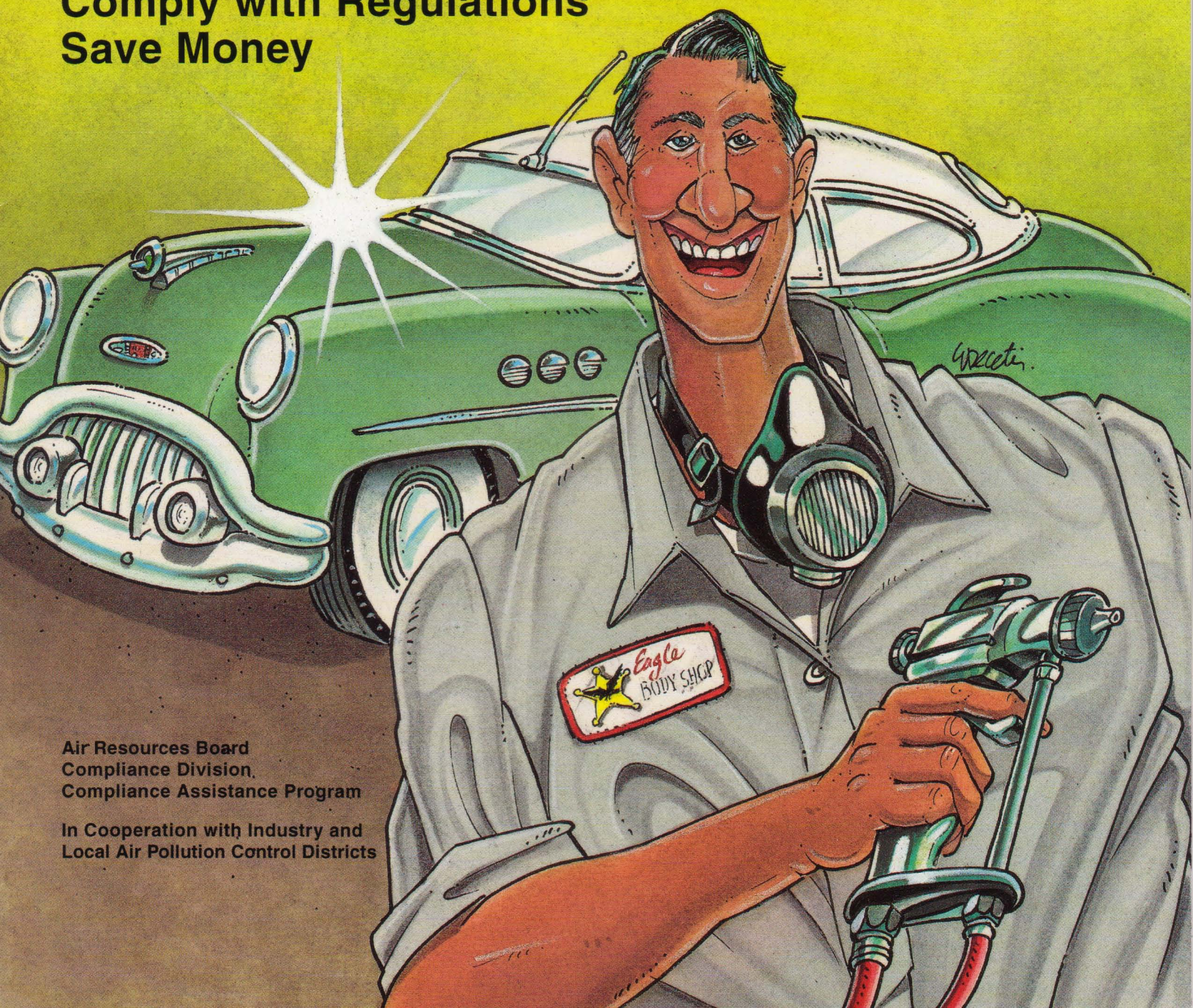
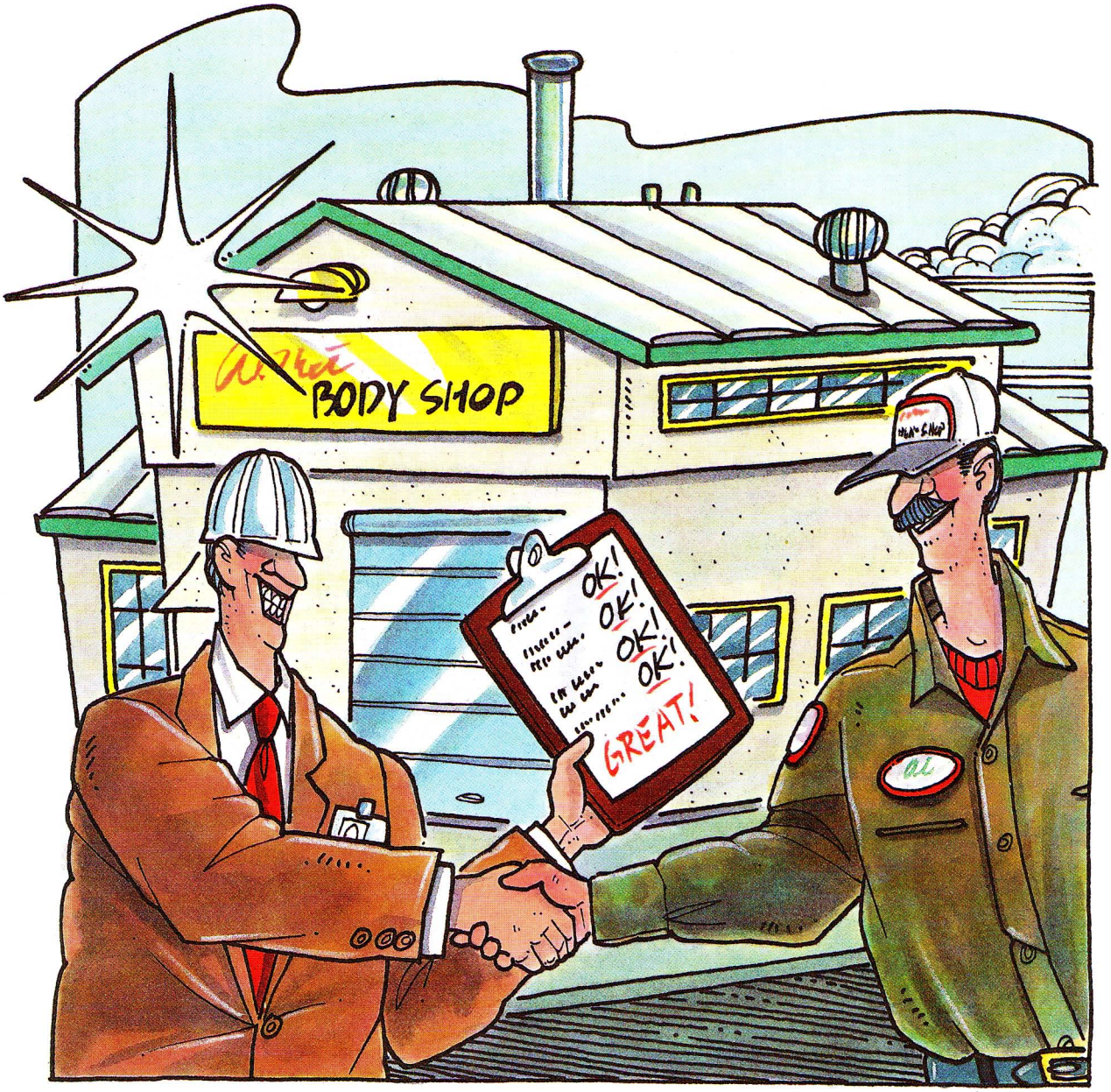
AUTOMOTIVE REFINISHING
SELF-INSPECTION HANDBOOK

