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In September 1992, customs agents at Miami International Airport saw something odd about the cargo coming off a flight from Cali, Colombia. Among the luggage were two dog kennels, the type used by people who travel with their pets.

They were ordinary carriers, made of sturdy fiberglass with a metal grille door. But the customs agents noticed something unusual—there weren't any dogs inside.

Why would somebody ship a dog carrier, at a cost of $138, and not ship the dog? Because the shipment originated in Colombia, an obvious suspicion was that somebody might be trying to smuggle drugs into the U.S. The agents inspected the containers inside and out. There were no false compartments. Drug-sniffing dogs didn't detect any suspicious odors.

Acting on a tip, the agents let the carriers continue to Los Angeles, where two men picked them up at the airport. The Federal Bureau of Investigation (FBI) tailed the men and arrested them for smuggling cocaine.

MYSTERY MATTERS

The Canine Cocaine Caper

by Bruce Goldfarb

Where were the drugs concealed?

Laboratory analysis proved that the carriers were made of cocaine—the fiberglass itself was composed of almost 30% cocaine by weight. Each 23-kilogram (50-pound) carrier contained 7 kilograms (15 pounds) of cocaine, with a street value of $500,000.

"Cocaine plastic" is one of the newest methods drug smugglers have developed in the increasingly sophisticated game of cat-and-mouse they play with law enforcement.

Creating cocaine plastic on the shipping end is complicated. "The chemicals to make plastic can be bought, but you need lots of equipment, such as injection molding machines," said Special Agent Roger Martz, chief of the FBI's chemistry lab in Washington, DC. "It's pretty elaborate."

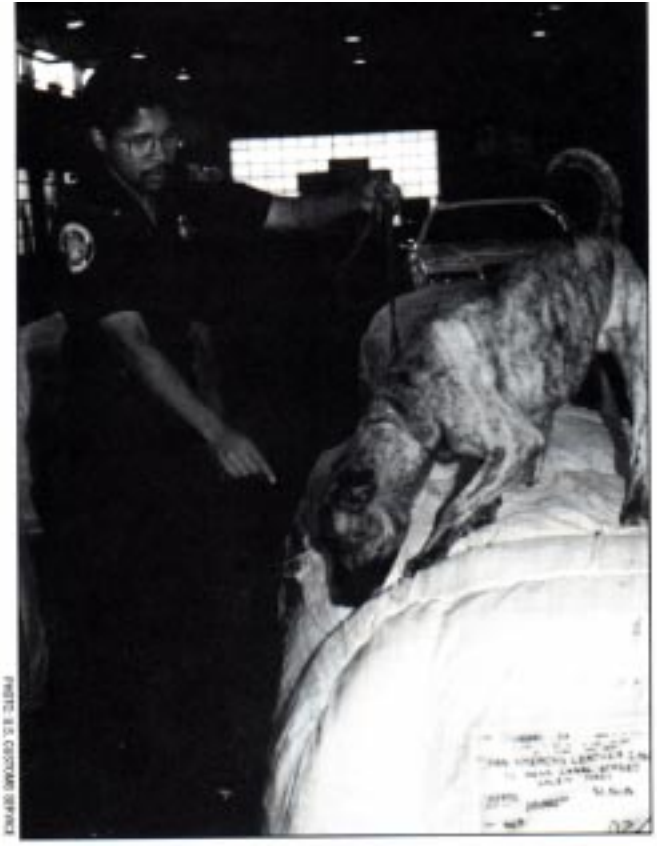
Nearly any plastic can be used, according to Roger Canaff, Deputy Lab Director at the Drug Enforcement Administration's (DEA) field laboratory in Washington, DC. "Just about all plastics, at some point, can easily be in the molten state," he says. "During the time it is in the liquid state, cocaine can be introduced into the mix."

In this case, smugglers first purchased pet carriers made by a legitimate Texas manufacturer. They removed all the metal fittings, made molds of the plastic cases, then fabricated new cases of cocaine-laced fiberglass plastic. With the original hardware installed, the carriers were virtually indistinguishable from the real thing.

