FOLDER NO. 9246

The DEMPSTER CONTAINER TRAIN SYSTEM

WITH THE

DEMPSTER DUMPMASTER®

THE CONTAINER TRAIN SYSTEM

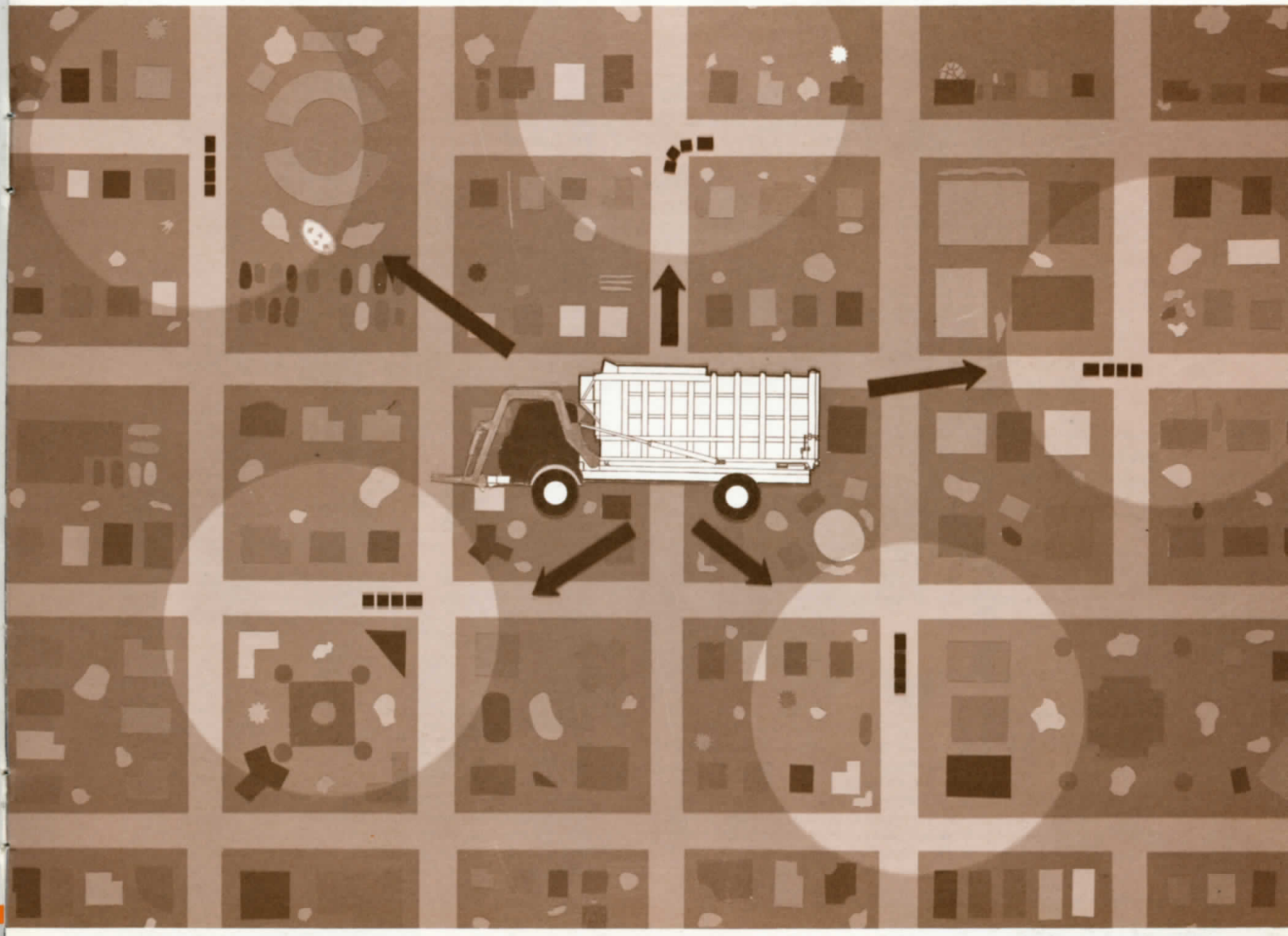
■ The Dempster Container Train System is a new concept of low-cost refuse collection for residential areas. It is an extension of the principle of a self-loading front-end packer emptying the contents of a container into its hopper and reducing the volume of material by action of a packer plate. This principle was based on a container receiving and storing refuse that was brought to it from other refuse generation areas. However, under the train system, the container is brought to the refuse and, in turn, to the packer unit. Basically, the train system consists of three or four containers mounted on wheels and coupled together which are towed by a low-investment, lightweight truck of the GM Scout or the Jeep class of vehicle. These trains move through residential areas on house-to-house collection routes and are loaded by collection crews.