Reduce Air Pollution
Comply with Regulations
Save Money



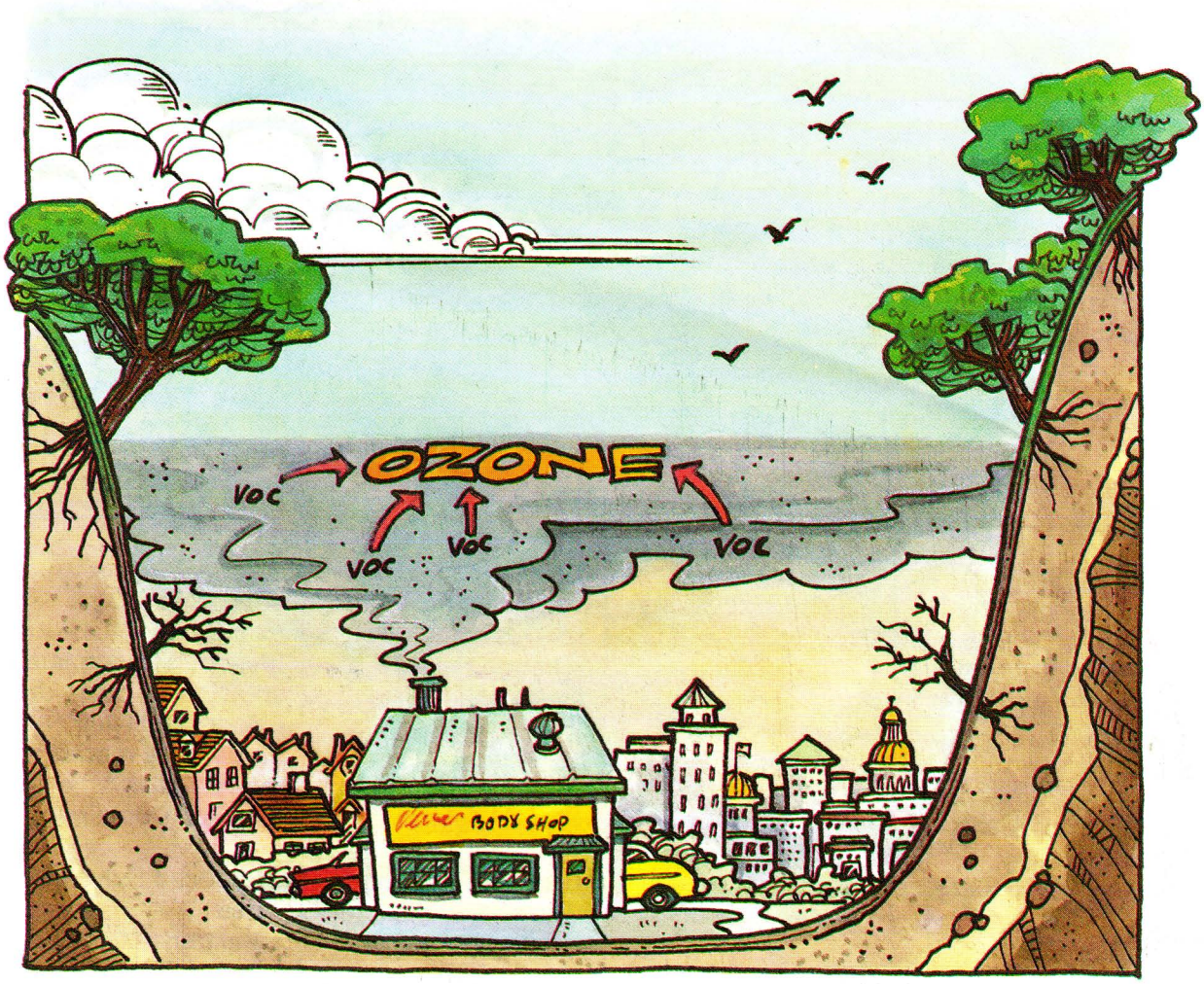
Air Resources Board
Compliance Division
Compliance Assistance Program