Smuggling cocaine by traditional means—fast boats or low-flying planes—is dangerous and expensive. According to the FBI, it costs about $3,000 per kilo of cocaine, or a total of more than $40,000 for the quantity in the two carriers. But shipping the cocaine-laced carriers cost only $276 in air freight.

Usually the drug-sniffing dogs used by customs agents can smell cocaine. But, when encased in plastic, cocaine cannot be detected by the dogs. "Nobody really knows what the dog detects in cocaine," says Martz. "What might be

PHOTO: DOSKOCIL MANUFACTURING CO., INC.

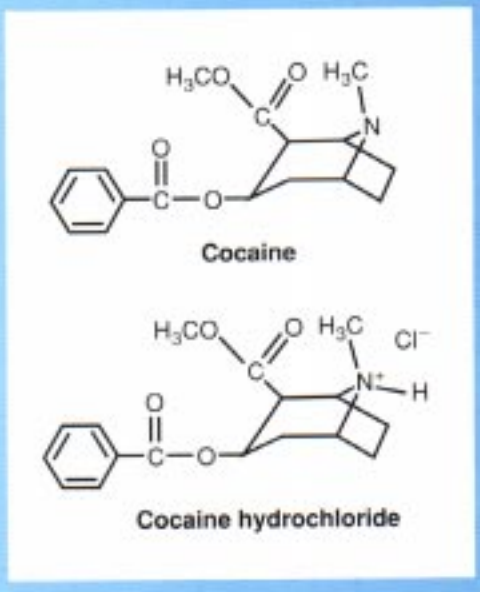


The U.S. Customs Service uses dogs to check incoming freight for drugs , but when smugglers mold cocaine into plastic parts, the dogs cannot detect a scent.

Dissolving cocaine

When the cocaine-containing plastic arrives at its destination, the smugglers retrieve the drug by a chemical process similar in principle to that used to extract the drug from the leaves of the coca plant.

In its natural state, cocaine is an alkaloid that is insoluble in water. "If it were soluble in water, it would wash out of the plant after the first rain," explains Canaff. The smugglers grind up the cocaine-containing plastic, then soak the powder in a dilute solution of hydrochloric acid, HCl. The acid reacts with the cocaine and changes it to cocaine hydrochloride, which is very soluble in water.



The cocaine hydrochloride dissolves, leaving the plastic particles on the bottom. The mixture is decanted (liquid is poured off carefully, leaving solid on the bottom) and filtered to remove the plastic.

"At this point, you can do one of several things with the cocaine hydrochloride solution," says Canaff. "You can let it sit until the water evaporates... the residue is cocaine hydrochloride salt. It's time-consuming, but it's one way to do it." Or it can be converted back to cocaine alkaloid, which drug users call "free base" or "crack."

An alkali, such as sodium hydroxide, NaOH, or sodium carbonate, Na_2CO_3, is added, and this reverses the acid reaction and reforms cocaine. The solution is then shaken with an organic solvent, such as ether, which forms a separate liquid layer, on top of the water. The cocaine dissolves in the ether layer, which is then decanted to separate it from the water. When the ether evaporates, cocaine alkaloid crystals remain.

happening is that the chemicals that the dog smells are being suppressed, held in by the plastic, and are not as volatile."

A simple chemical process

Getting the drug out of the plastic sounds complicated but is chemically a simple process (see box, Dissolving cocaine). "Retrieving the cocaine isn't particularly high-tech," says Canaff. "All it takes is a few readily available chemicals and basic knowledge of chemistry."

Although cocaine plastic can fool drug-sniffing dogs, U.S. Customs and law enforcement agencies have developed new techniques to detect the drug. A high-power vacuum is swept over the suspect plastic, and the air is forced through a paper filter. The filter is burned at a high temperature in an ion mobility spectrometer, which can classify many types of compounds. "Within a matter of seconds we can tell whether or not cocaine is present," says Martz. The feds have regained the upper hand, for now.

Bruce Goldfarb *is an independent writer living in Baltimore, Maryland, who specializes in topics dealing with science and medicine.*

REFERENCE

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