When the containers are full, they are uncoupled and each is emptied by the Dempster DUMPMASTER "Mother Unit" which compacts the material to make big payloads possible on every trip to the disposal area.

THE MOTHER UNIT

The *Dempster Dumpmaster* Front-End Loader serves the function of emptying the loaded containers, compacting and conveying their contents to the disposal area. No container train system is any better than its "Mother Unit" and the Dumpmaster is a rugged, proven performer that delivers the day-in, day-out, year-in, year-out dependability that is necessary for the successful operation of any equipment. Seven years ago, the first CA Dumpmaster was delivered, and as of today, it is still rendering efficient, satisfactory service to its owner.

HOW IT WORKS...



■ In the photo at left, the Dumpmaster is in the process of emptying a full container train. When the crew is ready for the Dumpmaster, the containers are uncoupled and moved approximately two yards apart. The Dumpmaster then approaches from the rear and empties the first container into its hopper. The container is then lowered to the ground and the loading crew rolls it forward and couples it onto the draw bar of the truck. Without having to back up at any time, the Dumpmaster empties the other two containers which are then recoupled to the truck. The container train then resumes collecting work on its route. This process requires only three to five minutes interruption of collection work, as compared with the 45 minutes to an hour the average packer must be absent from the route while traveling to and from the disposal area for emptying.

Container trains are generally used in teams of four or five, all served by one Dumpmaster "Mother Unit". In some cities, two-way radios are used to summon a "Mother Unit". However, most operators find that they can establish a rendezvous system which is most efficient.

THE ECONOMICS . . .

Dempster Container Train

INITIAL INVESTMENT

■ Compared to an effective conventional packer truck, one Dempster container train represents a fraction of the investment for the heavier equipment. Three simple containers, mounted on lightweight wheels, with stub axles and a $1500 prime mover light truck, plus one-fifth the cost of a Dumpmaster is the extent of the investment in a single three-unit container train.

OPERATION

■ Operational expenses connected with the container train system are at a minimum. The light, bulky trash in each container throws very little weight on the wheels and axle. Since the train containers never go to the disposal area, there is little danger of picking up punctures from broken glass, wire, nails and other cutting objects. Gasoline consumption is limited to four or five gallons per day per train. This, with a one-fifth pro-rata share of the Dumpmaster's gas consumption, limits the fuel outlay to approximately 10 gallons per day for each container train.

MAINTENANCE

■ Maintenance for the individual container train is limited to that necessary for a light horsepower truck, a one-fifth pro-rata share of the Dumpmaster maintenance and the small amount of work necessary on the container. Having no moving parts, other than the stub axle mounted wheels, it is understandable that maintenance work on the train is practically nil.

PERFORMANCE

■ There are several reasons why a container train will outcollect a conventional packer on carry-out residential service, but the most important one is the fact that the train never leaves the collection route. Crews stay busy throughout their entire eight-hour work day collecting refuse. Then, crews have a large storage area in which to dump their refuse. This generous four to five cu. yd. area and no overhead obstructions enable refuse to be dumped with a single throwing motion as opposed to the banging, rolling and care that must be taken not to spill materials when emptying a receptacle into the restricted one or two cu. yd. hopper of a conventional packer. Some municipalities report approximately 20% faster pickup with the train system over the packer.

Conventional Packer Truck

■ A conventional packer truck and the heavy-duty, high horsepower chassis it must be mounted on, will range in the neighborhood of $11,000 to $12,000. Five of them, necessary to match performance of five low-cost container trains, would cost approximately $60,000 or more than twice as much as an equivalent container train system, including the "Mother Unit".

■ The heavy horsepower conventional packer chassis consumes approximately 30 gallons of gas per day for motive and compaction power . . . about 20 gallons more per day than that consumed by a container train and its share of the mother unit's gas usage. Complicated lubrication must be applied periodically; also, tires must be exposed to the jagged elements of a landfill and be frequently replaced.

