

BEVERAGE CONTAINERS: WHY A DEPOSIT SYSTEM IS NECESSARY

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INTRODUCTION

Nonreturnable beverage container production will jump from 1) 25.6 billion to 58.1 billion units per year between 1966 and 1976. This tremendous jump in nonreturnable container production can only mean two things: taxpayer financed municipal refuse systems will have to collect and dispose of even more throw-aways and consumers will pay the extra cost of manufacturing containers for use one time only. A system of deposits on beverage containers, as is proposed for the City of Ann Arbor, represents a viable, working alternative to the rapid proliferation of "convenience" packaging.

The nonreturnable container is but one of many innovations in recent years in the area of "convenience" packaging. Yet, it must be asked, Convenient to Who? The nonreturnable has allowed grocery store owners to decrease the amount of storage space necessary for handling returnable containers. The nonreturnable container has made it possible to produce a beverage container out of steel and aluminum for the first time. But, most importantly, the nonreturnable has meant a significant increase in the number of containers produced each year.

When it became apparent that nonreturnable containers were going to play a major role in beverage packaging, many people expressed concern over the unnecessary depletion of natural resources, greater cost to the consumer, and increased waste that would be generated. Industry response was to promote recycling as a solution to the increase in solid waste, encourage the establishment of citizen run recycling stations, and advertise the recyclability of their products. Thus, industry felt that they were responding to consumer demand for "convenience" on the one hand, and environmental concerns on the other. Separating glass by color and removing metal rings or smashing cans and then storing them before making a separate trip to a recycling station could hardly be called a convenience when compared with placing a deposit on a container and returning it as part of a regularly scheduled shopping trip. Having consumers purchase nonreturnable containers and then recycle them may be convenient for grocery store owners and container manufacturers, but it certainly lacks convenience for the environmentally concerned citizen.

SOLID WASTE COLLECTION AND DISPOSAL

The shift from returnable to nonreturnable, "convenience" beverage packaging has meant a shift in responsibility in the handling and disposal of packaging. In a system of returnable containers, once the container is manufactured, it then goes to a bottler for filling. Filled bottles are delivered to the retailer and sold to the consumer. Empty containers, returned by the consumer, are picked up and returned to the bottler for refilling and reuse. In a system of nonreturnable containers, once the container is manufactured, it is filled, delivered to the retailer, sold to the consumer, and deposited in the trash after one use. Some containers are taken to recycling stations, but due to the small number of containers presently recycled, their number is insignificant.

Returnable bottles return an average of 15 times for refilling and reuse before disposal²⁾. Under a returnable system, it is

necessary to produce and dispose of only one container in order to service 15 purchases of beverage. To service the purchase of the same amount of beverage under a nonreturnable system requires the production and disposal of 14 times as many containers. Thus, taxpayer financed municipal refuse systems are burdened with the responsibility of collecting and disposing of the additional fourteen containers.

Because returnable beverage containers are reused many times before being discarded, they are not a significant part of glass and metal in the solid waste stream. When the first nonreturnable steel beer can was introduced in the early 1950's, a rapid change-over to nonreturnables began to take place, increasing the amount of glass and can beverage containers in municipal refuse. Presently, beverage containers represent 50% of the glass and metal food containers in municipal refuse. In 1971-1972, the City of Ann Arbor spent \$1,491,387.00 of taxpayer's money for its refuse collection system³⁾. Part of that cost can be attributed to the increased use of nonreturnable beverage containers. Requiring a deposit on beverage containers is an excellent way of reducing the amount of waste presently handled by Ann Arbor's Department of Public Works.

LITTER

The throw-away beverage container, in many ways, focused attention on what we call the litter problem, both because of the container's high visibility along the roadside, and unlike paper products, slow rate of biological deterioration. Interestingly enough, the organization that has spearheaded the massive anti-litter campaigns of recent years, Keep America Beautiful, is composed of representatives of major nonreturnable beverage container manufacturers, including the American Can Co., the National Can Co., the Continental Can Co., Northwestern Glass Co., and Owens-Illinois.

However, despite the millions of dollars that they and other organizations have spent on anti-litter campaigns, the amount to be collected and the costs of collection continue to rise. In 1970-1971 it cost taxpayers in the State of Michigan \$1.1 million to remove litter from the state's highways⁴⁾. Clearly, more effective means of dealing with this problem are called for.

Requiring a deposit to be refunded upon return of the container will by no means eliminate all litter. However, a deposit system introduces a new incentive beyond that of guilt or environmental concern to think twice before tossing a bottle or can out of a car window. Deposits also encourage groups such as Boy and Girl Scouts, children, or adults to stop, pick up a container, and return it for redemption of deposit.

CITIZEN RECYCLING EFFORTS

In the past two years, citizen run recycling stations have appeared across the country. Through their efforts, citizens have been able to focus a great deal of attention on the issue of waste recycling and reuse. However, such operations are not economically viable and do not represent a realistic solution to the growing problems of solid waste management because of their ability to handle

only a small percentage of available solid waste.

Citizens are donating tremendous amounts of time and energy to operate recycling stations, save materials, prepare them according to industry specifications for recycling, and drive them to a recycling station. Because recycling stations are also extremely inefficient operationally, and rely almost totally on manual labor, their very existence is owed to the persistence and commitment of citizen volunteers.

There are certain economic restrictions on the viability of recycling. Recycling stations are dependent upon donations of goods and services from local business and civic groups to meet expenses. They are also dependent upon subsidies, in the form of inflated market prices, to sell materials that are collected.