In Cooperation with Industry and
Local Air Pollution Control Districts



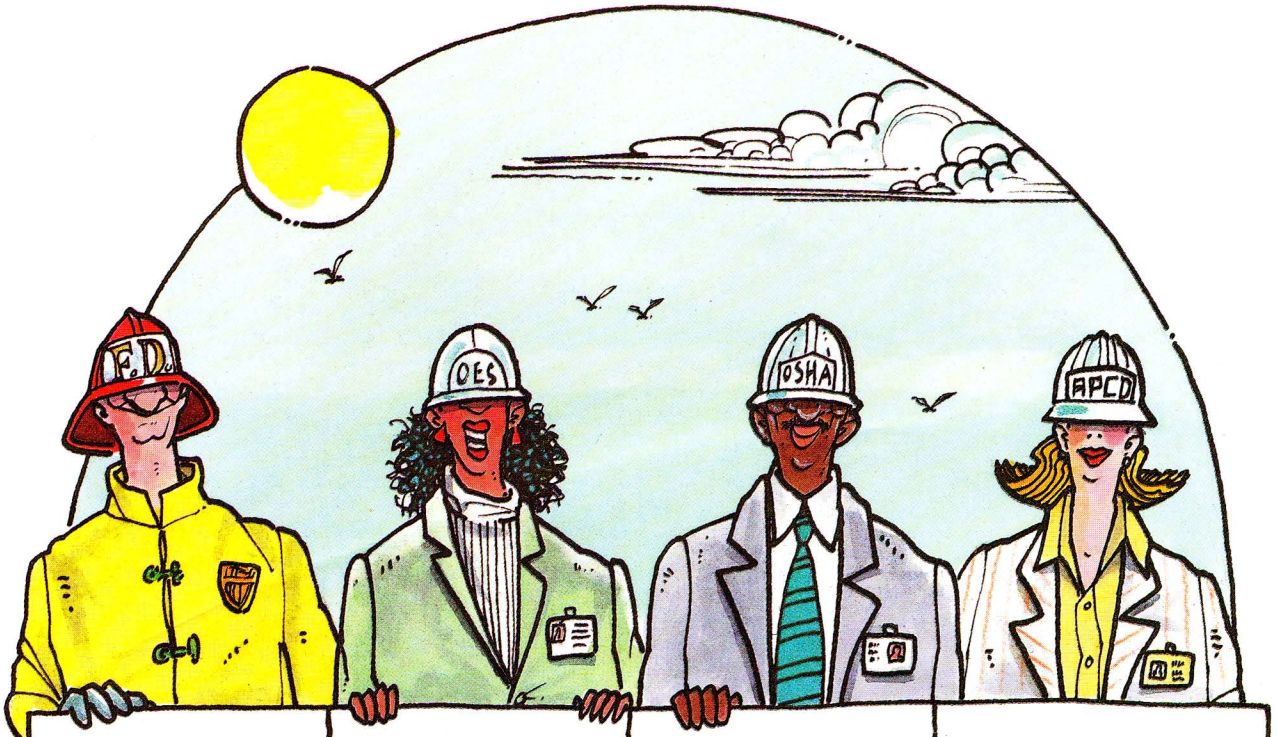
Air pollution increases health care costs and property upkeep. California air pollution control agencies have identified the automobile refinishing business as one of the many which contributes to air pollution. This handbook's purpose is to help you understand and follow the air pollution laws. Following the law can save you money and improve the environment. Read on. See what **you** can do to clean up our air. **You can make a difference!**

Minimize Smog Forming VOCs



Many organic **solvents** used by industry contain **volatile organic compounds** (**VOCs**). VOCs combine with other pollutants in the presence of sunlight to form ozone, a major component of smog. Ozone, a corrosive, trapped in the air we breathe damages our health, crops, and property. State and Federal laws require individual Air Pollution Control Districts (APCD) and Air Quality Management Districts (AQMD) to regulate the emissions of VOCs. Automotive refinishing operation VOC emissions come from solvents evaporating from paint and solvent application, cleanup of parts, and storage.

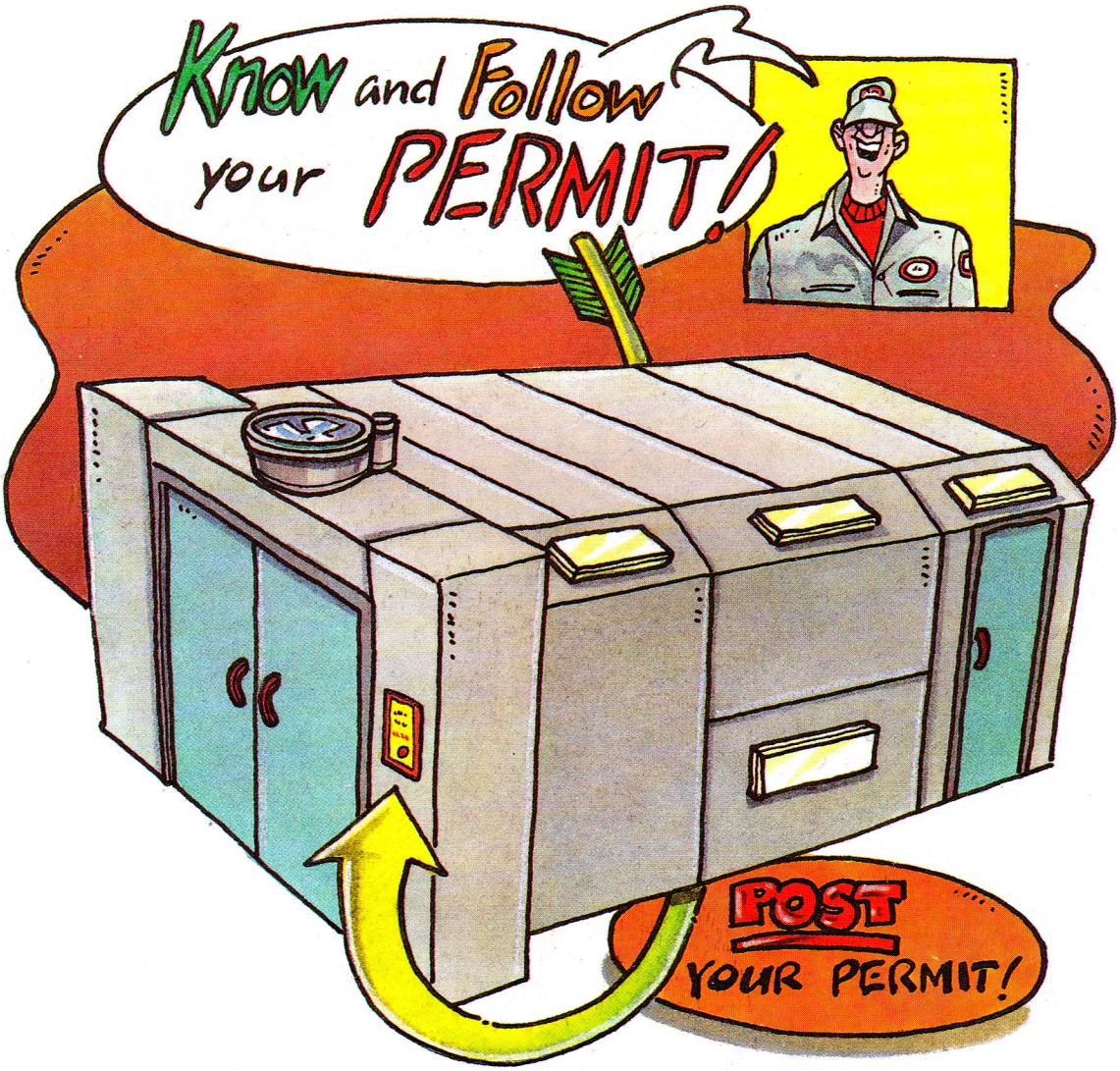
Who Regulates My Shop?



