

Plastic recycling a reality at last

Scientists at Gloucester Engineering not only debunked the theory that plastics cannot be reclaimed . . . they built a machine to do just that

SUSAN R. PLAYFAIR

New York City has a new law levying a tax of two cents on all rigid or semi-rigid plastic containers sold in the city, with the exception of those used for the sale of foods. In addition, Hawaii has passed a bill banning disposable containers; Nevada now requires a five cent deposit on plastic bottles; and Kansas has levied a tax of one cent on disposable containers. Many other municipalities have proposed similar legislation.

Gloucester Engineering, a Massachusetts based manufacturer of machinery for the plastics industry, decided to explore the reasoning behind these legislative acts. After a conversation with Charles N. Barrett, who handles public relations for the Sierra Club, Ingvar Tornberg, a vice president at Gloucester Engineering, concluded that some of the most influential members of the environmental community had not been given enough information about plastics by the plastics industry. The result of this informational void was that a number of environmentalists, in their zeal to improve the environment, were urging their senators and congressmen to limit the use of plastics for reasons that Mr. Tornberg felt were "... not always valid."

Mr. Tornberg and other members of Gloucester Engineering's board of directors proceeded to set up a department to deal with plastic and ecology. The plan was for a three phase operation. Phase I was to be one of self education; phase II was to educate the public; and phase III was to find the way that Gloucester Engineering could best apply itself to improving the environment.

Several discrepancies

In phase I of the project, the company discovered several discrepancies between "common knowledge" and fact. On the basis of a statement by Richard D. Vaughan, director of the Bureau of Solid Waste Management in the United States Environmental Control Administration, a number of consumer groups began conducting a campaign urging housewives not to buy products which came in plastic bottles. Mr. Vaughan's statement was: "When packaging containers manufac-

tured of polyvinyl chloride (PVC) are burned, corrosive gases [hydrogen chloride] are formed that are capable of severely damaging air cleaning devices in incinerators. In addition, if excessive quantities are emitted from the incinerators, damage to plants and buildings may result."

The results of a year long study carried out by New York University's Dr. Kaiser and Dr. Carotti for the Society for the Plastics Industry (SPI) show that, when burned, plastics don't harm incinerator interiors, increase atmospheric pollution, clog incinerator grates, nor add to odor levels. The amount of hydrogen chloride produced by burning PVC was found to be approximately 1/3 that produced by burning coal.

Little lobbying power

In addition, plastics, which are petroleum derivatives, actually increase the temperature within an incinerator thus helping to burn wet wastes, and lower the required energy level. Since plastics are made from the by-products of petroleum distilling, they make no additional use of a natural resource.

One of the problems of the plastics industry has been that it is made up of a number of independent companies who separately have little or no organized lobbying power. New York City's so-called "Recycling Incentive Tax" was in its original form, to include containers made from glass, metal, and paper. Plastics constitute between 2% and 3% of New York's solid wastes, a substantially lower figure than either of the three other materials mentioned. Despite these figures, none of the other materials was included in the bill. SPI is presently challenging the legality of the New York City "Recycling Incentive Tax".

In phase II of the program, Gloucester Engineering began contacting various conservation and environmental groups to discuss the merits of plastic and ecology. It then began mailing pertinent studies, brochures and news clippings to concerned groups and individuals to acquaint them with the facts of plastic and its properties in solid waste disposal.

Throughout phase II, it became apparent that reclamation programs,

while not necessarily the best means of solid waste disposal, have captured the public sentiment, and for every recycling system set up which includes materials other than plastic, plastic runs the risk, by not being included, of being legislated against.

In light of Gloucester Engineering's manufacturing capabilities, phase III became obvious. One of the machines made by the company is the Vertruder 4500, which is capable of reclaiming up to 650 pounds of plastic scrap per hour. Another version of this design, now awaiting production, is capable of reclaiming up to 1300 pounds of plas-



The Vertruder 4500, made by Gloucester Engineering Company, can reclaim 650 pounds of plastic scrap per hour. An upcoming version can recycle 1300 pounds per hour. Displaying the "raw material" and the finished product are Ingvar E. Tornberg, vice president, and G. Wilbur Tracey, president of Gloucester Engineering.

tic scrap per hour. Up to now, the Vertruder 4500 has been used solely in a factory environment, where the plastic is free of jams, jellies, and left-over shampoo.

Questioned about the ability of the Vertruder to recycle the plastic disposed of in household trash, the company's vice president-engineering said it could do the job "... providing that the plastic containers are sorted and cleaned before being fed into the Vertruder." He added, "Slight modifica-

(continued on page 33)

Plastics...

(continued from page 17)

tions in design might be required for use in connection with a municipal reclamation program."

As of this writing, there is no major recycling center geared to reclaim plastics along with glass, metal, and paper. Gloucester Engineering wants to change that by promoting the inclusion of plastics in the recycling program being carried out by a company called Mass Trash, Inc., which will operate inside the Route 128 belt.

Mr. Tornberg said, "We have chosen to work with Mass Trash because we feel that they have the most far-reaching program we have found to date, and they are located nearby so that our trucking expenses will not be prohibitive." Mass Trash intends to begin recycling up to 80 tons of various materials per week, starting in late March or early April of 1972, and to be operating on each university campus in the greater Boston area within a year. With initial support from Governor Sargent's Task Force on the Environment, the Gillette Company, Canada Dry, and the Glass Container Manufacturers Institute, Mass Trash, a non-profit organization, plans to be self supporting once it begins to sell its recycled materials. In addition to Gloucester Engineering, several New England plastics firms have shown an interest in aiding this recycling endeavor either through private contributions, or the intent to purchase recycled pellets, the end product of the Vertruder cycle.

The plan to include plastics in this program will require a full-scale publicity campaign by Mass Trash to acquaint the community with the proper preparation and disposal of plastic containers, a large trucking force to carry the containers to the central location, and some means of sorting and cleaning the containers—either at the household level or at the central location. From there, Gloucester Engineering will transport the sorted, washed plastic to its plant in Gloucester, where it will be ground up and sent through the Vertruder to emerge as plastic pellets, ready for reforming. Next, the pellets will be sent to a number of plastics firms to be made into items such as plastic flowerpots and wheels for children's toys.

"We envision our work with Mass Trash as a pilot project," Mr. Tornberg said. "We expect to learn a great deal from it, and hope the results will be beneficial to other communities, groups, and individuals who would like to improve the quality of our environment."

November 1971



EURO-AMERICAN AIR FREIGHT FORWARDING CO., INC.

SERVES THE WORLD BY AIR

LOGAN INTERNATIONAL
AIRPORT - BOSTON
617-567-6950

DOMESTIC AND
INTERNATIONAL
AIR FREIGHT
FORWARDERS
IATA
CARGO AGENTS

THERE ARE MANY
SOURCES OF SUPPLIES

In-Stock
or Immediate Delivery
CONVEYORS
GRAVITY & POWER
Installation
Available



... BUT ONLY ONE
SORCERER OF SUPPLIES



For Quality Materials
Handling Equipment
at Realistic Prices.

EASTON MATERIALS
HANDLING EQUIPMENT Inc.

Total Systems Capabilities
800 WASHINGTON ST. - 303 EASTON, MASS. 02375
Telephone 617-238-7033

THOMAS E.
SEARS
INCORPORATED
INSURANCE

INSURANCE ADVISOR
ASSOCIATED INDUSTRIES OF MASS.

BOSTON
Park Square Building
31 St. James Avenue
Telephone
426-8300