

SOLID WASTE DISPOSAL: ACTION NEEDED NOW



More and more, box and cartonmakers are baling their waste and shipping it to recycling plants, thus being relieved of the onus of the traditional landfill. Photo courtesy of Chesapeake Corp.

By Chris Howes
Associate Editor

A genuine national crisis is at hand, and for the solution, the American industrial sector is going to have to dig deep into its pocket of resources. On many fronts, in seats

of government local, state and federal, the solid waste problem is fast waking up many to the realization that the responsibility for disposal of mass quantities of refuse will require ingenuity.

The paper and packaging industries are being forced to defend their manufacturing processes be-

cause of intense public scrutiny centered on a number of issues, including biodegradability, recyclability and incineration.

According to "Characterization of Municipal Solid Waste in the United States, 1960 to 2000," a study issued by Franklin Associates Ltd., a Prairie Village, KS-

based environmental consulting firm, 50 million tons of paper and paperboard were disposed of in 1986 — 35.6% of that year's municipal waste stream — and that figure is projected to reach 66 million tons in 2000. While paper products as a whole will constitute an increasing percentage of the waste stream, packaging will decline by weight because of growth in the use of lighter-weight materials, such as aluminum and plastics, according to the report.

Corrugated containers, folding cartons and other paper packaging, at 20.4 million tons overall, accounted for 14.5% of total discards in 1986. The foremost of the three was corrugated containers, with 11.4 million tons — 8% — discarded in 1986.

An estimate by the American Paper Institute indicates that 26.5 million tons of paper were collected in 1988, 21 million tons for recycling in the United States to make more paper and another 5.5 million tons for export to foreign countries for recycling.

Source separation, in which recyclable materials are removed before being shipped to a landfill, seems to be the main answer, at least as far as the packaging industry is concerned. Many states are moving toward this as a solution. New Jersey, which requires collection of three recyclable materials, passed a law in 1987 that stipulates a 25% recycling rate by 1991. The state has also banned the disposal of leaves in landfills and funds local governments from a landfill surcharge.

"By the time a paper sack, box or biodegradable plastic bag has reached the landfill, it's too late," said John Ruston, an economic analyst at the Environmental Defense Fund, New York. "I'm more concerned with what happens to the material before it gets to the landfill. Degradability is a non-issue."

Lack of legislation

While state and local governments are considered fledglings at laws regarding solid waste, the federal government has been in the act an even shorter time.

PRODUCTS DISCARDED INTO THE MUNICIPAL WASTE STREAM

In millions of tons
and percentage of total discards

	1960	1970	1980	1986	1990	2000
Corrugated containers	4.7	9.7	10.0	11.4	12.5	15.8
	5.8%	8.6%	7.7%	8.1%	8.4%	9.4%
Other paperboard	3.5	4.3	4.3	5.1	4.9	5.0
	4.3%	3.8%	3.3%	3.6%	3.3%	3.0%
Paper packaging	2.7	3.4	3.7	3.9	4.6	4.9
	3.3%	3.0%	2.9%	2.8%	3.1%	2.9%
Total paper	11.0	17.4	18.1	20.4	22.0	25.8
	13.5%	15.5%	14.0%	14.5%	14.8%	15.3%

Source: Franklin Associates Ltd.

As a part of the municipal waste stream, corrugated containers have grown faster than folding cartons and other paper packaging, such as grocery sacks. As shown by the projected figures in italics, that trend will continue into the next century. Details may not add to totals due to rounding.

The environmental issue finds its origins in the late 1960s and early 1970s, when it was taken up by what Nancy Wolf, executive director of the New York-based Environmental Action Coalition, calls "leftovers from the 1960s," those who were still fighting other causes like the Vietnam War. Governments at all levels ignored the problem for 10 years to 12 years, and garbage and hazards like toxic chemicals seemed like natural mates for landfills.

Then, in the early 1980s, the waste disposal crisis attracted attention at the state and local levels. Now there are virtually thousands of pieces of legislation floating in the lower governments, which Wolf considers an inevitable response to lack of leadership at the federal level.

While there is not one solid piece of national legislation as of yet, the Environmental Protection Agency has set a goal of a 25% recycling rate within four years and a 50% rate within 10 years, a goal that is realistic, say environmentalists, considering Japan and

some parts of Europe have as a norm a 50% recycling rate.