Fire departments focus on fire safety and require safe storage and use of flammable materials. They require you to:	Health Services and Office of Emergency Services ensure the safe disposal of hazardous wastes. They look for:	OSHA is concerned with reducing workers' exposure to harmful chemicals. To protect the worker, OSHA may require:	APCDs/AQMDs attempt to reduce evaporating VOCs and respond to complaints about paint odors and overspray. Their regulations require:
o Use Spraybooths o Use Safety Cans o Store Flammable Solvents in Fire Safe Cabinets	o Disposal of Hazardous Waste in Approved, Sealed Containers o Use of Certified Waste Disposal Services	o Use of Respirators o Good Ventilation in Spray Booths and Mixing Rooms	o Closed Containers o Reduced Solvent Use o Maintenance of Booth Exhaust System to Prevent Overspray
Contact your local Fire Department for their requirements	Contact your local Health Services or OES office for their requirements	Contact Cal/OSHA for your industry's requirements	Contact your local APCD/AQMD for a permit and local requirements

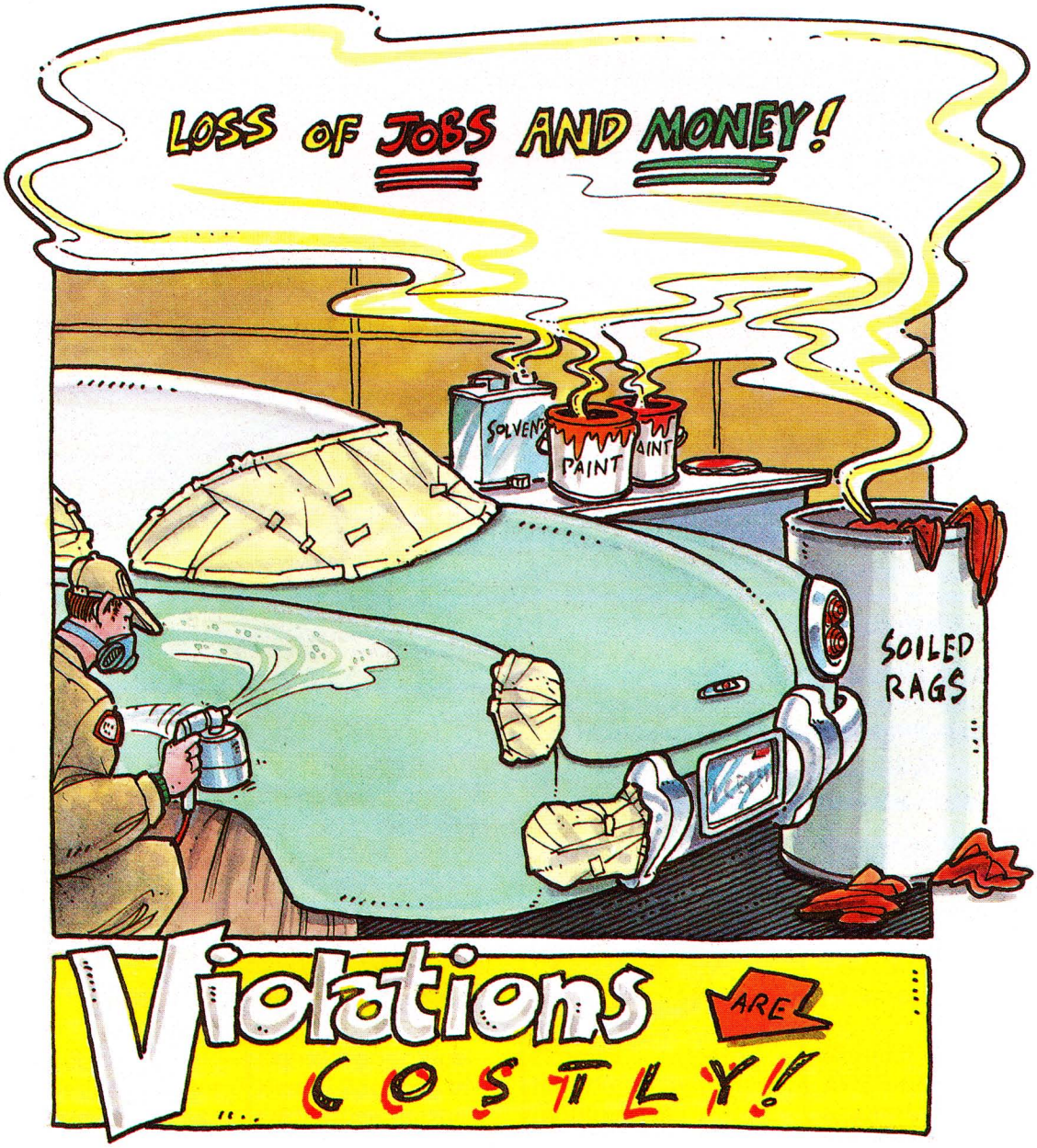
More than a business permit is required to operate your facility. Other governmental agencies which protect you and the environment develop laws on specific health, safety, or environmental concerns. Contact all the agencies which oversee your operations. Learn all the requirements for your shop. Not knowing the law is a poor excuse. **Keep informed.**

