

**Air Pollution Control Board**

Greg Cox	District 1
Dianne Jacob	District 2
Pam Slater	District 3
Ron Roberts	District 4
Bill Horn	District 5

**Air Pollution Control Officer**  
R. J. Sommerville

**DATE:** November 13, 1996

**TO:** Air Pollution Control Board

**SUBJECT:** Adoption of New Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations)

**SUMMARY:**

New Rule 67.20 will control volatile organic compound (VOC) emissions from motor vehicle and mobile equipment coating (painting) operations. VOC's are ozone precursors. The rule satisfies the requirements for Best Available Retrofit Control Technology and all feasible control measures mandated by the State Health and Safety Code, and is consistent with the control measure in the 1991 San Diego Regional Air Quality Strategy.

The rule limits the VOC content of topcoats, primers, specialty coatings, surface preparation and cleaning materials and requires the use of high transfer efficiency spray application equipment and enclosed cleaning devices for spray guns. High VOC content precoat and specialty coatings are restricted if the total amount used at a facility exceeds specified levels. The rule exempts individuals coating their personal vehicles at home, original equipment manufacturing, mobile homes, coating radiator and engine component parts, and equipment subject to Rule 67.6 (Solvent Cleaning Operations). It exempts touch-up coatings, graphic design applications, aerosol can coatings, body fillers, and bedliner coatings. Car restoration facilities are exempt from VOC coating limits and from precoat and specialty coating usage limits. Underbody coatings and topcoat sealants are exempt from VOC coating limits, precoat and specialty coating usage limits, requirements to use high transfer application equipment, and the requirement to keep a list of coatings and other materials used.

VOC emissions from motor vehicle and mobile equipment finishing and refinishing operations in San Diego County will be reduced by about 64% or 500 tons per year at an estimated overall cost-effectiveness of about \$0.65 per pound of VOC reduced, well within the range other businesses in San Diego County are currently paying to control VOC emissions. Approximately 400 businesses in San Diego County, primarily automotive collision repair and painting shops will be affected, all of them small businesses.

The primary problem associated with adopting the rule as originally proposed was that a Socio-economic Impact Assessment indicated compliance costs could result in about 40 automotive refinishing shops ceasing operation. As a result, the District made additional changes to minimize the rule's adverse economic impacts without compromising emission reductions. There may still be up to 20 shops whose current economic situation is such that they elect to cease operations rather than comply with the rule. However, because the rule allows affected businesses maximum flexibility within the constraints of state Best Available Retrofit Control Technology requirements, businesses have expressed support for it.

Adopting new Rule 67.20 will not have a significant adverse effect on the environment and is exempt from the provisions of the California Environmental Quality Act.

**SUBJECT:** Adoption of New Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations)

Rule 67.20 is not being proposed for inclusion in the federal State Implementation Plan because its emission standards go beyond the federal requirements necessary to achieve the National Ambient Air Quality Standard for ozone.

Two workshops and extensive consultations with affected industry were conducted.

### **Issue**

Should the Board adopt new Rule 67.20 to meet the requirements of the State Health and Safety Code and to further implement the 1991 San Diego Regional Air Quality Strategy?

### **Recommendation**

#### **AIR POLLUTION CONTROL OFFICER:**

Adopt the resolution adding new Rule 67.20 to the District Rules and Regulations and make appropriate findings:

- (i) of necessity, authority, clarity, consistency, non-duplication and reference as required by Section 40727 of the State Health and Safety Code;
- (ii) that the adoption of new Rule 67.20 will alleviate a problem and will promote attainment of ambient air quality standards (Section 40001 of the State Health and Safety Code);
- (iii) that an assessment of the socioeconomic impact of the proposed new rule has been prepared as required by Section 40728.5 of the State Health and Safety Code and that the socioeconomic impacts of the new rule have been actively considered and the District has made good faith effort to minimize adverse socioeconomic impacts; and
- (iv) that there is no reasonable possibility that new Rule 67.20 may have a significant adverse effect on the environment and that this action is exempt from the provisions of the California Environmental Quality Act.

### **Alternative**

Not adopt Rule 67.20. The State Health and Safety Code requirements for implementing Best Available Retrofit Control Technology and all feasible control measures will not be met under this alternative. This may result in action by the Air Resources Board imposing a statewide Best Available Retrofit Control Technology rule that would not provide the same options and flexibility to local automotive refinishing businesses. Therefore, this alternative is not recommended.

### **Advisory Statement**

The Air Pollution Control District Advisory Committee recommended adopting proposed new Rule 67.20 at its July 24, 1996 meeting.

### **Fiscal Impact**

Adopting the proposed rule will have no fiscal impact on the District.

**SUBJECT: Adoption of New Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations)**

**Additional Information**

Attachment I contains additional background information, information on compliance with Board policy on adopting new rules, additional information on the Socioeconomic Impact Assessment, and information on compliance with the California Environmental Quality Act.

Attachment II contains the Resolution for Rule 67.20.

Attachment III contains the report for the workshop held on June 15, 1995 and the addendum to the workshop report containing District responses to comments on the Socioeconomic Impact Assessment.

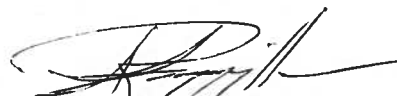
Attachment IV contains the Socioeconomic Impact Assessment and Supplement for the rule.

Concurrence:

Respectfully submitted,

**LAWRENCE B. PRIOR III**  
Chief Administrative Officer

**BY: ROBERT R. COPPER**  
Deputy Chief Administrative Officer



**R. J. SOMMERVILLE**  
Air Pollution Control Officer

SUBJECT: Adoption of New Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations)

COUNTY COUNSEL APPROVAL: Form and Legality ☒ Yes ☐ N/A  
[ ] Standard Form [ ] Ordinance ☒ Resolution

CHIEF FINANCIAL OFFICER/AUDITOR REVIEW: ☐ Yes ☒ N/A  
4 VOTES: ☐ Yes ☒ No

CONTRACT REVIEW PANEL: [ ] Approved \_\_\_\_\_ [X] N/A

PREVIOUS RELEVANT BOARD ACTION: N/A

BOARD POLICIES APPLICABLE: N/A

CONCURRENCES: N/A

ORIGINATING DEPARTMENT: County of San Diego Air Pollution Control District

CONTACT PERSON: Richard Smith, Deputy Director

(S50)694-3303

MS: 0-176

R. J. SOMMERVILLE, APCO  
DEPARTMENT AUTHORIZED REPRESENTATIVE

  
NOVEMBER 13, 1996  
MEETING DATE

## **ADOPTION OF RULE 67.20 - MOTOR VEHICLE AND MOBILE EQUIPMENT REFINISHING OPERATIONS**

### **Additional Background Information**

New Rule 67.20 regulates volatile organic compound (VOC) emissions from motor vehicle and mobile equipment coating (painting) operations. It applies to all commercial finishing and refinishing operations on motor vehicles, bicycles, public transit buses and mobile equipment. The latter includes truck bodies and trailers, utility bodies, camper shells, locomotives, railcars, trolleys, military vehicles, aircraft ground support equipment, mobile cranes, bulldozers, street cleaners, golf carts, farm equipment, and their components. Coating original equipment manufacturer's parts during production, painting performed by individuals on their own vehicles at their residences, painting of mobile homes, coating radiators or engine components and graphic design applications are exempt. Coatings applied using non-refillable handheld aerosol containers, touch up coatings, body fillers, bedliner coatings, underbody coatings and topcoat sealants are also exempt. Facilities that restore only old and antique cars are exempt from the emission standards if annual coating usage does not exceed 50 gallons and no more than 30 vehicles are restored per year. Restricting the number of vehicles restored was requested by affected businesses.

The rule imposes limitations on the VOC content of all topcoats, primers, primer sealers, primer surfacers, precoats, pretreatment, temporary protective and specialty coatings, and requires the use of low volatility or low VOC content surface preparation and cleaning materials. It requires businesses to use high transfer efficiency application equipment and clean it in a manner that minimizes emissions by using enclosed cleaning devices or solvents with low VOC content. As an alternative to complying with VOC limits for coatings and cleaning materials, add-on air pollution control equipment with at least 85% overall reduction efficiency may be used. All emission standards of the rule will become effective nine months after the date of adoption.

All facilities must keep records sufficient to determine compliance. Coating suppliers are required to maintain sales records of all coatings and surface preparation and cleaning materials sold for use in San Diego County, and provide customers with the materials' VOC content and other information necessary to determine compliance. Finally, the rule includes definitions of specific terms, test methods for determining compliance, and an implementation schedule for facilities choosing to install add-on emission control equipment.

Rule 67.20 will affect approximately 400 businesses in San Diego County, primarily automotive collision repair and painting shops, and reduce VOC emissions from motor vehicle and mobile equipment finishing and refinishing operations by 64% or approximately 500 tons per year. The rule's estimated overall cost-effectiveness is about \$0.65 per pound of VOC reduced, well within the range other businesses in San Diego county are currently paying to control VOC emissions.

The District held two public workshops and numerous consultations with local owners and operators of automotive refinishing shops and representatives of local suppliers and national automotive paint manufacturers. As a result, the state Best Available Retrofit Control Technology guidance requirements were adjusted to increase some topcoat and primer VOC limits, establish more flexible usage limits for specialty coatings, and provide a limited exemption for automotive restoration shops. The rule was also revised to include additional choices of cleaning materials and devices for reducing emissions from surface preparation and coating application equipment cleaning. Businesses were provided more choices in selecting complying coating systems to meet the wide variety of automotive refinishing needs. The rule meets state Best Available Retrofit Control Technology requirements.

Rule 67.20 is not being proposed for inclusion in the federal State Implementation Plan because its emission standards go beyond the federal requirements necessary to achieve the National Ambient Air

## **Additional Background Information**

**Quality Standard for ozone.** In addition, the current federal requirements for daily recordkeeping would add an unnecessary administrative burden to small businesses.

## **Compliance With Board Policy on Adopting New Rules**

On February 2, 1993, the Board directed that, with the exception of a regulation requested by business or a regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented unless specifically required by federal or state law. The proposed new rule is consistent with this Board directive because it is required by state law.

## **Socioeconomic Impact Assessment**

Section 40728.5 of the State Health and Safety Code requires the District to perform a socioeconomic impact assessment for new and revised rules and regulations significantly affecting air quality or emission limitations.

A socioeconomic impact assessment was prepared for the District by a contractor. The assessment was it indicated compliance costs associated with the initially proposed Rule 67.20, combined with other unfavorable economic factors, could result in about 40 of the automotive refinishing shops in San Diego County ceasing operations.

Analysis indicated the largest part of the capital investment and operating costs associated with rule compliance could be attributed to the requirement to use the low VOC content primers and primer surfacers (250 grams/liter of VOC or less). For the most part, these primers (both water- and organic solvent-borne) when applied over bare metal, require a high VOC precoat adding an extra step to the refinishing process. In addition, water-borne and some organic solvent-borne low VOC content primers dry longer and often require comparatively expensive special heating systems currently not being used in San Diego County.