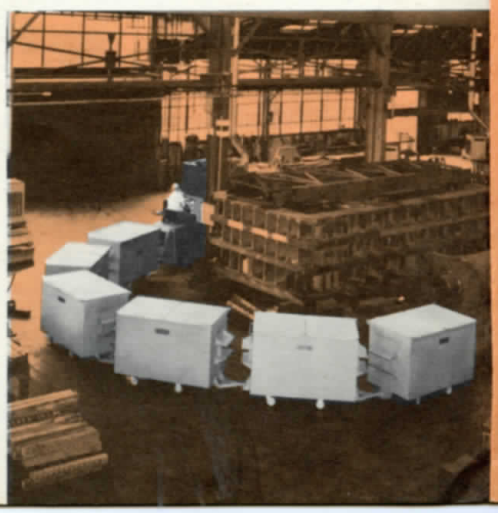
■ Maintenance on the complex hydraulic packing system of the conventional packer, plus work necessary for its heavy horsepower chassis is many times that of the container train. Repacking of hydraulic cylinders, replacing worn out moving parts, new motor blocks every two or three years and chassis replacement every four or five years are just some of the items that combine to make packer truck maintenance a big item in your budget.

■ The packer truck's biggest disadvantage is the two to three trips it must make to the disposal area daily (depending upon the type of route it is working) which leaves its collection crews the choice of standing idle or going to the dump for the ride. Some municipalities, employing three loaders and one driver on a route, estimate they lose in the neighborhood of six man-hours a day because of this shortcoming. Additionally, with rear-end loaders, the constricted hopper area and overhead obstructions slow down the loading operation plus the excessive caution the driver must exercise because the men are behind him and out of sight during the loading operation. An additional factor is that the other men must stand clear and wait for the duration of a packing cycle when the hopper becomes full, adding to the lost time in motion.

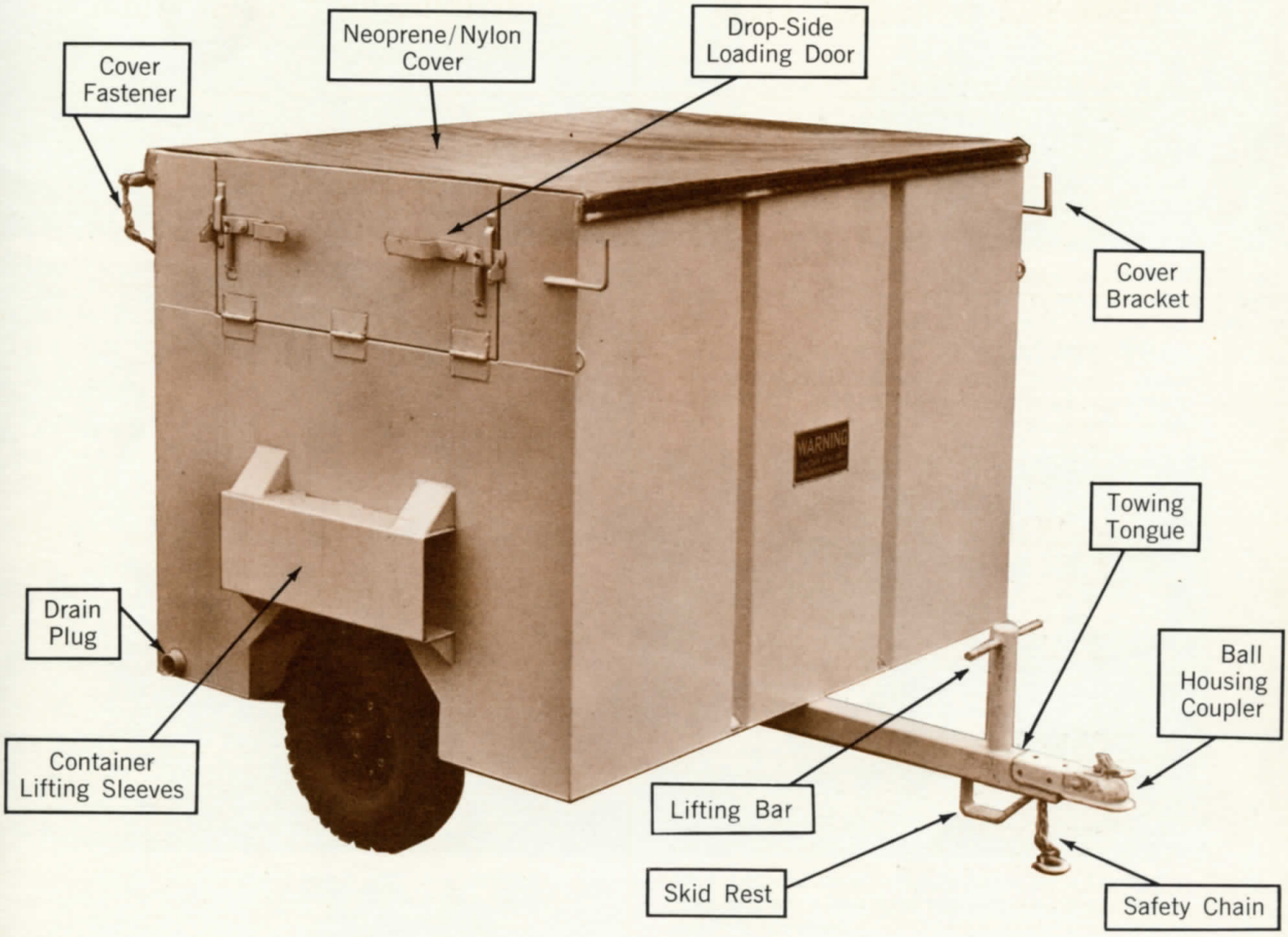
a brief history of the Dempster Container Train concept . . .