Most APCDs/AQMDs Require Permits to Operate



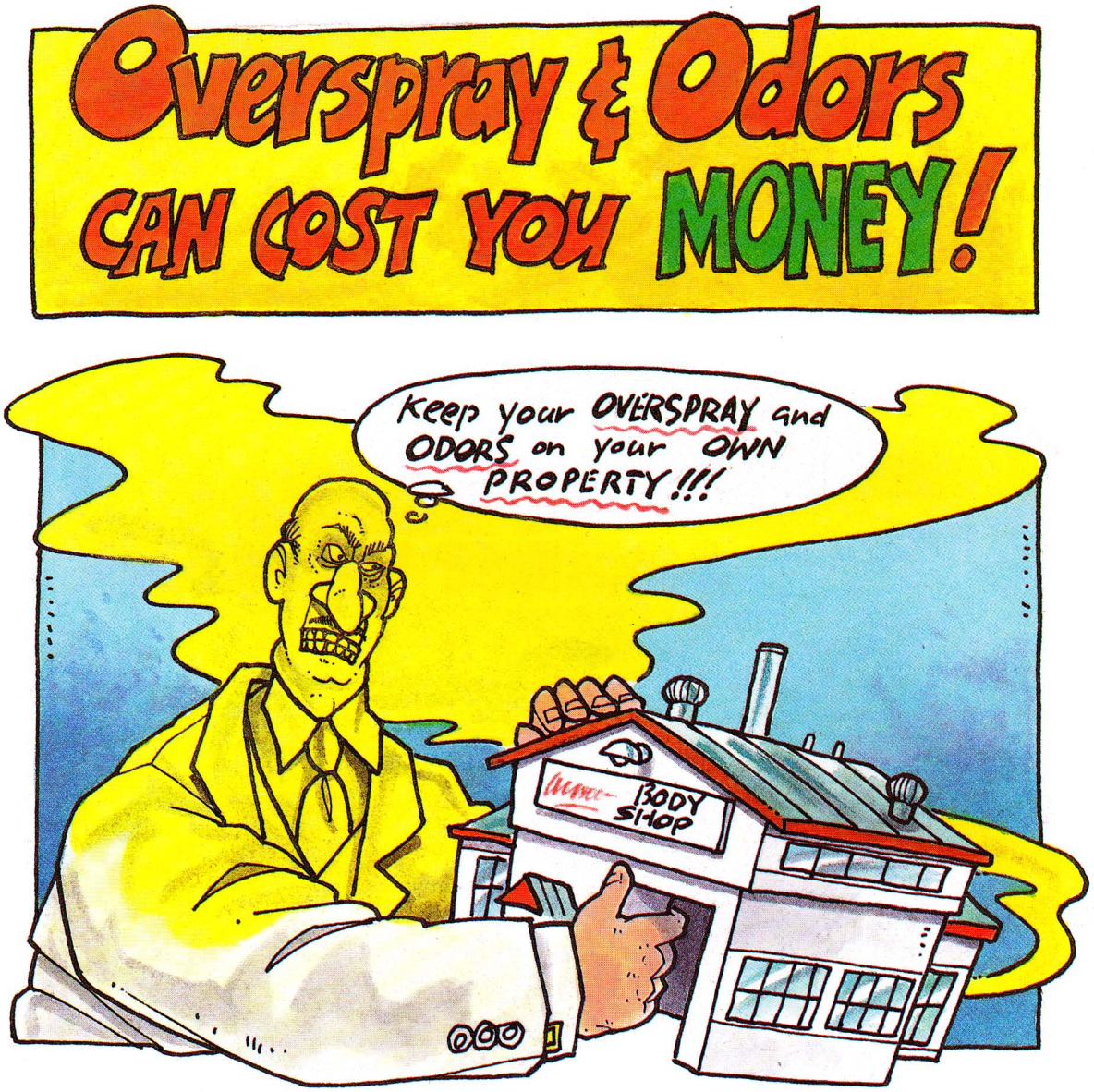
Most APCDs/AQMDs require you to obtain a permit for your operations. Your permit may have special conditions. **Follow your permit requirements**. The original permit lists conditions you are required to follow. Know your conditions and check that your permit is current. **Post your permit** in a visible area. If you need to update your permit or have any questions about your permit, call your local APCD or AQMD!

Follow the Law!
Save Money and Reduce Air Pollution



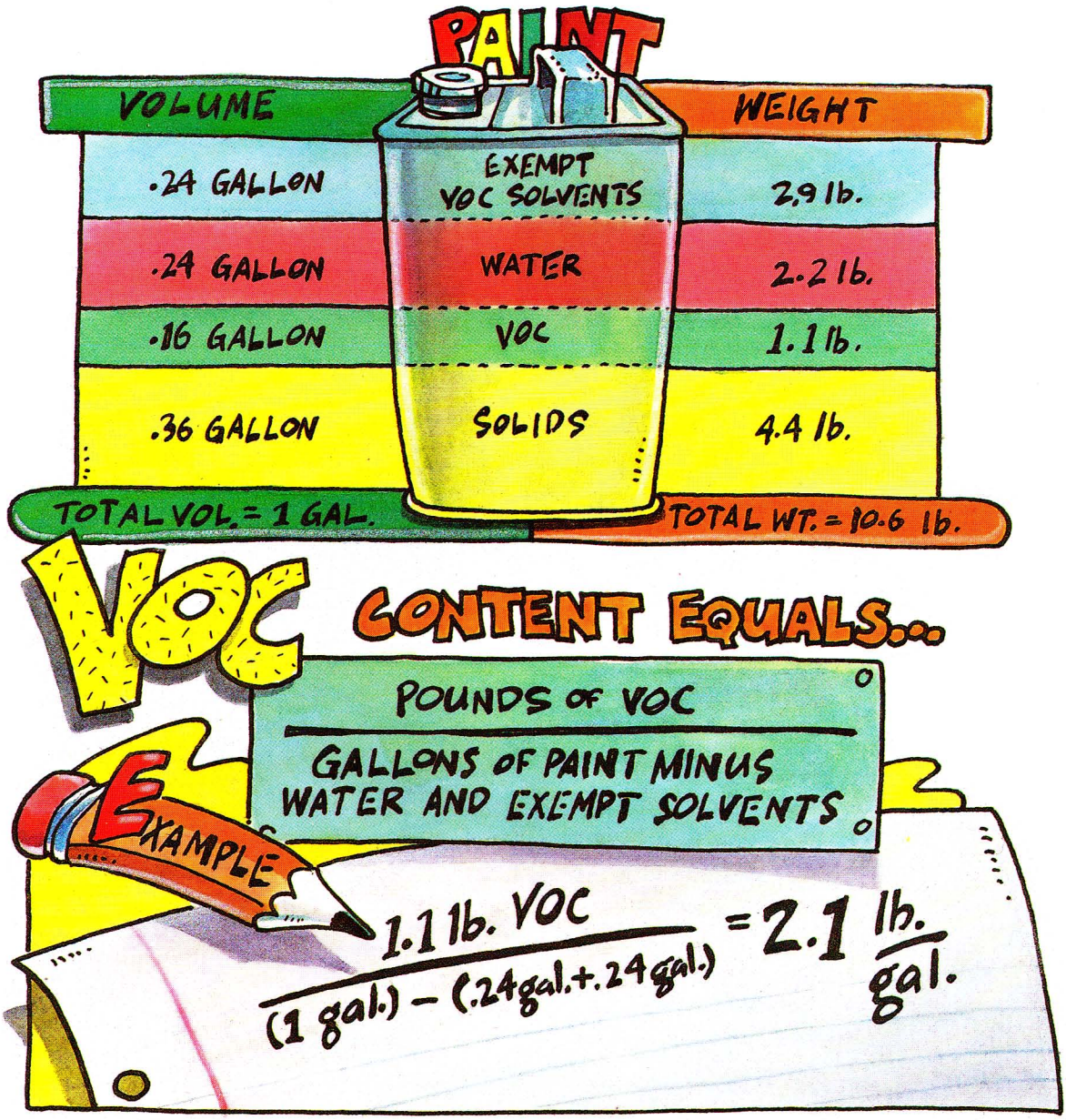
You can reduce air pollution and **save money** by following all air pollution laws. **Each violation can cost up to $25,000 per day**. Air pollution laws reduce VOC emissions by reducing VOC evaporation. Following the law can save money by reducing paint and solvent use. Don't spend valuable time and money on violations and wasted paint. **Keep a legal shop!**