To mitigate adverse impacts, the District increased the VOC limits for primers and primer surfacers to 420 grams/liter and allowed precoat coatings be used only in combination with low VOC primers or primer surfacers (250 grams/liter or less) provided precoat coating usage does not exceed 25% of the total low VOC primer and primer surfacer usage at a facility. As a result, a facility can either use low VOC primers and primer surfacers with a precoat, or higher VOC primers and primer surfacers (up to 420 grams/liter of VOC) without a precoat. Allowing higher VOC primers and primer surfacers without a precoat avoids the additional labor associated with applying a precoat when low VOC primers alone are used and the need for additional costly heaters to dry low VOC primers. These changes have an insignificant effect on emission reductions, and it is estimated they reduce total compliance costs by about 50 percent. They mitigate the adverse economic impacts identified in the socioeconomic impact assessment as much as possible within the constraints of state Best Available Retrofit Control Technology requirements and are supported by affected businesses. However, it is estimated about 20 automotive refinishing shops could still cease operations as a result of complying with the rule. A supplemental to the socioeconomic impact assessment has been done reflecting these changes. It is attached to the socioeconomic impact assessment.

## **California Environmental Quality Act**

The California Environmental Quality Act requires an environmental review for certain actions. No significant adverse impacts on the environment have been suggested; no such impacts are reasonably possible. Adopting new Rule 67.20 will not have a significant adverse effect on the environment and is exempt from the provisions of the California Environmental Quality Act.

**NEW ADDED RULE**

Re Rules and Regulations of the)  
Air Pollution Control District )  
of San Diego County . . . . .

**RESOLUTION ADDING RULE 67.20  
TO REGULATION IV  
OF THE RULES AND REGULATIONS OF THE  
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT**

On motion of Member Horn, seconded by Member Cox  
the following resolution is adopted:

**WHEREAS**, the San Diego County Air Pollution Control Board, pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

**WHEREAS**, said Board now desires to amend said Rules and Regulations; and

**WHEREAS**, notice has been given and a public hearing has been had relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code.

**NOW THEREFORE IT IS RESOLVED AND ORDERED** by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be and hereby are amended as follows:

New Rule 67.20 is to read as follows:

**RULE 67.20 MOTOR VEHICLE AND MOBILE EQUIPMENT  
REFINISHING OPERATIONS** *(Effective nine months after  
adoption)*

**(a) APPLICABILITY**

(1) Except as otherwise provided in Section (b), this rule is applicable to all motor vehicle and mobile equipment refinishing (coating) operations, including the refinishing or finishing of motor vehicles, mobile equipment, bicycles, nonmotorized models, and their component parts.

(2) Finishing and refinishing operations which are subject to the provisions of this rule shall not be subject to Rule 66 or Rule 67.3.

**(b) EXEMPTIONS**

(1) The provisions of this rule shall not apply to coating of motor vehicle, mobile equipment, bicycle, or nonmotorized model component parts or accessories, as identified by the original equipment manufacturer's (OEM) parts list, during original manufacture. Rules 66, 67.3, 67.11, or 67.12 shall apply to such coating operations, as applicable.

(2) The provisions of this rule shall not apply to noncommercial motor vehicle and mobile equipment refinishing operations performed by any individual at his/her residence for the purpose of finishing or refinishing that individual's personal vehicles.

(3) The provisions of this rule shall not apply to the following:

- (i) Touch-up coatings.
- (ii) Graphic design applications.
- (iii) Coatings applied using non-refillable hand-held aerosol spray containers.
- (iv) Body fillers.
- (v) Bedliner coatings.

(4) The provisions of this rule shall not apply to coating of radiators or engine components. Rule 67.3 shall apply to such coating operations.

(5) The provisions of Subsections (d)(1), (d)(2), and (d)(3) shall not apply to coatings which are used exclusively for the purpose of restoring motor vehicles provided:

- (i) Not more than 50 gallons per year of all such noncompliant coatings are used at the stationary source; and
- (ii) Not more than 30 vehicles are restored in whole or in part per calendar year at the stationary source; and
- (iii) Each vehicle restoration takes not less than sixty days; and
- (iv) No other motor vehicle or mobile equipment finishing or refinishing operations occur at the same stationary source.

It shall be the responsibility of any person claiming this exemption to maintain monthly records of the number of vehicles restored, the number of days required for each restoration, and the coating usage along with a copy of the records provided by the manufacturer or supplier as specified in Subsection (d)(10). These records shall be retained on site for at least three years and made readily available to the District upon request.

(6) The provisions of Subsections (d)(1), (d)(2), (d)(3), (d)(5), and (f)(1)(ii) shall not apply to underbody coatings and topcoat sealants.

(7) The provisions of this rule shall not apply to equipment that is subject to Rule 67.6 and is used for surface preparation during motor vehicle and mobile equipment refinishing operations.

(8) The provisions of this rule shall not apply to the coating of mobile-homes. Rule 67.0 shall apply to such coating operations.

#### **(c) DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) "Adhesion Promoter" means a coating to be used in lieu of sanding a surface to promote adhesion of a refinish topcoat to surfaces such as the original topcoats



applied at an OEM plant or thermosetting enamels. Such coatings are primarily used for hard-to-sand areas (including, but not limited to, trim moldings, door locks and door sills) or in the case of spot repairs, to effectively blend in the refinished area into the surrounding unfinished area. No topcoat, primer, primer sealer, or primer surfacer shall be classified as an adhesion promoter.

(2) **"Aircraft Ground Support Equipment"** means any vehicle used to support aircraft activities at airports, including, but not limited to, engine stands, corrosion control stands, hydraulic test stands, maintenance stands, prop dollies, nitrogen and oxygen carts, gas turbines, crash dollies, air conditioning units, light stands, bomb racks, luggage carriers, auxiliary power units, and aircraft boarding ramps.

(3) **"Antiglare/Safety Coating"** means a low gloss coating which shows a reflectance of 25 or less on a 60° gloss meter and is formulated to eliminate glare for safety purposes on interior surfaces of a vehicle.

(4) **"Bedliner Coating"** means an expandable polymeric foam that is applied to motor vehicles or mobile equipment for abrasion protection. A coating shall not be classified as a bedliner coating if it can also be classified as a topcoat or as part of a multistage topcoat system.

(5) **"Bicycle"** means a device upon which any person may ride, propelled exclusively by human power through a belt, chain, or gears, and having one or more wheels.

(6) **"Body Filler"** means a coating applied to the vehicle body for the purposes of filling in dents or imperfections. A coating shall not be classified as a body filler if it can also be classified as a primer surfacer.

(7) **"Bright Metal Trim Repair Coating"** means a coating applied directly to a metal-plated surface to restore the surface to its original luster and texture.

(8) **"Camouflage Coating"** means a coating applied on motor vehicles or mobile equipment to conceal such vehicles or equipment from detection and/or to provide resistance to chemical agents.

(9) **"Coating"** means a VOC containing material which can be applied to a surface and which forms a solid continuous film in order to beautify and/or protect the surface. This includes, but is not limited to, any primer, paint, varnish, stain, lacquer, enamel, shellac, sealer or maskant, but excludes adhesive.

(10) **"Coating Line"** means the equipment required to apply, dry, cure, and/or bake coatings and associated flash-off areas which is operated in an uninterrupted series in a motor vehicle or mobile equipment refinishing operation.

(11) **"Coating Additive"** means any material containing VOCs that is mixed with a coating material to modify the coating material properties, except thinners and reducers. Coating additives include, but are not limited to, catalysts, retarders, accelerators, hardeners, activators, plasticizers, flex agents, elastomeric additives, antisilicone agents, fisheye preventers, flop adjusters, texture additives, and flattening agents.

(12) **"Color Match"** means the ability of a repair coating to blend into an existing coating so that color difference is not visible.

(13) **"Dip Coat"** means a coating application method accomplished by dipping an object into a coating.

- (14) **"Elastomeric Material"** means a coating specifically formulated for application over flexible composite substrates, including but not limited to, filler panels, elastomeric bumpers, and spoilers.
- (15) **"Electrostatic Application"** means the application of charged atomized coating droplets which are deposited by electrostatic attraction.
- (16) **"Exempt Compound"** means the same as defined in Rule 2.
- (17) **"Existing Equipment"** means any coating equipment for which a District Authority to Construct or Permit to Operate was issued before (*date of adoption*).
- (18) **"Finishing"** means the original coating of motor vehicles, mobile equipment, bicycles, nonmotorized models, or their component parts, excluding coating performed at an OEM plant.
- (19) **"Flow Coat"** means a coating application method accomplished by flowing a stream of coating over an object.
- (20) **"Graphic Design Application"** means the application of logos, letters, numbers, and graphics to a painted surface.
- (21) **"Group I Vehicles"** means nonmotorized models, bicycles, recreational vehicles, and private or commercial passenger cars, large/heavy duty truck cabs and chassis, light and medium duty trucks and vans, buses, and motorcycles.
- (22) **"Group II Vehicles and Equipment"** means public transit buses and mobile equipment.
- (23) **"Hand Application Method"** means a coating application method accomplished by applying a coating by manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, rags, and sponges.
- (24) **"High-Volume Low-Pressure (HVL) Spray"** means a coating application method using a spray applicator and pressurized air which is designed to be operated and which is operated at a permanent atomizing pressure between 0.1 and 10.0 psig, measured dynamically at the center of the applicator's air cap and at the applicator's air horns.
- (25) **"Low VOC Primer or Primer Surfacer"** means a primer or primer surfacer with a VOC content of not more than 250 grams per liter, as applied, less water and exempt compounds.
- (26) **"Metallic/Iridescent Topcoat"** means any topcoat which contains more than 5 grams per liter (0.042 lb/gal) of metal or iridescent particles, as applied, where such particles are visible in the dried film.
- (27) **"Military Vehicles"** means any vehicles operated by the United States armed forces or National Guard, including, but not limited to, tanks, trucks, tractors, trailers, vans, armored personnel carriers, and artillery pieces.
- (28) **"Mobile Equipment"** means any vehicles or equipment, except Group I vehicles, which may be drawn or are capable of being driven on a roadway or rails, including, but not limited to, truck bodies, truck trailers, utility bodies, camper shells,

locomotives, railcars, trolleys, military vehicles, aircraft ground support equipment, mobile cranes, bulldozers, street cleaners, golf carts, and implements of husbandry.

(29) **"Mobile Home"** means a vehicle other than a motor vehicle that is designed for human habitation or for human occupancy for industrial, professional or commercial purposes and for being drawn by a motor vehicle and that is in excess of 8.5 feet in width or in excess of 40 feet in overall length measured from the foremost point of the trailer hitch to the rear extremity of the vehicle. Mobile homes do not include recreational vehicles or busses.

(30) **"Motor Vehicle"** means a vehicle which is self-propelled, excluding self-propelled wheelchairs, invalid tricycles, or invalid quadricycles.

(31) **"Motor Vehicle and Mobile Equipment Refinishing Operation"** means the finishing or refinishing of Group I vehicles and Group II vehicles and equipment, including component parts.

(32) **"Multicolored Topcoat"** means a single stage topcoat that exhibits more than one color when applied and that is packaged in a single container.

(33) **"Multicomponent Coating"** means a coating mixed on site from components packaged separately. Coating components include, but are not limited to, thinners/reducers, base components, curing agents, reactive diluents, and coating additives.