■ The concept of a lightweight, inexpensive truck hauling moving storage space through a residential area was originated by Dempster Brothers in 1947, with the advent of their K-9 Kolecter system. This method employed one or two wheel-mounted containers towed by a pickup truck with the full container being dropped off for handling by a Dempster-Dumpster unit. Later, the idea of taking a whole train of wheel or caster-mounted containers inside industrial plants was developed.

Some six years ago, the Dumpmaster container train concept for industrial use was brought to a high degree of perfection by Dempster engineers whose research in making containers track around corners and down aisles led to the balance and draw bar radius factors that make the residential container train a success.



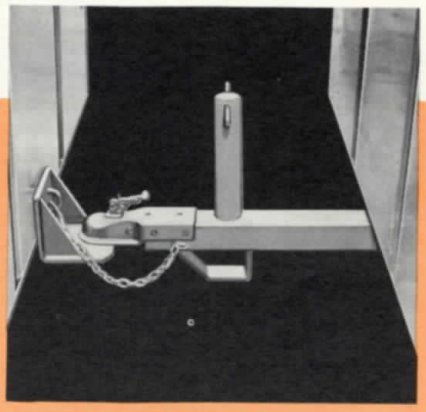
NOMENCLATURE . . .



In addition to the drop-side models, an angle-front model with outrigger wheels is also available. This model has all the features of the drop-side model, including the long life, neoprene/nylon anti-scatter cover.

CONTAINER FACTS

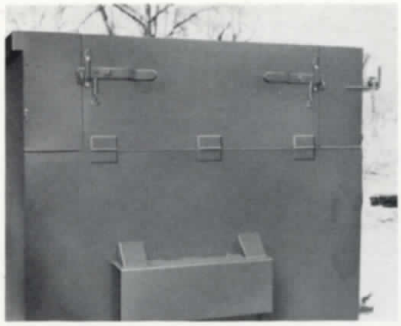
■ Train containers are available in two models, the recessed wheel and outrigger wheel, and in two sizes—four and five cu. yd. All models are fabricated of the finest steel with extra strength welding, top quality components and reinforcement at all points of strain and wear. To reduce maintenance costs, each container receives the famous Dempster eight-step shot-blast and painting finish including a special epoxy paint which is tough and long-lasting. Each container is scientifically balanced so that one man at the lifting tube bar can easily move a fully loaded container.



Here is a close-up of the coupling mechanism and the lifting bar featured on the train containers. A simple flip latch releases the locking socket from the ball connection. The "T" lifting bar is designed to permit use by two men where necessary. A safety locking chain is provided.

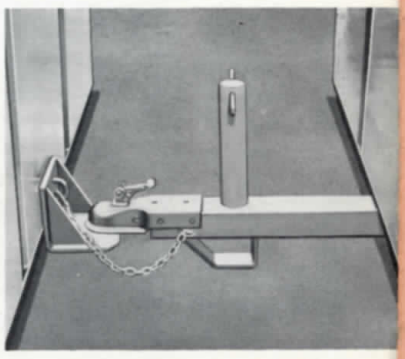
FEATURES . . .

LOW LOADING HEIGHT To assure low loading height, the Dempster Train Container has a hinged door which drops down, substantially reducing the height of the sides. A pair of spring-loaded latches secure the door when it is raised to contain refuse as it nears the top.



MANEUVERABILITY The Dempster Container Train is highly mobile. It goes down alleys, into hard-to-reach places and "turns on a dime." Photo at right shows truck and container train making a U-turn at the end of an exceedingly narrow street.