Be A Good Neighbor!
Don't Cause a Public Nuisance.



Neighbors can file a public nuisance complaint against you if odors and overspray travel beyond your shop and cause injury or nuisance or endanger their health and safety. If enough complaints are received on your operations or if property damage occurs, the local APCD/AQMD can find you in violation of the law. Minimize odors and overspray. Spray inside the booth and maintain your spray booth's exhaust system. Be aware of where your spray booth vents are, and of your neighbors' location. Be considerate of others. **Save money and prevent complaints**.

What Is VOC Content?



Paints consist of solids (resins, pigments, extenders, additives) and liquids. The liquids include VOC solvents, water and "exempt" solvents. Exempt solvents or exempt VOCs do not react with other air contaminants to make ozone, but may be regulated as toxics or upper atmosphere ozone depleters. Source specific rules regulate all VOCs (except exempt) from sources such as automotive refinishing. Within source specific rules, VOC content is calculated by dividing the VOC **weight** in grams (g) or pounds (lb) by the paint **volume** (liter or gallon) minus water and exempt solvents.

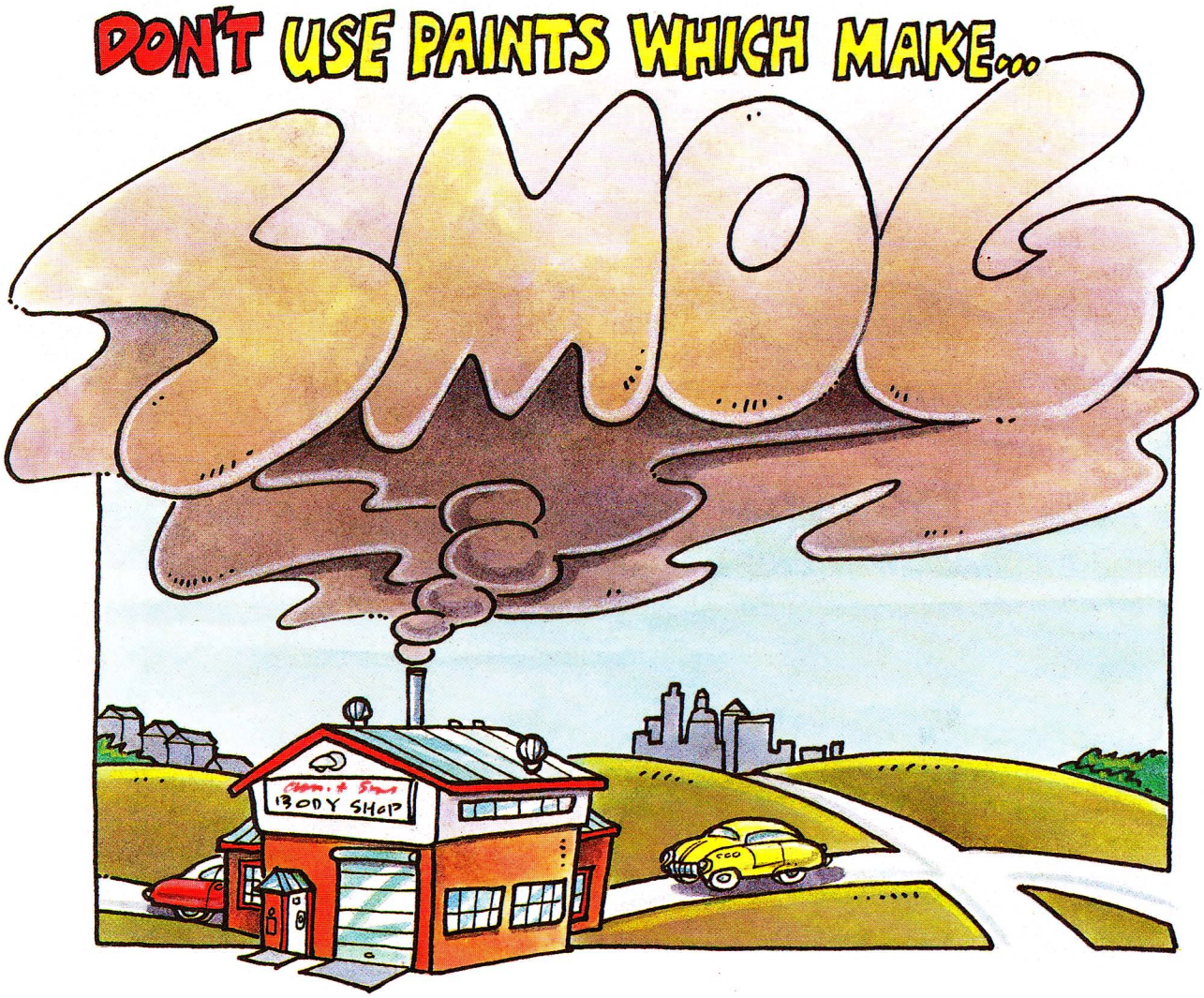
Automotive Refinishing Rules Limit VOC Concentration

PAINT	PAINT VOC CONTENT*	TOTAL VOC WEIGHT	TOTAL PAINT WEIGHT
1 PINT	1.85 lb./gal.	.23 lb.	1.35 lb.
1 GALLON	1.85 lb./gal.	1.85 lb.	10.8 lb.
5 GALLONS	1.85 lb./gal.	9.25 lb.	54 lb.