"Whether President Bush will deal with any of these really big issues, where industry has to change, will be interesting to see," said Wolf. "He has appointed a very good EPA administrator, and that's going to be the cutting edge. The paperboard industry should be meeting with William Reilly because it has something to offer that is very attractive."

However, while most box and cartonmakers bale waste for distribution to mills and other centers of recycling, they would do well to prepare for changes in manufacturing processes as a result of pending legislation.

In the future, the packaging industry may have to view disposability as a criterion for production. Some of the national legislation that is being considered, if passed, will set a legal standard by which all products will require some sort of disposal solution to be built in.

For example, the bleach used in SBS board is being attacked by

PRODUCTS IN MUNICIPAL SOLID WASTE, 1986

In millions of tons
and percentage of discards

	Gross discards	Materials recovery	Net discards
Corrugated containers	19.4 12.3%	8.0 41.2%	11.4 8.1%
Other paperboard	5.4 3.4%	0.3 5.6%	5.1 3.6%
Paper packaging	4.2 2.7%	0.3 7.1%	3.9 2.8%
Total paper	29.0 18.4%	8.6 29.7%	20.4 14.5%

Source: Franklin Associates Ltd.

Out of all product categories in 1986, more corrugated containers were recovered. Other categories that had more products recovered than folding cartons and other paper packaging, which includes grocery sacks, were newspapers, books and magazines, office papers, commercial printing, beer and soft drink bottles, and aluminum beer and soft drink cans. Net discards is that after materials recovery and before energy recovery.

the plastics industry as being dangerous, and rightfully so, according to Wolf.

"The environment can't afford for things to be manufactured just for the way they look," Wolf commented. "The great challenge designers should face is how to make a recyclable package that looks really sharp. Not everything has to be whiter than white. If whiter than white means the environment is suffering, is that a good trade-off?"

Environmental heroes

But paperboard is not really that dangerous of a material. Although the plastics industry campaigns more heartily than the paper industry, promoting itself as the main advocate against solid waste, statistics show that looks may be deceiving. One critical distinction is the use of weight and volume as standards of measurement in analyzing the constitution of solid waste.

"Plastics are something to be

concerned about, largely because for their low weight they take up a lot of space," said Ruston. "Landfill space is the criterion we're concerned about, rather than weight."

Said Wolf: "Weight is absolutely not the right measurement. Weight is truly meaningless in terms of landfills because the Earth doesn't care how heavy a load is. The question is: How much volume is it occupying?"

Wolf's idea is that with some effort put into research, boxes and cartons will be heralded as environmentally safe. "Some of the paper production processes are questionable," she said. "We keep telling the paper people, 'This is your moment, and you should go with it as fast as you can. First, however, you have to examine yourselves.' Each and every thing that goes into the environment has to be examined.

"A carton is an excellent package, by and large. Why the paperboard people are not doing more to

announce themselves as environmental heroes is beyond my comprehension. They certainly have it within their power to take things back from the plastics people, but they are not as aggressive as the plastics people."

Tips for compliance

What can box and cartonmakers do on a day-to-day basis? Vanessa Berge, an authority on environmental law and an associate in the law firm of Wyatt, Tarrant & Combs in Frankfort, KY, recommends in her paper, "How To Avoid Environmental Problems," 10 tips on that subject.

Berge wrote "... most environmental statutes establish penalties of up to \$25,000 per day for each day the problem continues. In many cases, a company must cease operations until the problem is fixed. It is almost always a direct hit on the bottom line.

