itself to establish and terminate liquor stores. This authority should be utilized to service state residents optimally and to maximize state revenues from the sale of liquor.

In discussing this matter with Mr. Shea, his principal troubles in this area arise from the state senators and representatives who represent the county in which a liquor store is being considered for termination. Mr. Shea remarked that "At first mention of a store closure my office is besieged with phone calls from officials of that county desiring an explanation." In 99% of the cases the officials of the county retain their liquor store. So it appears that what is needed are criteria set by law that all Montanans could be cognizant of, to guage the performance of each store. If, over a period of time, a store continually misses the criteria then the Board would have objective data to provide county and local officials as to why the store must be closed. If the criteria are reasonable and flexible enough, no one should have any complaints to direct at the Board's actions.

CHAPTER V

CONCLUDING OBSERVATIONS

Professionalism! This is the key factor for the Board's future operations. This report has examined several important areas within the Board's operations and has found them wanting. In each case the Board has displayed total disregard of generally accepted business practices and has, for the most part, been inactive in areas that have been suggested for change. The manner in which Montana's liquor operations are run is totally inefficient, and as a result the Board incurs excessive costs that reduce the amount of revenue available to the state.

As mentioned earlier, this inefficiency is directly traceable to the Board itself. Because of the political practices that appoint members of the Board based on their party affiliation rather than on their business expertise, Montana's liquor operations have suffered. One can see from the data presented in this report that many dollars in cost savings can result if the Board would only adopt and utilize sensible business practices. The liquor business has grown to a volume of nearly $30 million a year business and yet the same methods of doing business that were employed in the 1940's and 1950's still remain today. The financial needs of the state of Montana have never been greater, and the onus of providing the additional revenue has become heavier for the Board.

The solution to many of these problems lies in reorganizing the Board into a group of professional individuals. This means the abandonment of all political patronage and political manueverings within the liquor

operations of Montana. Men and women should be hired to manage the Board's operations who are cognizant of the latest business developments; who will participate in the functions of the Board as career personnel; and who will not be subject to political action due to their courses of action. In effect the Board should be removed from the political arena.

This report recommends that the product mix of all categories of liquors be examined closely on a yearly basis and that items not capturing a significant amount of its market be deleted. The aforementioned examples of vodkas, gins, sloe gins, Scotches, and tequilas can serve as starting points. In most cases a visual examination will serve the purpose but with the use of a computer more timely information such as a monthly analysis will be more effective. As a result less capital will be tied up in excessive inventory and fewer cases of liquors will have to be stored and handled.

Primary among the Board's list of needs is a new warehouse. The present three-story structure in Helena is completely outdated and outmoded for effective operations to take place. The work force could be reduced by as many as eighteen people if a warehouse were constructed similar to the Idaho State Liquor Dispensary's warehouse. That warehouse uses a total of five employees to load and off-load liquor, while the Montana operation employs twenty-three people. The difference lies in the fact that the Montana warehouse is unable to use forklifts and palletized merchandise because of the sprinkler system which is hung too low from the ceilings. While it takes the Montana warehousemen three to four hours to unload manually a boxcar of liquor, it requires only twenty minutes for the Idaho warehousemen to do the same task using forklifts.[1]

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[1]Information provided by Idaho State Liquor Dispensary Administrator, Bill Webster, in a telephone conversation.

The Board has purchased land in the Helena valley for a new building, but the Legislature has yet to fund the money (approximately $1,000,000) for the warehouse itself.[2] The addition of a new warehouse in Helena would increase the efficiency of the Montana operations significantly and would result in lower costs.

This report has listed the following annual dollar savings that could be obtained through better business practices:

1) $34,000 -- Net savings from reduced inventory.

2) $91,800 -- Salary savings from the reduction of seventeen employees who operate perpetual inventory.

3) $84,000 -- Salary and expense savings from closure of twelve retail outlets.

$209,800 -- TOTAL

In addition, if the new facility were constructed, a saving of $108,000 per year could result through the termination of eighteen warehousemen. All of the funds could be earmarked toward either the future construction of the new warehouse or the retirement of the bond issue floated to construct the new warehouse.

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