(34) **"Multistage Topcoat"** means a topcoat system consisting of either two coating stages (pigmented basecoat, and clear coat), three coating stages (pigmented basecoat, translucent midcoat and clearcoat), or four coating stages (pigmented groundcoat or pigmented primer sealer, pigmented basecoat, translucent midcoat, and clearcoat). Coating stages using the same topcoat or topcoats that differ solely by the addition or removal of thinners, reducers, or coating additives are counted as a single stage for purposes of defining a multistage topcoat. The average VOC content of multistage topcoats shall be used to determine compliance with the VOC content standards in Subsection (d)(1). The average VOC content of multistage topcoats shall be calculated as follows:

$$\text{VOC(2-stage)} = \frac{\text{VOC}_{bc} + 2 \text{VOC}_{cc}}{3}$$

$$\text{VOC(3-stage)} = \frac{\text{VOC}_{bc} + \text{VOC}_{mc} + 2 \text{VOC}_{cc}}{4}$$

$$\text{VOC(4-stage)} = \frac{\text{VOC}_{gc} + \text{VOC}_{bc} + \text{VOC}_{mc} + 2 \text{VOC}_{cc}}{5}$$

where:

VOC(2-stage) = the average VOC content, as applied, of a two-stage coating system.

VOC(3-stage) = the average VOC content, as applied, of a three-stage coating system.

VOC(4-stage) = the average VOC content, as applied, of a four-stage coating system.

VOC<sub>bc</sub> = the VOC content, as applied, of a basecoat.

**2 VOC<sub>cc</sub>** = two times the VOC content, as applied, of a clearcoat.

**VOC<sub>mc</sub>** = the VOC content, as applied, of a midcoat.

**VOC<sub>gc</sub>** = the VOC content, as applied, of a groundcoat.

and VOC(2-stage), VOC(3-stage), VOC(4-stage), VOC<sub>bc</sub>, 2 VOC<sub>cc</sub>, VOC<sub>mc</sub>, VOC<sub>gc</sub> have units of weight per volume of coating less water and exempt compounds.

(35) **"Non-motorized Model"** means a nonmotorized vehicle designed to represent a new concept of future motor vehicles for display purposes.

(36) **"Precoat"** means any coating which is applied to bare metal prior to application of a low VOC primer or primer surfacer and which dries by oxidation or polymerization.

(37) **"Pretreatment Coating (Wash Primer)"** means any coating which contains at least one-half percent by weight of acid to provide surface etching, and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion.

(38) **"Primer"** means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.

(39) **"Primer Sealer"** means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, color uniformity, and to promote the ability of an undercoat to resist penetration by the topcoat.

(40) **"Primer Surfacer"** means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat, and which promotes a uniform surface by filling in surface imperfections.

(41) **"Refinishing"** means any coating of motor vehicles, mobile equipment, bicycles, or nonmotorized models, including partial body collision repairs, for the purpose of protection or beautification and which is subsequent to the original coating applied at an OEM plant coating line.

(42) **"Restoring"** means any coating of motor vehicles for the purpose of bringing the vehicles back to the exact original state that existed when the vehicles were delivered from the OEM plant.

(43) **"Roll Coat"** means a coating application method accomplished by rolling a coating onto a flat surface using a roll applicator.

(44) **"Specialty Coating"** means a coating which is necessary due to unusual job performance requirements and contains VOC in excess of the limits for topcoats specified for Group I vehicles or Group II vehicles and equipment. Such coatings include, but are not limited to, adhesion promoters, uniform finish blenders, elastomeric material, bright metal trim repair coatings, and anti-glare/safety coatings.

(45) **"Stationary Source"** means the same as defined in Rule 2.

(46) **"Temporary Protective Coating"** means a coating that is applied to protect areas adjacent to the area being finished or refinished from coating overspray and that is removed after the primer or topcoat is applied.

(47) **"Thinner (Reducer)"** means any solvent used to reduce the viscosity of a coating, to improve the ability of applying the coating, to achieve appropriate flash, or to achieve necessary appearance properties in the coating.

(48) **"Topcoat"** means any coating applied over a primer or an original OEM finish for the purpose of protection or appearance. Any multistage coating system shall be considered a topcoat.

(49) **"Topcoat Sealant"** means a nonpigmented coating applied over a topcoat or over an original OEM finish for the purpose of protection or appearance that requires periodic replacement, including waxes, polytetrafluoroethylene coatings, and silicone coatings. A coating shall not be classified as a topcoat sealant if it can also be classified as a topcoat or part of a multistage topcoat system.

(50) **"Touch-up Coating"** means a coating applied by brush or by hand-held, non-refillable aerosol cans that is used to cover minor imperfections.

(51) **"Transfer Efficiency"** means the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids applied in the application process, expressed as a percentage.

(52) **"Underbody Coating"** means a coating that is applied over a topcoat to wheel wells, the inside of door panels or fenders, the underside of a trunk or hood, or the underside of motor vehicles or mobile equipment for the purposes of protection or noise reduction. A coating shall not be classified as an underbody coating if it can also be classified as a topcoat or part of a multistage topcoat system.

(53) **"Uniform Finish Blender"** means a thinner or low solids coating applied in spot or panel repairs for the purpose of blending a paint overspray area of a repaired topcoat to match the appearance of an adjacent existing topcoat.

(54) **"Utility Body"** means a special purpose service compartment or unit that will be bolted, welded, or affixed onto an existing cab and chassis. The compartment may serve as storage for equipment or parts.

(55) **"Vehicle"** means a device by which any person or property may be propelled, moved, or drawn upon a highway or stationary rails or tracks, excluding any device moved exclusively by human power, except a bicycle.

(56) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, and exempt compounds which may be emitted to the atmosphere during operations or activities subject to this rule.

(57) **"Water-Based Primer and Water-Based Primer Surfacer"** means any primer or primer surfacer that contains more than 5% water by weight.

(58) **"VOC Content Per Volume of Coating, Less Water and Less Exempt Compounds"** means the same as defined in Rule 2.

(59) **"VOC Content Per Volume of Material"** means the same as defined in Rule 2.

(d) **STANDARDS**

(1) **Coating VOC Limits**

(i) A person shall not finish or refinish Group I vehicles, or Group II vehicles and equipment where color match is required, using any coating which has a VOC content in excess of the following limits:

<u>VOC content per volume of coating as applied, less water and less exempt compounds</u>		
<u>Coating Category</u>	<u>gram/liter</u>	<u>(lb/gal)</u>
Pretreatment Coating	780	(6.5)
Precoat	600	(5.0)
Primer/Primer Surfacer	420	(3.5)
Primer Sealer	420	(3.5)
Topcoats		
Metallic/Iridescent	520	(4.3)
Multicolor	685	(5.7)
Multistage	540	(4.5)
Multicolor Multistage	480	(4.0)
All Other Topcoats	420	(3.5)
Specialty Coating	840	(7.0)

(ii) Color match is allowed for roll bars, truck bodies, utility bodies, and camper shells that are installed, or will be installed, on Group I vehicles. Color match is allowed for any other Group II vehicles and equipment provided that a request to allow color match is approved in writing by the Air Pollution Control Officer.

(iii) A person shall not finish or refinish Group II vehicles and equipment where color match is not required, including full body paint jobs, using any coating which has a VOC content in excess of the following limits:

<u>VOC content per volume of coating as applied, less water and less exempt compounds</u>		
<u>Coating Category</u>	<u>gram/liter</u>	<u>(lb/gal)</u>
Pretreatment Coating	780	(6.5)
Precoat	600	(5.0)
Primer/Primer Surfacer	420	(3.5)
Primer Sealer	420	(3.5)
Topcoats		
Metallic/Iridescent	420	(3.5)
Multicolored	685	(5.7)
Camouflage Coating	420	(3.5)
All Other Topcoats	420	(3.5)
Specialty coating	840	(7.0)



(iv) A person shall not apply temporary protective coatings unless the coating contains 60 grams or less of VOC per liter of material, as applied.

(2) Precoat Usage Limitation

Use of precoat shall not exceed 25% of the aggregate volume, as applied, of all low VOC primers and primer surfacers applied at the stationary source, on a monthly basis.

(3) Specialty Coatings

Use of all specialty coatings except antiglare/safety coatings shall not exceed the larger of the following limits:

(i) Five percent by volume, as applied, of all motor vehicle and mobile equipment refinishing or finishing coatings used at the stationary source, on a monthly basis; or

(ii) Three gallons per month, as applied.

(4) Alternative Emission Control Plan

The requirements of Subsections (d)(1), (d)(2), and (d)(3) may be met using an Alternative Emission Control Plan (AECPP) that has been approved pursuant to Rule 67.1.

(5) Application Equipment

A person shall not apply any coating containing VOC to any Group I vehicles or Group II vehicles and equipment except by means of the following application methods:

(i) Electrostatic spray application, or

(ii) High-volume low-pressure (HVLPP) spray, or

(iii) Flow coat application, or

(iv) Dip coat application, or

(v) Roll coat, or

(vi) Hand application methods, or

(vii) Other coating application methods that are demonstrated to have transfer efficiency at least equal to one of the above application methods, and which are used in such a manner that the operating parameters under which they were demonstrated to achieve such transfer efficiency are permanent features of the method. Such coating application methods shall be approved in writing prior to use by the Air Pollution Control Officer.

(6) Surface Preparation Materials

(i) A person shall not use any material for surface preparation, excluding surface preparation of replacement plastic parts, unless:

(A) The material contains 200 grams or less of VOC per liter of material (1.67 lb/gal), as applied; or

(B) The material has an initial boiling point of 190° C (374° F) or greater; or

(C) The material has a total VOC vapor pressure of 20 mm Hg or less, at 20° C (68° F).

(ii) A person shall not use any material for surface preparation of replacement plastic parts unless it contains 780 grams or less of VOC per liter of material (6.5 lb/gal), as applied, or has a total vapor pressure of VOC of 45 mm Hg or less at 68°F (20°C).

#### **(7) Application Equipment Cleaning**

A person shall not use VOC-containing materials to clean coating application equipment used in motor vehicle and mobile equipment refinishing operations unless:

(i) The cleaning material contains 200 grams or less of VOC per liter of material; or

(ii) The cleaning material has an initial boiling point of 190° C (374° F) or greater; or

(iii) The cleaning material has a total VOC vapor pressure of 20 mm Hg or less, at 20° C (68° F); or

(iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or

(v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or

(vi) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or

(vii) Other application equipment cleaning methods that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the device has been approved prior to use by the Air Pollution Control Officer.

#### **(8) Waste Disposal**

A person shall not use spray application equipment or any other means to dispose of waste coatings, coating components, surface preparation materials, or cleaning materials into the air, except when momentarily purging coating material from a spray applicator cap immediately before or after applying the coating material.

#### **(9) Prohibition of Specification**

A person shall not solicit or require the use, or specify the application, of a coating on Group I vehicles or Group II vehicles and equipment if such use or application results in a violation of any provision of this rule. This prohibition is applicable to any written or oral



contract under the terms of which any coating subject to this rule is to be applied to any motor vehicle or mobile equipment within San Diego County.