Take, for example, steel and bimetallic can recycling here in Ann Arbor. The Great Lakes Steel Co., in Ecorse, Michigan accepts cans for recycling, but does not pay money to groups collecting cans because of their low market value. Rather, the National Can Co., in Chicago, Illinois, pays \$20.00/ton to the Ecology Center for cans shipped to the Great Lakes Steel Co. Between July 1971 and July 1972, the Ecology Center received \$1,400.00 from National Can. This rather small amount of money, when compared to the public relations mileage that has been gained by the "Can People" in their exhortations to "Recycle the Can", has distorted the realities of the situation. Can recycling, as we now know it, is not economically viable without being subsidized 100% by can manufacturers.

The combination of volunteer time, donations of goods and services and subsidized prices has enabled citizen recycling to make a very important contribution: the public has become increasingly concerned about the extent of our solid waste dilemma and is forcing greating needed change. Requiring a deposit on beverage containers will reduce the solid waste to be collected at recycling stations. This seems a fitting reward for the many volunteers who have expended so much time and energy in their efforts towards meaningful change in the ways that we handle our growing solid waste problem.

PROBLEMS OF THE RECYCLING PROCESS

There are two aspects of recycling which must be considered: 1). the availability of markets for materials collected, and 2). the environmental costs of recycling. At present, there is only one glass plant in Michigan, the Owens-Illinois Co. in Charlotte, Michigan. This facility, which produces only brown and clear glass, is capable of recycling approximately 9% of the available glass in the state of Michigan. The only way at present to recycle all of the available glass is to ship it to glass plants in other states; because shipping costs would exceed the market price for glass, this option is not feasible. By requiring a deposit on all beverage containers, either an economically viable means of recycling (markets, transportation, etc.) will be developed, or there will be a shift back to the returnable container.

A shift back to the returnable is the most desirable alternative from the standpoint of the environment. Recently, a study was

completed at the University of Illinois, which compared the requirements of a returnable vs. throw away can and glass beverage container system. The investigation concluded that, "The energy required to deliver a unit of soft drink to the consumer is 4.4 times more in throw away glass containers than in fifteen trip (national average) returnables".⁶⁾ In the case of bimetallic cans, the energy required is 2.9 times more. A return to a system that has already proven its workability, that of the returnable container, would serve to lessen an unnecessary strain on our supply of energy resources.

COST TO THE CONSUMER

The consumer pays for "convenience" packaging. Not only does the consumer pay for a beverage when purchasing it in a nonreturnable container, but for the container as well. The proliferation of 10, 12, 16, and 28 oz. containers in 6-packs, 8-packs, 10-packs and 12-packs (coinciding with the introduction of the nonreturnable on the market) confuses cost comparisons and effectively obscures the new added container cost. The only means of comparing beverage prices is the computation of cost per ounce.

On August 10, 1972, a survey was made in five Ann Arbor grocery stores⁷⁾ to determine costs in three containers: the can, the non-returnable bottle and the returnable bottle. The following table contains data for only those brands of beverage⁸⁾ available in all three containers.

Cost Comparison of 1 Oz. and 72 Oz. Beverage in Nonreturnable Bottle, Can and Returnable Bottle

	<u>Cost of 1 Oz.</u>	<u>Cost of 72 Oz.</u> (6 - 12 oz. containers)
Nonreturnable Bottle	\$.014	\$1.01
Can	\$.013	\$0.94
Returnable Bottle	\$.009	\$0.65

By purchasing a returnable bottle instead of a can, the consumer saves 29¢ per purchase of 72 oz. of beverage, the equivalent of six 12 oz. cans. By purchasing a returnable bottle instead of a non-returnable bottle, the consumer saves 36¢ per purchase of 72 oz. or six 12 oz. containers of beverage. It should be emphasized that there is no difference in product purchased, only in the type of packaging. Thus, compared to buying in returnables, it costs 35% more to buy beverage in nonreturnable bottles and 31% more to buy beverage in cans.

Despite these obvious direct cost savings, it is increasingly difficult to purchase returnables. Only one of the stores surveyed carried beer in returnables. One did not carry returnable bottles at all. And in yet another, not only were many items not marked, but it was next to impossible to distinguish the nonreturnables from the returnables.

CONCLUSION

The scarcity of returnables has been coupled with massive advertising for the nonreturnable container. "Convenience" has been sold to the buying public. The pull-top tab, the twist-off cap, no-deposit, no-return, the throw-away, ad infinitum. What is not mentioned is that "convenience" has a price, albeit hidden, and it is not being paid for by industries that have profited from it. The taxpayer bears the cost of removing throw-aways from our roadsides. The consumer pays for the manufacture of each container that is thrown away instead of being refilled for reuse. Taxpayers absorb yet another cost as they fund municipal refuse collections which must collect and dispose of the over 50 billion beverage containers produced each year.

FOOTNOTES

- 1). The Role of Packaging in Solid Waste Management, 1966 - 1976, Midwest Research Institute for U.S. Bureau of Solid Waste Management, 1969, p. 41
- 2). "Bottles, Cans, Energy", Dr. Bruce Hannon, Environment, Vol. 14, No.2, March 1972, p. 13.
- 3). City Treasurer's Office, City of Ann Arbor.
- 4). State of Michigan Highway Department, Maintenance Dept.
- 5). "Recycling: Facts, Fancies, Fallacies", Michigan Earth Beat, March 2, 1972, p. 5.
- 6). "System Energy and Recycling: A Study of the Beverage Industry", Dr. Bruce Hannon, Center for Advanced Computation, University of Illinois, January 1972.
- 7). A&P (Westgate Shopping Center), Beer Depot, Krogers (Packard), Vescios, Wrigleys (Maple Village Shopping Center).
- 8). Coca-Cola, Diet-Pepsi, Pepsi, and Seven-Up.