Redefining re-refining

by David Stitzel

A market development effort for re-refined motor oil targets motor vehicle fleets.

In June 1992, Washington Citizens for Recycling initiated efforts to increase the use of re-refined motor oil by public and private sector vehicle fleets. After assisting in the establishment of a 300,000-gallon-per-year regional used oil collection program the previous year, WCFR felt it important to "close the loop" by improving market share for re-refined oil.

How much is out there?

Estimating the volumes of new, used, processed and re-refined oil is slippery business. Definitions of lubricating oil vary, literally from one study to the next, with some analyses including aircraft oil or hydraulic oil, and other analyses excluding those oils from the definition of lube stock. Similarly, some estimates include drain oil from farm and fleet vehicles, while other studies exclude these volumes.

For example, recent estimates of the volume of virgin automotive oil lubricants sold in the U.S. range from 1.4 billion gallons (1) to 2.2 billion gallons (2). In Washington State, WCFR estimated the volume of lube oil consumption for all cars and light trucks — including fleets and hydraulic oil — at approximately 27 million gallons annually (3). This figure is nearly twice the 14 million gallons estimated by the American Petroleum Institute to be sold annually into the state as passenger car motor oil for nonfleet use.

Even if general agreement cannot be reached on lube oil volumes in the U.S., what is clear is that the present processing capacity of North American re-refineries — at less than 200 million gallons per year — is only a drop in the barrel compared to the total volume of vehicle lubricants and other spent oils currently handled through bunker fuel and other markets.

Of further interest is the potential economic advantage of re-refineries over virgin lube plants. One study on this subject, "Economics of Re-refining Used Lubricants," concluded that, "Even if a typical new re-refinery operates at much lower outputs than a fully depreciated plant to make virgin lubes, overall costs are very competitive" (4).

Starting out

Continuing improvements in re-refining technology have now tempered past disputes about the quality of re-refined oil. Further-

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more, the energy conservation, environmental protection and foreign trade implications of a healthy re-refining market are all positive. What is required now is to increase the market for this valuable commodity.

Funding for WCFR's re-refined oil market development program comes from the Clean Washington Center, the state's market development agency, which is organizationally under the wing of the state Department of Trade and Economic Development.

This funding has allowed WCFR's project staff to establish a clearinghouse of information addressing several topics:

- What fleets are currently using re-refined oil?
- What quality standards does re-refined oil meet?
- What are the potential environmental, economic and public image implications of switching to re-refined oil?

Some facts about re-refined motor oil

- ✔ Hydraulic oil, as well as lubricatng oil, can be made from re-refined motor oil.
- ✔ Only the base lubricating stock constituent of motor oil can be made from re-refined oil, but that portion accounts for 75 to 95 percent of the product's volume.
- ✔ Motor oil, whether virgin or re-refined, is tested and rated nationally by the American Petroleum Institute.

Following the fleet

The staff's first challenge was to identify and contact public and private vehicle fleets to persuade them to switch their existing lubricants to re-refined oil. In approaching a company to discuss the topic of converting their fleet to re-refined oil, three techniques were identified: the Executive Approach, the Fleet Manager Approach, and the Public Relations Approach.

The Executive Approach is based on a top-down strategy, where the emphasis is placed on convincing high-level decisionmakers of the importance of using re-refined oil. In the public sector, these individuals include county council members or public works administrators, while in the private sector, comparable decisionmakers are company presidents and chief executive officers.

The Fleet Manager Approach hinges on winning the confidence of the fleet administrator or the chief maintenance officer, whether in the public or private sector. Such individuals wield considerable influence. Furthermore, people in these positions may look askance at re-refined oil, often associating it with the poor quality recycled oils of the past.

Finally, the Public Relations Approach involves selling the consumer relations or another related department on the benefits of switching to a re-refined product. For example, a cloth diaper laundry service now in the process of switching its leased fleet intends to publicize the move in its existing environmental marketing message (5).

These approaches can be used singly or jointly. Different approaches leading to conversion work for different companies and municipalities.

Projecting success

Each attempted conversion raises its own challenges and opportunities. Some businesses are more concerned with warranty issues, others with an overall environmental image or with a mandatory recycled content procurement policy.

These constellations of concerns must be creatively and flexibly addressed. In some cases, businesses have been willing to consider switching their hydraulic lubricants as a first step, while withholding a decision on engine oil. In another instance, a company that leases its fleet has been willing to work with its leasing agency to set up a re-refined

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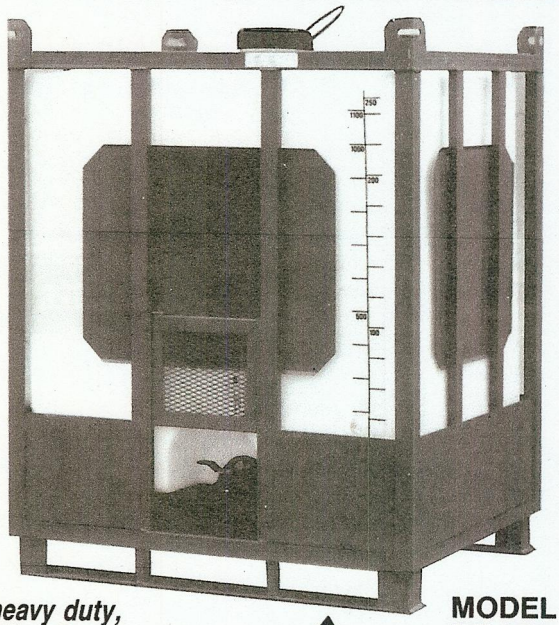