**(10) Manufacturer and Supplier Information Requirements:**

Any person who manufactures, sells, offers for sale, or supplies any coating, thinner, coating additive, surface preparation material, or cleaning material for use in motor vehicle and mobile equipment refinishing operations in San Diego County shall provide in writing the following information to customers:

- (i) The manufacturer and manufacturer identification of each coating or multicomponent coating component, surface preparation material, and equipment cleaning material; and
- (ii) The manufacturer recommended mix ratio of components of each coating; and
- (iii) For each coating or multicomponent coating component, the weight of VOC per volume of coating less water and exempt compounds and per volume of material (expressed in grams per liter or pounds per gallon), as sold; and
- (iv) For each coating, the weight of VOC per volume of coating less water and exempt compounds (expressed in grams per liter or pounds per gallon) for each coating as applied according to the manufacturer's recommendation; and
- (v) For each surface preparation or equipment cleaning material, the weight of VOC per volume of material ( in grams per liter or pounds per gallon), the total vapor pressure, or initial boiling point, as applicable.

**(e) CONTROL EQUIPMENT**

(1) In lieu of complying with the provisions of Subsections (d)(1), (d)(2), (d)(3), (d)(5), (d)(6), or (d)(7), or any combination thereof, a person may elect to use an air pollution control system which:

- (i) Has been installed in accordance with an Authority to Construct; and
- (ii) Includes an emission collection system which captures the organic gaseous emissions generated from coating, surface preparation, and/or cleaning operations, as applicable, and transports the captured emissions to an air pollution control device; and
- (iii) Has an overall control efficiency of at least 85% by weight.

(2) A person electing to use an air pollution control system pursuant to Subsection (e)(1) shall submit an Operation and Maintenance Plan for the air pollution control device and emission collection system to the Air Pollution Control Officer for approval and receive such approval prior to operation of the air pollution control equipment. Thereafter, the plan can be modified, with Air Pollution Control Officer approval, as necessary to ensure compliance. The Operation and Maintenance Plan shall:

- (i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) such as temperatures, pressures, or flow rates; and

- (ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

Upon approval of the Operation and Maintenance Plan by the Air Pollution Control Officer, the person shall comply with the provisions of the approved plan thereafter.

**(f) RECORDKEEPING**

All records shall be retained on site for at least three years and made readily available to the District upon request. Any person subject to the provisions of this rule shall maintain records, as applicable, in accordance with the following:

**(1) Coating Operations**

Any person subject to the provisions of Subsections (d)(1), (d)(2), (d)(3), (d)(6), or (d)(7), or any combination thereof, shall maintain records in accordance with the following:

- (i) Maintain a current list of coatings, coating additives, thinners, surface preparation materials and equipment cleaning materials in use. This list shall provide all the data necessary to evaluate compliance, including, but not limited to:

- (A) Type and applicable coating category specified in Subsection (d)(1) of each coating used, including manufacturer and manufacturer identification.

- (B) Identification of all low VOC primers or primer surfacers as defined in Subsection (c)(25), if any.

- (C) Type of each coating additive, thinner, surface preparation material, and equipment cleaning material used, including manufacturer and manufacturer identification.

- (ii) Maintain monthly or daily records showing the manufacturer and manufacturer identification and the amount of each coating or coating component used, the actual mix ratio of components used in each coating, the type (Group I or Group II) of motor vehicle or mobile equipment to which each coating was applied, and whether or not color match was required.

- (iii) Maintain monthly or daily records showing the manufacturer, manufacturer identification and amount of each surface preparation and equipment cleaning material used.

- (iv) Maintain a copy of the records provided by the manufacturer or supplier as specified in Subsection (d)(10).

**(2) Control Equipment**

Any person using control equipment pursuant to Section (e) of this rule shall:

- (i) Maintain records in accordance with Subsection (f)(1); and

- (ii) For all coating, cleaning, and/or surface preparation materials not in compliance with Subsections (d)(1), (d)(6), or (d)(7), maintain daily records of the amount of each coating or each coating component for multicomponent coatings, surface preparation and cleaning material used; and

(iii) Maintain daily records of key system operating parameters as approved in the Operation and Maintenance plan. Such records shall be sufficient to document continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

**(3) Manufacturer and Supplier Sales**

Any person subject to the provisions of Subsection (d)(10) shall maintain records of all coatings, thinners, coating additives, surface preparation materials, or cleaning materials sold for use in, or delivery to, San Diego County. For each material sold, these records shall show the name and business address of the purchaser, the material manufacturer and manufacturer identification, and the amount of material sold.

**(g) TEST METHODS**

(1) Measurements of the VOC content of coatings subject to Subsection (d)(1), surface preparation materials subject to Subsection (d)(6), and cleaning materials subject to Subsection (d)(7) shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).

(2) Perfluorocarbon (PFC) compounds and cyclic, branched, or linear completely methylated siloxanes (VMS) shall be assumed to be absent from a coating, cleaning, or surface preparation material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.

(3) Measurements of the content of metal, other than aluminum, or iridescent particles in metallic/iridescent topcoat as defined in Subsection (c)(26) shall be conducted in accordance with South Coast Air Quality Management District (SCAQMD) Test Method 311-91, "Analysis of Percent Metal in Metallic Coatings by Spectrographic Method". Measurements of the content of elemental aluminum in metallic/iridescent topcoats as defined in Subsection (c)(26) shall be conducted in accordance with the SCAQMD Test Method 318-95 "Analysis of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction".

(4) Measurements of acid content of pretreatment coating as defined in Subsection (c)(37) shall be conducted in accordance with ASTM Standard Test Method D 1613-91 for Determination of Acidity in Volatile Solvents and Intermediates Used in Paint, Varnish, Lacquer and Related Products.

(5) Measurements of the reflectance of anti-glare/safety coating as defined in Subsection (c)(3) shall be conducted in accordance with ASTM Standard Test Method D 523-89 for Specular Gloss.

(6) Calculation of total VOC vapor pressure of surface preparation materials subject to Subsection (d)(6) and cleaning materials subject to Subsection (d)(7) shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures". If the calculated vapor pressure of the liquid mixture exceeds the limit specified in Subsections (d)(6) or (d)(7), as applicable, then measurements of the vapor pressure shall be conducted in accordance with ASTM Standard Test Method D 2879-86. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-92, E169-93, or E260-91. Measurements of the fraction of water and exempt compounds in the liquid phase shall be conducted in accordance with ASTM Standard Test Methods D 3792-91 and D 4457-85, respectively, and shall be used

to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Standard Test Method D 2879-86 shall be corrected for the partial pressure of water and exempt compounds.

(7) Measurements of the initial boiling point of cleaning and surface preparation materials subject to Subsection (d)(6) or (d)(7) shall be conducted in accordance with ASTM Standard Test Method D1078-86 for the distillation range of volatile organic liquids.

(8) Measurements of solvent losses from alternative application cleaning equipment subject to Subsection (d)(7)(vii) shall be conducted and reported in accordance with the South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems".

(9) Measurements of transfer efficiency pursuant to Subsection (d)(5)(vii) shall be conducted in accordance with the South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User".

(10) The overall control efficiency pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18 and 25 or 25A (40 CFR 60, Appendix A) and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency", January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as determined by the Air Pollution Control Officer may be used as indicators of the performance of the emission collection system.

#### (h) COMPLIANCE SCHEDULE

(1) Any person operating existing equipment who is electing to use control equipment to comply with one or more of the requirements of Subsections (d)(1) through (d)(7) shall meet the following increments of progress:

(i) By *(nine months after date of adoption)*, submit to the Air Pollution Control Officer an application for Authority to Construct and Permit to Operate an air pollution control system meeting the requirements of Section (e).

(ii) By *(eighteen months after date of adoption)*, issue purchase orders for the basic control device and other long delivery time components necessary to comply with Section (e).

(iii) By *(thirty months after date of adoption)*, demonstrate compliance with Section (e).

(2) Any person installing new equipment who is electing to use add-on controls to comply with one or more of the requirements of Subsections (d)(1) through (d)(7) shall comply with the provisions of Section (e) at startup.

**IT IS FURTHER RESOLVED AND ORDERED** that the addition of Rule 67.20 to Regulation IV shall take effect nine months after adoption.

**PASSED AND ADOPTED** by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 13th day of November, 1996 by the following votes:

**AYES:** Cox, Jacob, Roberts, Horn

**NOES:** None

**ABSENT:** Slater

APPROVED AS TO FORM AND LEGALITY  
COUNTY COUNSEL

BY: *Quinn*

DEPUTY

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution which is now on file in my office.

THOMAS J. PASTUSZKA  
Clerk of the Board of Supervisors

By *M Steele*  
Maritza Steele, Deputy

Resolution No. 96-314  
11/13/96 (APCD 3)

Rule 67.20

**Air Pollution Control Board**

Greg Cox	District 1
Dianne Jacob	District 2
Pam Slater	District 3
Ron Roberts	District 4
Bill Horn	District 5

**Air Pollution Control Officer**

R. J. Sommerville

October 15, 1996

TO: Rule 67.20 Workshop Participants and Other Interested Parties

FROM: Richard J. Smith  
Deputy Director

**ADDENDUM TO THE WORKSHOP REPORT  
PROPOSED NEW RULE 67.20 - MOTOR VEHICLE AND  
MOBILE EQUIPMENT REFINISHING OPERATIONS**

**WRITTEN COMMENTS ON SOCIOECONOMIC IMPACT ASSESSMENT**

A draft socioeconomic impact assessment (SIA) and a revised draft of proposed new Rule 67.20 - Motor Vehicle and Mobile Equipment Refinishing Operations, were mailed to all interested parties on June 21, 1996. The revised draft rule would raise volatile organic compound (VOC) limits for primers (primers, primer surfacers, and primer sealers) to mitigate adverse economic impacts identified in the SIA. Written comments received on the revised draft rule and draft SIA, and District responses are as follows:

**1. WRITTEN COMMENT**

The SIA finding that 11% of the automotive refinishing shops in San Diego County will cease operations as a result of the rule adoption is not very reliable because it is based on a very small sample of businesses. Therefore, no changes in the rule should be made.

**DISTRICT RESPONSE**

The District disagrees. The SIA's conclusion of an adverse economic impact is based on a survey of 36 shops, approximately 10% of the automotive refinishing shops in San Diego. The District believes this is a reasonable sample on which to base general conclusions. From a purely statistical point of view, assuming this represents a random sample, there is an approximate 95% probability that the percentage of shops that would have to cease operations lies between 3% and 25%. Even if the actual percentage of shops ceasing operations were only 3%, this would indicate an adverse economic impact of concern that should be mitigated if possible.

## **2. WRITTEN COMMENT**

The survey results in the SIA are biased because businesses respond with a worst-case estimate when asked about the impact of regulations. Therefore, the SIA exaggerates the adverse economic impact and the rule should not have been revised to mitigate the impact.

### **DISTRICT RESPONSE**

The District disagrees. Although the actual amount of such bias is unknowable, survey respondents who indicated they would cease operations as a result of the rule were contacted again to verify their response. In addition, during analysis of the survey results, available financial information was examined to see if factors other than the proposed rule's impact would cause the businesses to cease operations. As a result of these efforts, the number of sampled businesses recorded as ceasing operations as a result of the rule was reduced from seven to four. The District believes this effort removed much of the worst-case bias.