EASE OF HANDLING The Dempster Train Containers are perfectly balanced, making it easy for one man to handle them during coupling and uncoupling operation. The release of the coupling mechanisms is accomplished by a small latch. Close-up at far right shows lifting bar and coupling mechanism.



STABILITY The Dempster Container Train not only tracks perfectly around tight corners and other close places, but maintains a high degree of stability in operation under adverse conditions. The two photos at right show it negotiating extremely steep hills under icy, snowy conditions.

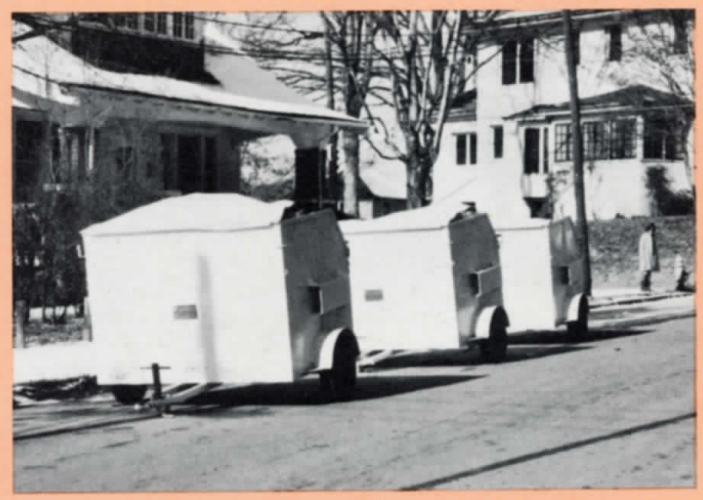
VERSATILITY The Dumpmaster "Mother Unit" is extremely versatile and when not in use serving container trains, it can be used for collection of big capacity storage containers in commercial areas ranging up to 8 cu. yds. in capacity. It can also be used on curb-side and alley hand-collection routes.

THE CONTAINER TRAIN AT WORK...

TWO-MAN CREW The size of crew used is determined by the distance of the house from the street, and a number of other factors. Crews range from a driver and three loaders to a driver and one loader. In the two-man system, loader and driver switch off as illustrated in this installation at West Haven, Tennessee.

ALLEY PICKUP Because of its mobility, the container train is well suited to alley pickup. Here a member of the loading crew empties refuse into a train container in a narrow alley.

A tight U-turn is negotiated by outrigger type containers, being operated on icy streets in Winston-Salem, North Carolina.



On a residential street in Winston-Salem, North Carolina, three containers have been uncoupled and spaced for emptying operations.

When the refuse nears the top, the side doors are raised so that it may be filled to capacity.

Connecting draw bars space containers efficiently for loading crews to empty refuse from a position between the containers.

A close-up of a train container just before it is rotated over the hopper of the "Mother Unit" for emptying. The neoprene/nylon cover is released from its moorings but left in place during dumping operations to restrain scattering of refuse.

When a container is full, the neoprene/nylon cover is pulled over the refuse and is locked down to prevent escape of any material during transit.

When the containers are emptied, they are rolled forward manually and recoupled behind the truck. Here a third container is being moved into place by two men.

Container Train moves through residential areas creating no more noise or stir than a passenger car.

a dollar and cents case history...

WINSTON-SALEM, N.C.

The city of Winston-Salem has run exhaustive tests on the Dempster Container Train System and is currently phasing-in on an installation so complete that it will collect the entire residential refuse of a city of 120,000 plus an additional 18,000 residents currently being annexed. Winston-Salem operates on a system of three men to the train with five trains being assigned to one "Mother Unit" Dumpmaster. Involved in the complete installation will be 81 containers, 30 lightweight jeep-type vehicles and 12 Dumpmaster "Mother Units". On the basis of the current installation, city officials believe they will be able to take care of the newly annexed area with no appreciable increase in the budget. Costs per house were reduced from 11.4 cents to 10 cents, amounting to some $90,000 a year in projected savings over the old system.

Winston-Salem is operating its trains on a fraction over four gallons of gas per day; reduction in time spent in collection work has been appreciably reduced with routes formerly requiring eight hours now being picked up in approximately 6½ hours.

One of the main reasons for this is the elimination of travel time to and from the disposal area necessitated by conventional packer trucks. Winston-Salem is just one of the many progressive cities currently in the process of switching from conventional packer trucks to this advanced new method of refuse collection.

ONE OF THE
DEMPSTER DUMPSTER®
SYSTEMS

Litho in USA