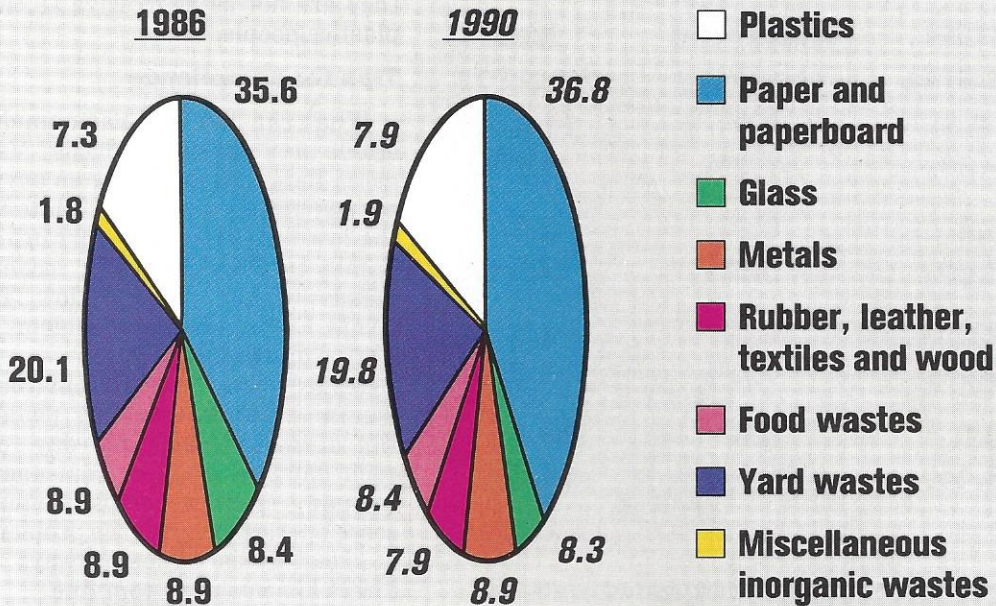
"Part of the problem is the 'it-can't-happen-here' syndrome. We are conditioned by reports in the mass media to think of environmental problems only as major disasters, such as Chernobyl or a massive oil spill. The truth is that your company can get in trouble over something as seemingly small as improper disposal of a cleaning solvent."

The 10 tips she proposes, in condensed form, are:

- put someone in charge of environmental compliance, someone who workers won't be afraid to consult, and create a policy whereby *not* reporting a problem is worse than the problem itself;
- make sure the person put in charge of compliance has been trained to do the job right;
- write out all policies and procedures, perhaps by a consultant;
- define and substitute alternatives for substances that may need to be replaced ("In my experience, I've found that safer options often aren't explored only due to the inertia of repeated use of one item.");
- leave a "paper trail" of compliance;
- spot-check documentation as proof that it is working;
- visit disposal facilities to make

MATERIALS DISCARDED INTO THE MUNICIPAL WASTE STREAM

In percentage of total discards



Source: Franklin Associates Ltd.

While packaging as a whole is expected to decrease in relation to weight, projected figures, in italics, show that paper and paperboard products will continue to grow as part of the municipal waste stream.

sure they are operating legally;

- regarding the previous tip, hire an outside expert to check out disposal facilities, and don't leave the responsibility to the environmental manager ("Most companies, even some very large ones in the carton industry, assign the job of environmental manager to someone as an additional duty. That manager quite often has other pressing duties besides making sure that the company has clean hands.");
- have outsiders conduct environmental audits to be both objective and updated; and
- in the event of a sale or acquisition, determine which company is responsible for hazards that are found when the transaction is finished.

Taking responsibility

In the future, when the furor subsides a little and environmentalists are able to better study the problem, there will be no doubt as to the importance the paper in-

dustry will have had in both a research capacity and action against improper disposal techniques.

The problem, like all problems, will be solved when the heat becomes too intense, so to speak. Take, for example, the famous Is-lip barge, full of waste, that left Long Island and wandered the East Coast until the waste was finally burned and buried back in Long Island. That community is now a model one, with state-of-the-art collection and source separation requirements, as well as stringent requirements for every home-owner in the community.

"If I were to paint what I would consider a good scenario for the future, recycling would be commonplace," said Ruston. "We would reduce or eliminate the use of metals in inks, pigments and stabilizers in consumer products, and we would see more uniformity in packaging so that it is more recyclable."

"Industry responsibility is a

five-part process, beginning with recognition of the crisis at hand," maintained Sam Posner, former president of the Pro-Environment Packaging Council, based in New York. "Step two calls for ownership of the problem. Rather than just nod and appear sheepish, however, the time has come to put our money where our mouth is. Financial commitments to expand markets for wastepaper, start up paper recycling programs and promote participation are essential. Action is the fourth requirement, not tomorrow or when the nation's landfills are completely exhausted, but today. Finally, we must make it our responsibility to educate consumers and municipalities on how to carry out low-tech solid waste management options."

What lies ahead? Will the future be full of red waste tape? Much of the outcome of that decision will be up to the packaging industry. ■