## **3. WRITTEN COMMENT**

Market forces, not regulatory actions, are primarily responsible for driving most automotive refinishing shops out of business. Raising the VOC limit for primers based on the adverse impacts identified in the SIA is unwarranted.

### **DISTRICT RESPONSE**

The District disagrees. It is true that other social and economic factors besides proposed Rule 67.20 may adversely impact automotive refinishing shops. However, in any economic climate, some marginal shops may have to cease operations because of the cost impacts of the original proposed Rule 67.20. Since the District can achieve essentially the same emission reductions with a higher VOC limit for primers, there is no reason not to mitigate the potential adverse impact of the rule on these businesses. In addition, the proposed changes to Rule 67.20 will reduce costs for all shops—not just those in marginal financial condition—and achieve emission reductions in the most cost effective manner.

## **4. WRITTEN COMMENT**

There is only one Best Available Retrofit Control Technology (BARCT) guidance for automotive refinishing and other districts have adopted this BARCT guidance with no catastrophic loss in automotive refinishing businesses. Therefore, there is no need to revise the primer VOC limits.

### **DISTRICT RESPONSE**

The District disagrees. BARCT guidance for automotive refinishing is currently being revised because some coating VOC limits are not technologically or economically feasible. The District does not know of any air district's rules that strictly follow the current BARCT guidance. Except for the proposed primer VOC limits, the VOC limits in proposed new Rule 67.20 correspond to the less stringent of two proposed revised BARCT guidance standards that are under review by the Air Resources Board (ARB). Several other districts have adopted one of these proposed revised BARCT standards. The District has contacted some of these districts to assess the economic impact of their automotive refinishing rules. While there has probably been no catastrophic loss of



businesses, the districts contacted do not track how many automotive refinishing shops have ceased operations as a result of their rules. Business losses on the order of 10%, as estimated in the SIA, may not be noticed.

**5. WRITTEN COMMENT**

Rule 67.20 is less stringent than the automotive refinishing BARCT guidance and, therefore, is not approvable by ARB.

**DISTRICT RESPONSE**

Recently adopted provisions of state law (H&S Code, Section 40920.6(b)) make it clear that the District may establish BARCT based on identifying potential control options and assessing the cost effectiveness of those options and local environmental, energy, and economic impacts.

**6. WRITTEN COMMENT**

The revised rule does not represent BARCT and cannot be approved for inclusion in the State Implementation Plan (SIP).

**DISTRICT RESPONSE**

District rules approved in the SIP do not necessarily have to correspond to BARCT because BARCT is not required by federal law. As was discussed in the response to the previous comment, the District can establish BARCT based on specific local conditions. Moreover, at this time, the District does not plan to include Rule 67.20 in the SIP because San Diego County can meet federal Clean Air Act mandates without including the rule in the SIP.

**7. WRITTEN COMMENT**

Organic solvent-borne primers and primer surfacers with a 250 g/l (2.1 lb/gal) VOC limit exist. They do not necessarily require a precoat and raising the primer and primer surfacer VOC limit to 420 g/l (3.5 lb/gal) is not justified.

**DISTRICT RESPONSE**

The District disagrees. Discussion with industry representatives indicate that existing organic solvent-borne primers that can meet a 250 g/l VOC limit do not perform satisfactorily for general use. In at least two cases, organic solvent-borne primers that meet a 250 g/l VOC limit also require precoats with a high VOC content—as do water-borne primers—to function adequately on all bare metal surfaces.

**8. WRITTEN COMMENT**

Raising the primer and primer surfacer VOC limit to 420 g/l from 250 g/l will not improve productivity.



### **DISTRICT RESPONSE**

The District disagrees. District discussions with coating manufacturers and suppliers indicate that there are significant productivity differences in using organic solvent-borne primers and primer surfacers that can meet a 420 g/l VOC limit compared to water-borne primers and primer surfacers. Water-borne coatings dry slower than organic solvent-borne coatings, especially when ambient humidity is high. Also, water-borne primers must be dried very thoroughly to prevent trapping water and causing subsequent failure of organic solvent-borne topcoats. Because of San Diego County's warm climate, automotive refinishers do not generally possess equipment such as heated spray booths and portable infrared heaters necessary to overcome these disadvantages of water-borne primers. Finally, organic solvent-borne primers and primer surfacers meeting a 420 g/l VOC limit do not require a precoat when used on bare metal. This eliminates one step in the automotive refinishing process and reduces VOC emissions from precoat application.

### **9. WRITTEN COMMENT**

There is only one manufacturer supplying primer surfacers at the 420 g/l VOC limit. Manufacturers who supply primer surfacers with a lower VOC content at a higher price per gallon (but at an equivalent price per gallon of solids) will be at a competitive disadvantage because automotive refinishers purchase on a gallon price basis.

### **DISTRICT RESPONSE**

At least two manufacturers that supply a large fraction of the automotive refinishing paint used in San Diego County have indicated no concerns to the District about a 420 g/l primer VOC limit. The District also believes that automotive refinishers understand the concept of surface coverage and will consider it along with other factors when purchasing paint.

### **10. WRITTEN COMMENT**

The proposed primer standard of 420 g/l in Rule 67.20 is different from the three other levels of control in California and also different from EPA's proposed national rule. To introduce this different standard will greatly complicate paint manufacturers' ability to distribute appropriate compliant coatings in California.

### **DISTRICT RESPONSE**

The District is sensitive to the desire of paint manufacturers to have uniform coating regulations throughout California and the nation. However, the District must also consider the economic and environmental impact of air pollution control rules on affected businesses and air quality in San Diego County. Raising the primer VOC limit to 420 g/l will significantly mitigate the economic impact of Rule 67.20 on automotive refinishing operations in San Diego County while achieving the same environmental benefits.

### **11. WRITTEN COMMENT**

The availability of 420 g/l primers and primer surfacers will give San Diego County automotive refinishing shops an unfair competitive advantage with areas outside the County because of lower paint costs, lower capital costs, and improved productivity.

### **DISTRICT RESPONSE**

The District develops rules and regulations based on the environmental and socioeconomic impact on San Diego County and is committed to achieve emission reductions in the most cost effective manner.

The South Coast Air Quality Management District (SCAQMD), which borders San Diego County, has more stringent VOC limits in its automotive refinishing rule in several coating categories because of the more severe air quality problems in that district. To require San Diego County to have the same rules and regulations as SCAQMD would pose an economic burden on the County out of proportion to the environmental benefits.

### **12. WRITTEN COMMENT**

Removal of the precoat category from the rule is counterproductive as it prevents the use of environmentally beneficial and less toxic water-borne primers which require a precoat when used over bare metal. There would be no incentive for automotive refinishers to use, or paint manufacturers to develop, such products. Adding a precoat category would allow the use of water-borne coatings.

### **DISTRICT RESPONSE**

The District agrees. Although, water-borne primers may also contain toxic materials, allowing precoat use with low VOC coatings gives additional flexibility to automotive refinishing operations with no impact on emission reductions. The District compliance staff also believes there are sufficient safeguards in the rule to prevent the use of precoats to circumvent the requirement to use low VOC primers, as has happened in other air districts. Accordingly, the proposed rule is being revised to allow the use of precoats with primers or primer surfacers having VOC contents of 250 g/l (2.1 lb/gal) or less.

### **13. WRITTEN COMMENT**

A primer VOC limit of 575 g/l (4.8 lb/gal), which is proposed by EPA in the national automotive refinishing rule, is a better alternative than a primer limit of 420 g/l. There would be no loss of productivity and the District rules would be consistent with the national rule.

### **DISTRICT RESPONSE**

The District disagrees. The presently proposed VOC limits in Rule 67.20 for primers and primer surfacers result in only about 2.5 tons of excess VOC emissions (about 0.5% of the total estimated emission reductions achieved by the rule) compared to a 250 g/l limit, when the latter limit is met with water-borne primers requiring a precoat. However, primer VOC limits identical to the EPA's proposed national rule would increase estimated VOC emissions under the rule by about 19 tons per year or about 4%. Since San Diego County is a "serious" ozone nonattainment area, the California Clean Air Act requires the District to adopt all feasible measures to reduce ozone precursors, including VOCs. Rule 67.20, as currently proposed, is a feasible measure and overall rule cost effectiveness is comparable to the cost effectiveness of other recently adopted VOC control measures. It is also consistent with state Best Available Retrofit Control Technology (BARCT) recommendations.

#### **14. WRITTEN COMMENT**

The rule would be more effective if a provision prohibiting sale of coatings violating VOC limits were added.

##### **DISTRICT RESPONSE**

The District disagrees. As the District previously discussed in the report for the June 15, 1995, workshop (see response to Workshop Comment No. 12), a prohibition of sale cannot be included in the rule because of rule exemptions and the complexity of automotive coating systems. However, as a result of this workshop and discussions with automotive refinishing industry representatives, the District has added a provision to the rule requiring suppliers to maintain records of automotive coating sales. This provision is an effective method to ensure uniform application of the rule and overall rule effectiveness.

#### **15. WRITTEN COMMENT**

The District has underestimated the cost impact of the rule on consumers. If 11% of the automotive refinishing shops cease operations as a result of the rule, the laws of supply and demand will drive up the price for automotive refinishing much more than the maximum of 3% estimated in the SIA. Prices for automotive refinishing are currently much higher in the Los Angeles area, which has an automotive refinishing rule, than in San Diego County.

##### **DISTRICT RESPONSE**

The District disagrees. As discussed in the SIA, most automotive refinishing shops cannot freely raise prices because of insurance industry constraints. The Los Angeles area automotive refinishing rule is more stringent than proposed new Rule 67.20 and would be expected to have more severe economic impacts. In addition, the District believes that current changes to proposed Rule 67.20 to mitigate adverse economic impacts will significantly reduce the number of shops ceasing operations and potential price increases.

#### **16. WRITTEN COMMENT**

The compliance costs of the rule will be passed on to insurance companies and raise the cost of automobile insurance. This will increase the number of uninsured motorists, a serious socioeconomic impact.

##### **DISTRICT RESPONSE**

The District disagrees. Most automotive refinishing shops cannot at this time freely raise prices or pass their costs on to the insurance companies. In time, some compliance costs may be passed on to insurance companies, but the District does not believe the effect on insurance cost would be significant. Nationally, refinishing only accounts for about 30% of all automotive repair costs. In addition, actual repair costs account for only a small portion of automotive accident insurance premiums, which also cover personal injury awards, litigation costs, and medical expenses. If insurance costs were to rise as a result of a 3% rise in the cost of refinishing operations, they would rise much less than 1%.

**17. WRITTEN COMMENT**

The District's estimate of a 500 ton per year VOC reduction is optimistic.

**DISTRICT RESPONSE**

The District's emission reduction estimate is based on the best information currently available including information on coating usage in the District's permit files, emission inventory data, and a survey of coating use by coating category in the Los Angeles area conducted before coating VOC content was regulated there.