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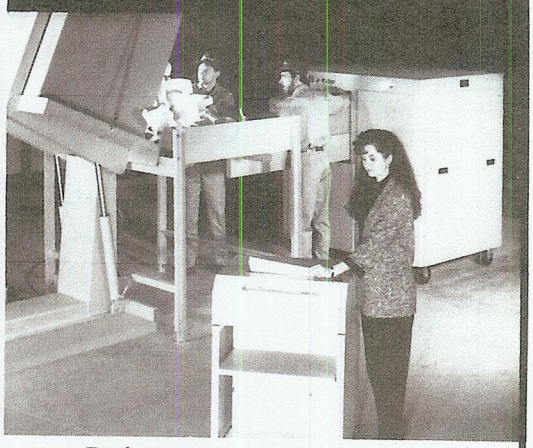

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oil pilot project. One university considering a switch in its fleet said it will begin with three-wheeled traffic carts before committing to its whole line of vehicles.

Three major public sector re-refined oil pilot projects have been underway for well over a year: the City of Olympia (the state capitol), Snohomish County and the state Office of Motor Vehicle Services. For example, Snohomish County's fleet consists of 796 different vehicle and equipment types, ranging from 16 h.p. diesel engines to high performance police car engines. The oil is sampled and tested on a regular basis by a local laboratory, with consistently positive results.

As more public and private sector fleets have begun using re-refined motor oil and competition increases, the price of re-refined oil has steadily dropped. King County, the most populous county in Washington, recently went out to bid for its lubricants contract — the lowest bid it received was from a producer of a re-refined product. The bid winner was a major oil company that purchased the re-refined oil from a local oil blender/manufacturer, and then shrank its own margins to win the bid.

Regardless of dropping prices, it is the required volume that most significantly drives price. Thus the small volumes involved in many re-refined oil pilot projects often result in noncompetitive pricing. This situation, as with other early market development efforts for recycled content products, requires that the procuring entity commit to buying recycled, strongly believe that it is doing the right thing, and realize that its payback may come only in the form of free publicity and public recognition, not cost savings.

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As part of the Earth Day celebration in Seattle, a city councillor replaced the oil with re-refined oil in a motor fleet vehicle.

End notes

(1) *National Petroleum Fact Book*, 1992.

(2) Brinkman, D., "The role of re-refined lubes in the 1990s marketplace," paper presented at the National Petroleum Refiners Association National Fuels and Lubricating Meeting, November 1990.

(3) Analysis by Washington Citizens for Recycling in 1992 based on University of Illinois methodology as published in *Used Oil Management in Illinois*, B. Hegberg, W. Hallenbeck and G. Brenniman, University of Illinois Center for Solid Waste Management Research, Office of Technology Transfer, July 1991.

(4) McKeagan, D., "Economics of Re-refining Used Lubricants," *Lubrication Engineering*, May 1992.

(5) Although the truck leasing agency was comfortable with the diaper service using re-refined motor oil in its leased vehicles, it did not want to be included in any promotional efforts, by the diaper service or WCFR, out of fear that its other clients might hesitate to associate with a leasing agency that utilized "used oil" in its vehicles.

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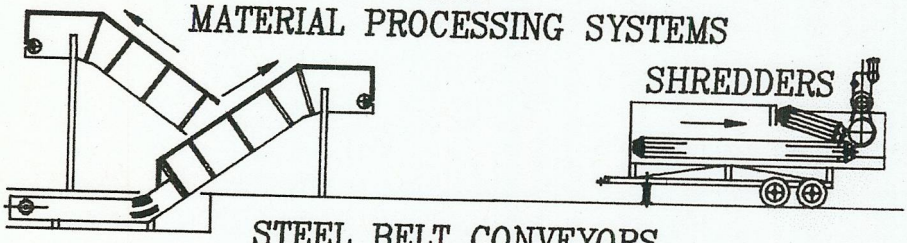

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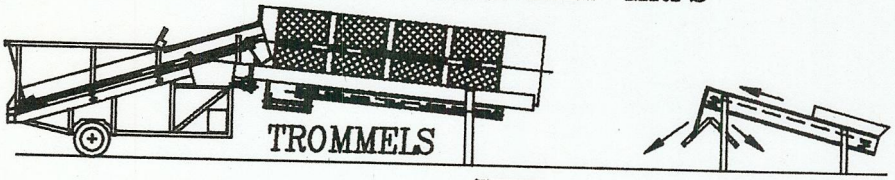

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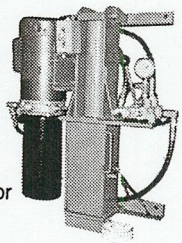

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