*NOTE: A PAINT'S VOC CONTENT = VOC CONCENTRATION = VOC LIMIT (or below)

Automotive refinishing rules control a paint's VOC content by limiting the VOC concentration of your "mixed" paint. This VOC concentration does not change if you increase the volume of mixed paint used. The VOC concentration does increase when adding VOC solvents (most thinners and reducers). A permit condition may limit the total pounds of VOC you can use daily. This is calculated by multiplying the volume of mixed paint used (minus the water and exempt solvents) times the VOC concentration (pounds per gallon or grams per liter minus the water and exempt solvents). Look for the VOC content on the paint can label or the manufacturer's paint specification sheet. Only some material safety data sheets (MSDS) have VOC information.

No Automotive Refinishing Rule? Use "Non-Photochemically Reactive" Coatings



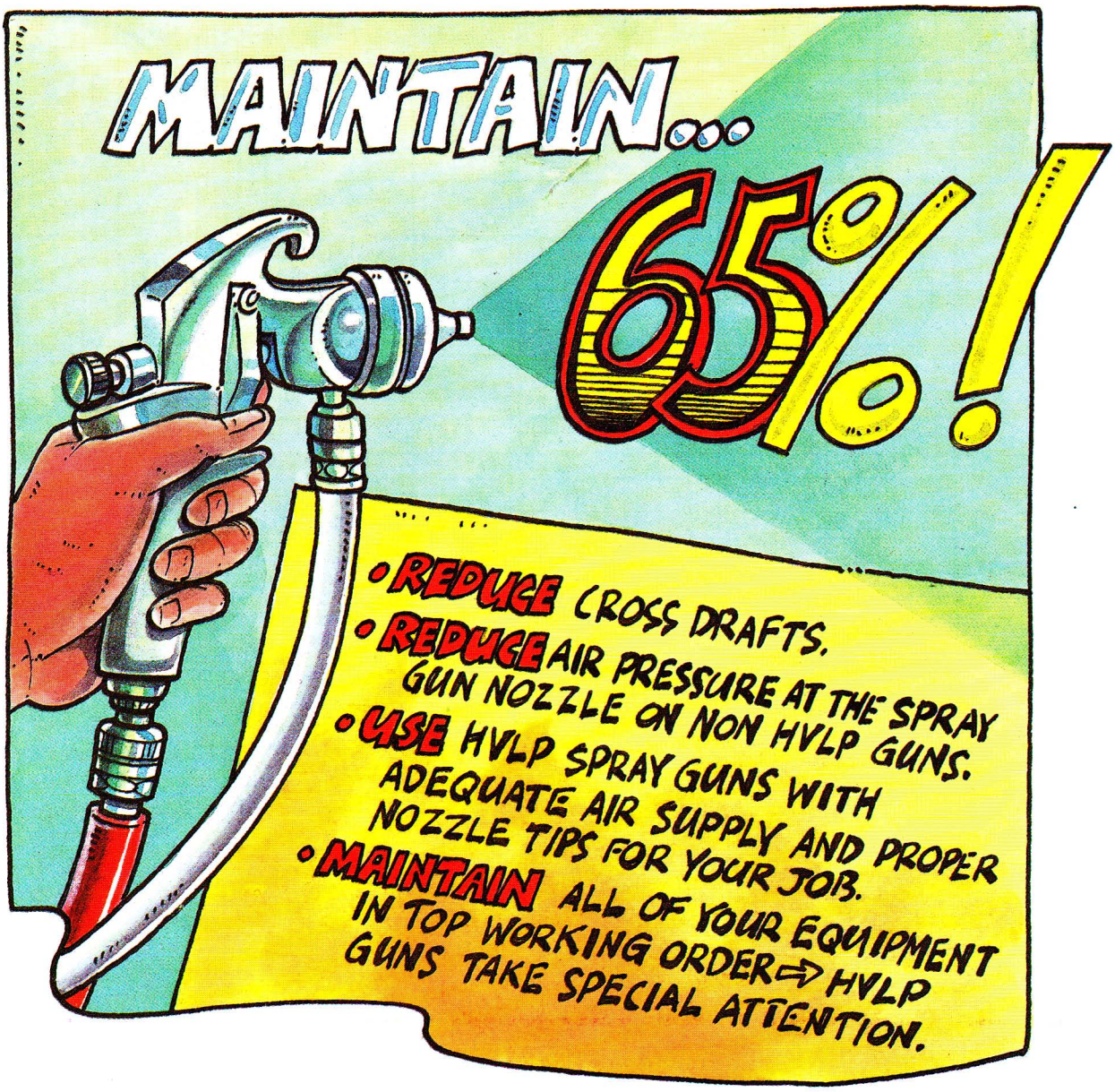
APCD/AQMDs which do not have an automotive refinishing rule control VOCs with the general organic solvent rule. The general organic solvent rule defines and limits photochemically reactive paints and solvents used by your shop. VOCs are classified as photochemically or non-photochemically reactive by the speed with which they react with other air contaminants to make smog. Ask your district and check your coating label or data sheet for the photochemical classification. More non-photochemically reactive solvents and paints can be used but allowable quantities are still limited. Check with your APCD/AQMD for the specific requirements for your shop operations.

Know your local APCD/AQMD rule VOC limit for your paint. Post mixing instructions to stay at or below the correct rule limit VOC content. **Do not add additional solvents**. Use your measuring stick or scales for accuracy. Mix properly. **If you are not sure** of the correct mixing instructions to stay below the VOC limit, **ask** your supervisor, paint supplier or manufacturer's representative.