**18. WRITTEN COMMENT**

The District should wait until the revised automotive refinishing Best Available Retrofit Control Technology (BARCT) is available to develop the rule so that its recommendations can be considered during rule development.

**DISTRICT RESPONSE**

The District disagrees. Although the revised automotive refinishing BARCT has not been formally approved by ARB, Rule 67.20 incorporates most of the recommendations of the proposed revised BARCT. In addition, the District's Regional Air Quality Strategy committed to achieve emission reductions from automotive refinishing operations before the end of 1997, and, therefore, the District cannot wait for formal approval of the revised automotive refinishing BARCT before adopting Rule 67.20.

**19. WRITTEN COMMENT**

Input from local educational institutions would be useful since they may train new automotive refinishing painters.

**DISTRICT RESPONSE**

The District attempted to solicit comments from as many groups as possible during the rule development process. Representatives of local educational institutions were invited to attend the workshops for Rule 67.20, and those who expressed interest were provided copies of the workshop reports and the SIA.

**20. WRITTEN COMMENT**

Without heating, how does the drying time for compliant coatings compare to conventional coatings? Many shops may not have adequate space to change their process to allow for longer drying times.

### **DISTRICT RESPONSE**

The unheated drying time for compliant coatings is highly variable, depending on the coating and ambient conditions. Under some conditions, it is possible that the drying time for some compliant coatings could be several hours longer than for conventional coatings.

Individual shops must decide, based on their operations and local conditions, whether to use supplemental heating or use available space to allow for longer drying times. The SIA addressed this question and the associated cost for the automotive refinishing shops in the survey sample.

#### **21. WRITTEN COMMENT**

The assumed lifetime for high volume low pressure (HVLP) spray guns in the SIA may be optimistic.

### **DISTRICT RESPONSE**

Most spray gun parts are replaceable and the SIA capital cost estimates include the cost of replacement parts. The annualized capital costs are based on the assumption that capital recovery will occur over 10 years with a 10% investment rate. The annualized capital cost of HVLP spray guns represents only about 5% of the total annual compliance cost for small shops and much less than 5% for medium and large shops. The SIA results would not be significantly affected if spray guns must be replaced every 5 years.

#### **22. WRITTEN COMMENT**

There are many cases where the cost of recordkeeping is burdensome, especially for small businesses. Is considering the cost of recordkeeping insignificant in the SIA justified?

### **DISTRICT RESPONSE**

Automotive refinishing shops are currently regulated by District Rule 66 - Organic Solvents, which requires recordkeeping similar to Rule 67.20. Also, many shops are subject to New Source Review limitations on their permits and are required to keep daily records. The SIA considered the difference in the recordkeeping costs between Rule 67.20 and Rule 66 to be insignificant but did not consider the overall cost of recordkeeping to be insignificant.

The District has made its best efforts to minimize recordkeeping requirements of the rule while ensuring compliance can be readily determined through records. It should also be noted that, the District is not submitting this rule to EPA for approval because the District does not believe EPA's recordkeeping policy is appropriate for the automotive refinishing industry.

#### **23. WRITTEN COMMENT**

The cost impacts of the rule will disproportionately impact smaller shops. This may create a barrier to small shops entering the automotive refinishing business and reduce competition.

**DISTRICT RESPONSE**

Although capital compliance costs associated with Rule 67.20 will vary widely depending on existing equipment and types of work, the average capital cost per facility is estimated to be \$6,600 for small shops, \$10,000 for medium shops, and \$14,000 for large shops. The SIA analysis could not determine the equity available for each size category of shops so the exact impact of these compliance costs cannot be estimated. However, there was no indication, except as noted in the SIA, that they would be forced to cease operations due to these compliance costs.



RICHARD J. SMITH  
Deputy Director

RJSm:SM:jl

# **SOCIOECONOMIC IMPACT ASSESSMENT**

## **PROPOSED RULE 67.20 - MOTOR VEHICLES AND MOBILE EQUIPMENT REFINISHING OPERATIONS**

# **FINAL**

**OCTOBER 1996**

**Prepared for**  
**Air Pollution Control District**  
**9150 Chesapeake Drive**  
**San Diego, CA 92123**

**Prepared by**  
**Jack Faucett Associates**  
**Walnut Creek, CA**

**SOCIOECONOMIC IMPACT ASSESSMENT  
PROPOSED RULE 67.20 -  
MOTOR VEHICLES AND MOBILE EQUIPMENT  
REFINISHING OPERATIONS**

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## EXECUTIVE SUMMARY

This report presents the results of a socioeconomic impact analysis (SIA) of the San Diego County Air Pollution Control District proposed new Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations). Rule 67.20 implements best available retrofit control technology (BARCT) requirements of the California Health and Safety Code.

The purpose of the rule is to limit emissions of volatile organic compounds (VOC) from automobile refinishing operations. It imposes limitations on the VOC content of coatings, surface preparation, and cleaning materials and requires the use of high transfer efficiency spray application equipment and enclosed cleaning devices for application equipment. If implemented, the rule will reduce VOC emissions in San Diego County by about 500 tons per year at an estimated overall cost-effectiveness of \$1.30 per pound of VOC reduced.

The principal businesses affected by this rule are approximately 400 automotive collision repair and painting shops (SIC 7532) in San Diego County. This industry is currently undergoing rapid change because of capital investments needed to repair and refinish modern automobiles and changes in insurance industry practices. It is anticipated that compliance with the rule will require many shops to purchase additional capital equipment (primarily heating systems to reduce the drying time of compliant coatings) and incur increased operating costs. The amount and type of equipment that would be purchased by the industry and their reaction to the anticipated increased costs was estimated by contacting a sample (about 10%) of affected businesses.

Based on the responses from the shops contacted, overall annual costs to the industry, including annualized capital costs, are estimated to be \$1,300,000, about 17% of industry profits. Capital costs are estimated to be \$4,000,000, about 12% of industry equity. These may be conservatively high estimates but are based on reasonable assumptions discussed in the report. Compliance costs for individual businesses will vary widely depending on their size and coating equipment.

The majority of businesses contacted reported they would absorb the rule's compliance costs by reducing profits rather than increasing costs to their customers because the amount they can charge is, for the most part, controlled by the insurance industry. Some portion of these costs may be recovered in future years as insurance companies allow increased repair charges that reflect the increased costs of doing business in the San Diego Area. Less than 5% of businesses are expected to raise prices. In those cases, the actual cost increase to the customer is expected to be less than 3% per job. Rule 67.20 compliance costs are not expected to shift work to other areas of California where similar emission control rules exist or Mexico, where insurance repairs are not authorized.

Some contacted shops stated they would respond to the compliance costs by ceasing operations. Extrapolating these responses to the entire industry would indicate that about 11% (45 shops) of the automotive collision repair and painting shops in San Diego County could go out of business when faced with the additional costs associated with complying with Rule 67.20. However, because of the small number of shops contacted and the difficulty in accounting for general industry trends, the actual number of shops that would cease operations as a direct result of Rule 67.20 is very uncertain.

The District has made its best efforts to minimize adverse socioeconomic impacts resulting from proposed Rule 67.20. After two workshops and numerous consultations with industry, the District revised proposed Rule 67.20 to comply with the least stringent of two state BARCT Guidance options for coating VOC limits and removed an exemption for shops with low-coating usage to address industry fairness concerns. The District also adjusted state BARCT requirements to minimize impacts by revising the proposed rule to allow a higher VOC content for surface preparation and cleaning materials than the BARCT Guidance, and allow the use of low volatility surface preparation and cleaning materials containing VOCs, place more flexible usage limits on specialty coatings, and allow automotive restoration shops limited use of conventional coatings.

## INTRODUCTION

While the attainment of clean air standards confers many benefits, these benefits do not come without some costs. Therefore, the development of effective air quality management strategies must consider the social and economic costs of regulations as well as the air quality benefits. Recognizing this, in 1991 the California legislature adopted a new law (Health and Safety Code §40728.5) that requires air pollution control districts with populations of 500,000 or more to perform socioeconomic impact assessments of their rules and to consider these impacts in the adoption, amendment, or repeal of rules or regulations that will significantly affect air quality or emissions limitations. This report presents the results of a socioeconomic impact analysis (SIA) of San Diego County Air Pollution Control District's (District) proposed new Rule 67.20—Motor Vehicle and Mobile Equipment Refinishing Operations. The purpose of the rule is to limit emissions of volatile organic compounds (VOC) from automobile and related vehicle refinishing operations. This analysis examines the expected direct economic impacts to affected businesses.

Proposed new Rule 67.20 will limit VOC emissions from facilities that finish or refinish (paint or repaint) motor vehicles, mobile equipment, bicycles, and their component parts. The rule will primarily affect automotive collision repair and painting businesses nearly all of which currently use coatings and solvents with high VOC contents in their day-to-day operations. The rule is expected to significantly reduce the VOC emissions from coating and solvent use in the automotive collision repair and painting industry primarily by limiting the VOC content of coatings, requiring high transfer efficiency coating application methods, and minimizing emissions from coating application equipment cleaning operations. Total emission reductions are expected to be 500 tons per year.

The SIA is used to determine a rule's economic impact on business, including small business, and the rule's cost-effectiveness (cost per amount of air pollutant reduced). The District provides affected entities an opportunity to comment on the SIA thereby giving them further means to participate in the rule development process in addition to District public workshops and numerous contacts by District staff with the affected industry. The SIA also lays a foundation for the District to mitigate adverse socioeconomic impacts of the rule to the extent possible. For rules mandated by state or federal requirements regional economic impacts beyond the affected industry need not be considered.

## **SOCIOECONOMIC IMPACT ANALYSIS METHODOLOGY**

The following steps were undertaken in the socioeconomic impact analysis procedure.

1. The necessity of adopting the rule to meet state or federal air quality mandates was examined.
2. The potentially affected industries and business entities were identified and current economic trends within those industries identified.
3. The rule was evaluated to determine what compliance actions are required and the impact of those actions on the affected entities. This included an evaluation of operational changes or equipment additions or modifications required to maintain productivity while complying with the rule.
4. The unit costs associated with using compliant materials and purchasing, installing, and operating any additional equipment was estimated.
5. A set of likely business responses to these regulatory costs were evaluated. Business responses include actions such as passing increased costs on to customers, reducing output, laying off workers, reducing profits, going out of business, or reducing costs in other areas.
6. Individual businesses were contacted to determine how different anticipated business responses correlate with economic characteristics of the affected businesses.
7. Business responses were then compiled and estimates made of how the total population of affected businesses will respond to the rule, and a quantitative estimate of the direct economic impacts on the affected businesses was made.
8. The overall significance of the impact on the affected businesses was assessed. Possible indirect impacts on the businesses as a result of the direct impacts were assessed in a qualitative manner.
9. The cost-effectiveness of the rule was evaluated.
10. The rule's benefits were assessed including emission reductions.

## NECESSITY FOR ADOPTING RULE 67.20

VOCs react with oxides of nitrogen in the presence of sunlight to form ozone in the atmosphere. Currently, San Diego County does not meet the state Ambient Air Quality Standard (AAQS) for ozone and is classified by the state Air Resources Board as a serious non-attainment area for ozone. The California Clean Air Act requires San Diego County to provide a plan that includes every feasible measure to control ozone and its precursors and attain the state Ambient Air Quality Standard for ozone at the earliest practicable date. The 1991 San Diego County Regional Air Quality Strategy (RAQS) is San Diego County's plan to attain the state Ambient Air Quality Standard and includes adoption of Rule 67.20 as a feasible measure to control VOC emissions from automotive refinishing operations.

In addition, the California Clean Air Act requires that serious ozone nonattainment areas reduce emissions from existing stationary sources by installation of Best Available Retrofit Control Technology (BARCT). A BARCT determination for automotive refinishing operations was made by the state Air Resources Board in 1991 and is currently being revised. BARCT is defined as achieving the maximum degree of emissions reduction considering energy, environmental and economic impacts. Rule 67.20 fulfills the state requirement for BARCT for automotive refinishing. Rules similar to or more stringent than Rule 67.20 have been adopted by Ventura County, Santa Barbara County, South Coast Air Quality Management District, Bay Area Air Quality Management District, San Joaquin Valley Air Quality Management District, and other California air districts that violate federal or state air quality standards for ozone.

## INDUSTRIES AFFECTED BY RULE 67.20

The adoption of Rule 67.20 will affect several industries including automotive collision repair and painting (SIC 7532), wholesale paint and equipment dealers (SIC 5198) and several other businesses in other industries. The majority of businesses directly affected by the rule will be automotive collision repair and painting shops. These shops repair damage to cars from accidents and completely or partially repaint automobiles. Equipment and paint supply companies provide business supplies to automotive collision repair and painting shops and would only be indirectly affected by this rule. Several other businesses directly affected by this rule include companies with private fleets of delivery trucks, military operations, and waste disposal companies that repaint their vehicles. It is estimated from District permit files that these latter firms account for less than 2% of all businesses affected by the rule. Therefore, this SIA was focused on the impacts to the automotive collision repair and painting industry (SIC 7532).

There are approximately 400 businesses in the San Diego area that engage in automobile refinishing operations. This estimate agrees well with the number of permitted facilities in the District permit files (366 currently) and with County Business Patterns <sup>1</sup>.

To identify how different types of businesses within an industry are affected by the rule, facilities were grouped based on similar economic characteristics. It was assumed that businesses with similar economic characteristics were likely to have similar equipment requirements and compliance costs and react to costs in a similar manner. Data collected from a set of representative businesses in each group could then be used to represent the impacts on the rest of the affected population.

Businesses were grouped by the number of employees. The groups were developed through discussions with suppliers and confirmed through County Business Patterns. Small shops are characterized by shops with 1-5 employees that work primarily with jobs paid for directly by the

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<sup>1</sup> County Business Patterns publishes industry wide data on the number of businesses, employment and payroll within a county.

customer instead of jobs paid for by insurance. Medium shops have from 6-11 employees and their work is 50% insurance related and 50% paid for by the customer. Large shops have 12 or more employees and their work is 90 to 100% insurance related work. Table 1 summarizes the number of employees, whether private individuals or insurance companies pay for work, and the relative number of shops for small, medium, and large shops.

These groups are used solely to distinguish direct impacts on affected business with different economic characteristics. These categories are not intended to identify impacts on small businesses as required by Section 40728.5 of the Health and Safety Code, which requires that special attention be paid to identifying impacts on small businesses. The state defines small businesses as those with less than 100 employees. All businesses affected by the proposed rule were smaller than 100 employees. Therefore, the three size categories were developed merely to evaluate impacts and not to distinguish impacts on small businesses.

**TABLE 1. AUTOMOTIVE COLLISION REPAIR AND  
PAINTING SHOPS BY SIZE CATEGORY**

Shop Characteristic	Small Shops	Medium Shops	Large Shops
Number of employees	1-5	6-11	12+
Number of shops	150	150	100
Percentage of total shops	37.5%	37.5%	25%
Percentage of jobs paid for by insurance	10%	50%	90 %

## INDUSTRY TRENDS

According to industry representatives, the character of the automotive collision repair and painting industry has been changing over the last several years and is expected to continue to change dramatically in the upcoming years. The prevalent trend is towards the consolidation of small shops in favor of larger shops, thereby exploiting the competitive advantage obtained through economies of scale. Industry representatives are of the opinion that many smaller shops will be forced out of business because they do not have the capital resources to stay competitive. Increasingly, automotive collision repair and painting shops have capital equipment requirements that impose a substantial cost burden on the business. These costs are creating barriers to entry for smaller businesses. Shops that can invest in equipment and training are expected to grow and capture the business from the shops that do not possess the necessary financial resources. Some possible capital improvements necessary to remain competitive in the business include four wheel alignment equipment, structural alignment analysis equipment, computerized estimating systems, metal inert gas welders, and downdraft paint spray booths.

Changes which take place in the automotive collision repair and painting industry are often driven by changes in the insurance industry. A high percentage (80%) of automotive collision repair and painting work is related to insurance claims. This number represents a national percentage but industry representatives believe similar percentages exist for shops in San Diego County. The remaining 20% of work in the industry is paid for by the customer. Because the majority of business in the automotive collision repair and painting industry is insurance related, changes in insurance industry practices have dramatic effect within the automotive collision repair and painting industry.

One program forcing changes in the automotive collision repair and painting industry is the Direct Repair Program (DRP). DRP designated shops can make in-house damage estimates to expedite the repair process and eliminate the field adjuster. Many insurance companies have instituted DRP or similar programs and those that have not are expected to establish DRP in the near future. Participating shops need to meet the insurance industry standards. This requires additional equipment that small and medium shops are unlikely to have or be able to purchase. In the future, insurance companies are expected to refer a greater percentage of jobs to DRP shops. Several years ago the DRP program constituted 6% of the industry related work. Today it is estimated that around 30% of insurance-related business is sent to DRP shops and this number is expected to grow dramatically.

Another trend affecting the automotive collision repair and painting industry is the recent decline in the number of accidents occurring in San Diego County. California Highway Patrol reports indicate that in the last several years, the number of accidents have been down by around 20%. This is due in part to programs such as the reduction in speed limits (although some speed limits have recently increased), better traffic management on city streets, and increased awareness and education. Moreover, as the quality of Original Equipment Manufacturers (OEM) and after market paints and painting processes improve, cars do not need to be painted as often. These trends are significantly reducing the amount of business in the automotive collision repair and painting industry. The resulting impact has been a reduction in the amount of automotive collision repair and painting businesses nationwide and in the San Diego area. These trends are expected to continue.

## **RULE EVALUATION**

Proposed new Rule 67.20 imposes limitations on the VOC content of coatings and surface preparation and cleanup materials used in automobile refinishing operations. Rule 67.20 also requires businesses to use high transfer efficiency application equipment and enclosed equipment cleaning apparatus (or meet equipment cleaning material VOC limits). Except for limited exemptions, this rule applies to all commercial refinishing or finishing operations for motor vehicles, mobile equipment, bicycles and their component parts. Mobile equipment includes truck bodies, truck trailers, utility bodies, camper shells, locomotives, railcars, trolleys, military vehicles, aircraft ground support equipment, mobile cranes, bulldozers, street cleaners, golf carts, and farm equipment.

## **SPECIFIC RULE REQUIREMENTS**

The specific rule requirements are outlined below.

- VOC content of coatings, as applied, must not exceed specified limits in the rule for various coating categories (e.g., primers, primer sealers, single stage topcoats, and multistage topcoat systems).
- VOC content of surface preparation materials must not exceed 200 grams per liter.
- High transfer efficiency application equipment such as high volume low pressure (HVL) spray guns must be used to apply coatings.
- Cleaning of application equipment must be done in a manner that minimizes evaporation of cleaning solvent by using an enclosed spray gun washer or a cleaning material with VOC content of 200 grams per liter or less.
- Add-on air pollution control equipment that has an 85% overall control efficiency may be used in lieu of complying with the above standards.

- Suppliers must provide customers information necessary to determine compliance with the rule. Suppliers must also maintain sales records of all coatings and surface preparation and cleaning materials sold for use in San Diego County.
- Daily or monthly records sufficient to determine compliance with the rule must be kept at all facilities. These records must include a current list of coatings, additives, thinners, surface preparation and cleaning materials used; the amounts of VOC containing materials used; and the actual mix ratio of coating components used.

**The rule does not apply to:**

- Original equipment manufacturer's (OEM) parts during original manufacture.
- Non-commercial repainting operations performed by individuals on their own vehicle at their residence.
- Touch-up coatings, graphic design applications, non-refillable handheld aerosols, body fillers, and bedliner coatings.
- Coating of radiators or engine components.
- Coatings used exclusively to restore motor vehicles (limited to 50 gallons per year).
- Underbody coatings and topcoat sealants (yearly records must be kept).
- Painting of mobile homes.

**IMPACT OF RULE REQUIREMENTS ON BUSINESS**

All businesses, regardless of size, that engage in automobile refinishing operations will be subject to Rule 67.20. The major economic impact of the rule will be the cost of using complying low VOC coatings. In many cases the drying time for coatings that meet the rule's VOC limits is longer than for coatings currently in use. In addition, many coatings that meet the rule's VOC limits—especially water-based coatings—are more sensitive to environmental conditions than current coatings. To combat increased drying times, shops may need to install heated paint spray booths, retrofit heating systems to existing paint spray booths, use portable infrared heaters, change production practices, or use a combination of these techniques to maintain current levels of productivity. In addition, operator training is required to use the new coating products and maintain quality.

Increased drying times will result from the use of high solids single stage topcoats (that have lower VOC content), high solids clear coats as part of multistage topcoat systems, and water based primers and primer sealers that most manufacturers are relying on to meet the VOC limits. Ambient air drying times are expected to increase by 60 minutes or more for many of these coatings. In addition, unlike conventional coatings, drying times of many low VOC coatings are very sensitive to ambient conditions such as temperature, relative humidity, and air movement.

Drying times can be significantly reduced by heating paint spray booths to approximately 140–160°F or by using portable infrared (IR) heaters. Heated paint spray booths will probably be necessary for shops where the complete refinishing of automobiles represents a large portion of their business because portable IR heaters are not suitable for use on these jobs. These shops may also need to purchase additional paint spray booths for priming operations since this is currently often performed outside of a booth in San Diego County. Portable IR heaters are most useful for increasing drying rates on small areas when partially refinishing automobiles. It is very likely that even shops that have heated paint spray booths will also have to use supplementary portable IR heaters to make the most efficient use of the heated paint spray booth and prevent production bottlenecks. However, one industry representative has stated that paints with lower VOC content still take 30 minutes longer to dry even when heated.



Some shops may be able to comply with Rule 67.20 without incurring the costs of installing heated paint spray booths. Drying times can vary dramatically among shops depending on the specific conditions. It is possible that drying times in the warm season in many areas will not increase. Increased drying times in the cold months could be overcome by shifts in processes rather than incurring costs for equipment. For example, a shop might choose to use low VOC coatings at the end of the day and allow the car to dry overnight. Shops with relatively small production volumes might find it more cost-effective to reduce productivity to some degree as drying times increase and other shops might choose to alter their processes to utilize their down time more effectively. The feasibility and costs associated with these methods of coping with the requirements of Rule 67.20 are difficult to estimate. However, it is unlikely that all shops will be able to rely completely on reduced productivity and process changes to combat increased drying time and will also have to purchase supplemental portable IR heaters.