Reduce VOCs By Closing All Containers

Some automotive refinishing rules may require low VOC solvents for cleanup and require equipment to be cleaned in closed systems. Open containers increase VOC evaporation. Always store fresh and used solvent, dirty rags, and paints in tightly closed containers. **Minimize your VOC use**. The less you waste, the more you save, and the cleaner our air gets.

High Transfer Efficiency Saves Paint



Save money by not wasting paint. Many shops use high transfer efficient HVLP sprayguns to reduce paint usage. Some districts **require** using high transfer efficient methods. Save paint and produce a quality finish by learning proper equipment use. **Do not thin**, instead improve your spray technique. A small change in habits can save you money and protect the environment!

Track Your Paint Usage With Recordkeeping

DAILY COATING LOG

Date: _____

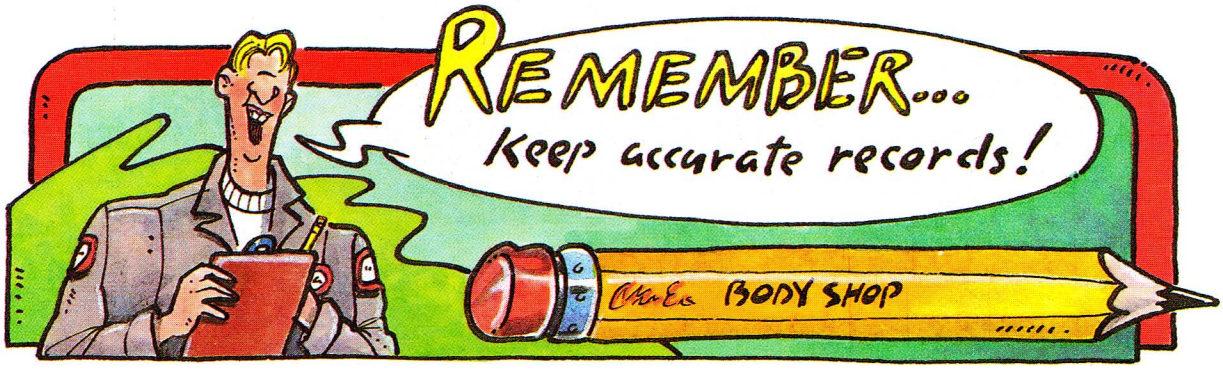
Facility: _____ Booth #: _____

Manufacturer Name	Product I.D. Number	List Catalyst & Reducer Used	Mix Volume*			Coating Type	VOC Content As Applied	Quantity Used	Spray Method *	Substrate & Part	Baked* Temp	Operator Initials	Comments:
			P	C	R								
							Total Coating Quantity					Total Clean-up Solvent Usage	

* P = Paint C = Catalyst R = Reducer (Use Actual Volumes)

* If Air Dried write A/D

☆ A = Air Spray AL = Airless Spray AA = Air-assisted Airless Spray
B = Hand Application D = Dip Coat E = Electrostatic Spray F = Flow Coat H = High Volume Low Pressure R = Roll Coat



Most districts require daily recordkeeping of your shop's paint and solvent use. Record your coating mixtures **exactly**. Include the manufacturer's name and paint ID number, the amount of each component used and the amount of other solvents added. **Accurate records prove your compliance with rule limits**. Follow recordkeeping instructions, be consistent, and be accurate!

Keep Your Shop In Shape!
Use a Self-Inspection Checklist

Item	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Notes:
Complying Coatings Used								
Mix Ratios Posted, VOC (as applied) Below Limit								
Prepared to Posted Mix Ratios								
High Transfer Equipment Properly Used								
HVLP Guns Thoroughly Cleaned and Lubricated								
Proper Surface Preparation Minimize Solvent Use								
Proper Cleanup Materials & Methods								
Recordkeeping Kept Daily, Includes all VOC Materials								
Usage Under Permit Limits, All Permit Conditions Met								
Sprayguns Washed in Closed Containers								
Closed Paint Containers, Closed Solvent Containers								
Closed Waste Containers, Properly Stored & Disposed								
Booth filters in Place While Spraying								
Booth Filter Condition OK, Water Curtain OK								
Booth Manometer Pressure OK Fluid Level OK, Gauge Zeroed								
Exhaust Fans OK								
Appropriate Safety Gear in Use								

Prevent costly violations. Identify any problems and **take action**! Good maintenance routines keep your equipment working properly and prevent complaints. Inspect your shop daily. Check your equipment for leaks and good maintenance. Refresh your memory on VOC and solvent cleaning requirements. Use this pocket to keep your self-inspection list, local district record keeping forms and other helpful information. Do your part to save money, protect your health, and clean up the environment.

Need More Information?

Air Resources Board (800) 952-5588 **District: _____**

Multi-County Districts

1 - Bay Area (415) 749-5000
2 - Feather River (530) 634-7659
3 - Great Basin (760) 872-8211
4 - Monterey Bay (831) 647-9411
5 - North Coast (707) 443-3093
6 - Northern Sierra (530) 274-9360
7 - South Coast (909) 396-2000
8 - Yolo-Solano (530) 757-3650
9 - San Joaquin Valley (559) 230-6000

County Districts

Amador (209) 257-0112
Antelope Valley (661) 723-8070
Butte (530) 891-2882
Calaveras (209) 754-6504
Colusa (530) 458-0590
El Dorado (530) 621-6662
Glenn (530) 934-6500
Imperial (760) 482-4606
Kern (661) 862-5250
Lake (707) 263-7000
Lassen (530) 251-8110
Mariposa (209) 966-2220
Mendocino (707) 463-4354
Modoc (530) 233-6419
Mojave Desert (760) 245-1661
No. Sonoma (707) 433-5911
Placer (530) 889-7130
Sacramento (916) 874-4800
San Diego (858) 650-4700
San Luis Obispo (805) 781-4247
Santa Barbara (805) 961-8800
Shasta (530) 225-5789
Siskiyou (530) 841-4029
Tehama (530) 527-3717
Tuolumne (209) 533-5693
Ventura (805) 645-1400

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http://www.arb.ca.gov
http://www.arb.ca.gov/training/training.htm

California Environmental Protection Agency
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