HVLP spray guns are the most likely option for automotive refinishing operations to comply with the rule's coating transfer efficiency requirements. Businesses that do not already use HVLP spray guns will have to purchase them and train the operators in their use. It is also likely that all affected businesses will choose to purchase enclosed gun washers to comply with the rule's application equipment cleaning requirements.

Training is readily available on how to effectively integrate low VOC coatings and HVLP spray guns into the automotive refinishing process. With proper training and a willingness to adapt, painters in other air districts have quickly achieved high levels of efficiency and quality. However, switching to these coatings is likely to result in an initial temporary decrease in productivity as the painter adjusts to the differences in the painting process. Experiences from painters in areas already using low VOC coatings indicate that it takes a painter anywhere from three days to several weeks to adapt to the product and process differences. However, after a transition period, productivity has been maintained and some industry representatives expressed the opinion that the refinishing quality has actually improved. Some painters and paint distributors in the San Francisco Bay Area who are using low VOC paints claim that, compared to conventional paints, the low VOC products offer the same or, in some cases, better quality. Other painters agreed that the overall job quality was maintained, but, for certain high end jobs, the low VOC paints could not match conventional paints. This initial loss of productivity associated with the transition to low VOC coatings is not considered significant relative to the average output of most shops.

Complying with Rule 67.20 by using add-on emission control equipment to reduce VOC emissions is not a practicable option because of the high capital cost of add-on pollution control equipment and the small size of the affected businesses. Therefore, no businesses are expected to use this option to comply with the rule.

## **RANGE OF PROBABLE UNIT COSTS**

The cost estimates listed below were developed through discussions with equipment vendors, manufacturers, suppliers, and shop owners. While it is possible a shop might incur costs above these estimates, in most cases these costs reflect a conservatively high estimate of actual costs. Discussions with body shops in the Bay Area that were required to purchase similar equipment showed average costs lower than the estimates presented below.

Operating costs depend on the amount and type of work done by a facility. District staff estimated the annual average number of automobiles completely and partially refinished from inspection reports and District permit files for large, medium, and small facilities. These estimates were then used to estimate operating costs.



## **COST OF RETROFITTING OR PURCHASING NEW PAINT SPRAY BOOTHS TO PROVIDE HEAT**

The cost of retrofitting a paint spray booth with a gas-fired heating system (the typical choice) is estimated at \$18,000 (installed). The cost for a new paint spray booth with gas-fired heat is estimated at \$37,500 (installed). The capital cost of retrofitting or purchasing paint spray booths with infrared heating is similar. Some shops may be forced to incur these costs because they currently do not have a heated paint spray booth and the nature of their work will require using such a booth instead of relying only on portable IR heaters. However, some shops may elect to replace their current paint spray booth with a more modern one to improve the quality of their refinishing operations in addition to the need to comply with Rule 67.20.

## **COST OF INFRARED HEATERS**

Costs for short and medium wavelength IR heaters, without expensive automatic surface temperature sensors and controls, range from \$1500 to \$3500, depending on the type and size. It is anticipated that large shops electing to purchase IR heaters will purchase one large and one small heater at a total cost of about \$5000, while small shops will only purchase a single large heater for \$3000 or less.

## **COST OF HEATING SYSTEM ENERGY, MAINTENANCE, AND LABOR**

The added cost of energy, maintenance, and labor for a heating system depends on the type and amount of equipment installed, the number of vehicles refinished, and whether the vehicles are partially or completely refinished. The estimated total annual energy, maintenance, and labor costs for the heating systems most likely to be installed (gas fired paint spray booth supplemented with portable IR for large shops and portable IR for medium and small shops) are about \$6100, \$2700, and \$1000 for large, medium, and small shops, respectively.

## **COST OF HVLP SPRAY GUNS**

It is anticipated that all shops not already using HVLP spray guns will choose to purchase them to satisfy the rule's coating transfer efficiency requirements. The cost of each new gun setup is approximately \$650. This estimate includes the gun, regulator, and extra atomizing kit. Some shops may need to replace several guns. The use of high transfer efficiency HVLP spray guns is anticipated to reduce the amount of coatings used and hence reduce coating costs. Although estimates of the amount of coating saved by using HVLP spray guns compared to conventional spray guns range up to 50%, a conservatively low estimate of 10% was used in the cost analysis. This conservatively low estimate takes into account the fact that the transfer efficiency of HVLP guns relative to the transfer efficiency of conventional guns depends on many factors including coating properties, operator skill, and size and shape of area coated. District staff estimate that using HVLP spray guns will save about \$6000, \$2000, and \$1000 in annual coating costs at large, medium, and small shops, respectively. The annualized capital cost of a HVLP spray gun is about \$100. Therefore, shops purchasing several guns to comply with the rule should save money. Overall, the increased use of HVLP spray guns required by the rule is estimated to save the industry about \$215,000 annually based on the degree of HVLP used indicated by responses from affected businesses (see below).

## **COST OF ENCLOSED GUN WASHERS**

Shops without at least one enclosed gun washer will be required to purchase one to comply with the rule. Each gun washer will cost approximately \$650. The use of enclosed gun washers will reduce solvent use and VOC emissions by approximately 80% and thereby save about \$2500, \$900, and \$350 in annual cleaning material costs at large, medium, and small shops, respectively. The

annualized capital cost of an enclosed gun washer is about \$100, so most shops will save money as a result of complying with this rule requirement. The industry-wide material cost savings from increased use of enclosed gun washers is estimated at \$30,000 annually.

### **COST OF COMPLIANT COATINGS**

The cost of water-based coatings is usually equal to or less than organic solvent-based coatings. The cost of organic solvent-based low VOC compliant coatings are often significantly higher than conventional coatings per unit volume. However, these compliant coatings often contain significantly more solid coating material per unit volume than conventional noncompliant coatings. Based on cost per volume of coating solids, use of compliant coatings would increase overall costs for coating materials by less than 3%. For businesses currently using HVLP spray equipment, this is estimated to increase annual coating costs by about \$1500, \$550, \$200 for large, medium, and small shops, respectively. For businesses currently using conventional spray equipment, costs for coating materials would decline because of improved transfer efficiency of the required HVLP spray guns (see above).

### **COST OF COMPLIANT SURFACE PREPARATION MATERIALS**

The cost of compliant surface preparation materials is not more than 30% greater than materials currently used. Based on current usage, this translates into a industry overall cost of about \$70,000.

### **COST OF RECORDKEEPING**

Costs associated with recordkeeping are a function of the characteristics of a particular business. The costs of recordkeeping will depend on the output (number of cars painted), efficiency with which records are kept, and hourly rate of the persons maintaining the records. Larger shops with more throughput may elect to purchase computerized recordkeeping systems and significantly reduce their labor costs. However, most shops are already required to keep daily or monthly records of VOC emissions to show compliance with other District rules or permit conditions. These records often include most of the information necessary to verify compliance with Rule 67.20. Therefore, the cost of additional recordkeeping required by Rule 67.20 is assumed to be insignificant.

### **COST OF TRAINING**

Discussions with industry representatives indicate that the direct cost of training painters and shop managers in the use of compliant coatings will be borne by the coating manufacturers and distributors and not the shops. The indirect cost involved in the transition to compliant materials is difficult to estimate and, as discussed above, not considered significant.

### **INDUSTRY RESPONSE TO PROBABLE COSTS OF PROPOSED NEW RULE 67.20**

To maintain productivity, individual businesses can respond in several ways to the anticipated costs of the proposed rule. The shops may choose to pass their costs on to their customers, accept reduced profits, alter their production practices to reduce anticipated cost, or choose to go out of business because of the anticipated impact of these costs on profits.

Shops with the majority of their work paid for by the customer may be able to increase their job prices to cover increased business costs. The increased price per job would be relative to the actual costs that are incurred. However, many shops may choose not to raise prices because if prices go up customers may choose not to get their car painted. These shops may choose to keep prices constant and cover increased costs by reducing profits.

A critical issue for many shops that work with jobs paid for by insurance companies is the degree to which insurance companies respond to increasing costs. Insurance companies tend to set job prices and when costs go up, it may take them several years to respond and adjust their rates appropriately. Additional costs to business might be absorbed out of profits until the insurance companies catch up. When insurance companies do adjust their rates, they will pass those costs on to their customers through increased premiums. These increases are likely to be shared equally among customers in San Diego. The cost impact of increased rates spread among the population will be insignificant.

## **CONTACTING AFFECTED BUSINESSES**

In order to determine the business responses of companies to increased regulatory costs from the proposed rule, a number of businesses were contacted. Respondents were questioned about their equipment characteristics and how they expect their business processes to change when using compliant coatings and complying with the other provisions of Rule 67.20. Questions related to equipment presently used included the number of paint spray booths, the number of heated paint spray booths, the number of non-HVLP spray guns, and whether the shop has an enclosed gun washer. These questions were asked to determine the magnitude of costs the businesses will face in complying with the rule.

A second set of questions were asked to determine if a business will purchase new equipment to combat increased drying times, make changes to their process, or respond to Rule 67.20 requirements in other ways such as going out of business. Finally, surveyed businesses were asked to provide their annual sales, the percentage of insurance related work versus work paid for by the customer, and, for businesses that have heated paint spray booths, the cost they incurred to retrofit or purchase them.

Forty businesses were contacted in the San Diego Area. This represents 10% of businesses in the automotive collision repair and painting industry. Of the 40 businesses, 10 were selected to represent the 100 larger shops with 10 or more employees and, based on District permit files, using more than five gallons of coatings per day. It was confirmed that businesses that use more coatings have higher throughput and tend to be larger businesses. The 10 larger shops surveyed included independent automotive collision repair and painting shops, automobile dealers, and franchise shops dedicated to refinishing operations.

Medium-sized and smaller businesses were selected from permitted shops that use less than five gallons of coatings per day. Thirty business were contacted and asked the same questions as the larger businesses. Twenty-six of 30 businesses responded. Of these, 13 fell into the small classification and 13 were medium size businesses. These represented businesses with 1-5 and 6-11 employees, respectively. The 26 medium and small businesses surveyed represent approximately 9% of all permitted shops in these size categories.

## **DIRECT IMPACTS OF EQUIPMENT COMPLIANCE COST ON BUSINESS**

Estimates of the compliance costs for large, medium and small shops were developed through contacts with affected businesses. The responses of the sample of businesses contacted in each group was analyzed to determine what types and quantities of new equipment would be purchased to comply with Rule 67.20. Based on the equipment needs of the specific shop and cost estimates developed by District staff, the total capital and operating costs, except for material costs, were calculated for each sample. Capital costs were annualized over a 10-year period with a 10% interest rate. The total cost was then extrapolated to determine the total compliance cost for that

group. Material costs or savings were not included because it was difficult to determine the applicability of the savings to the individual businesses in the sample.

In each group, the businesses were categorized as those purchasing a new heated paint spray booth or retrofitting a paint spray booth to provide heat and those choosing other means to comply with the rule. Portable IR heaters were assumed to be necessary as supplemental or primary heaters in all cases. In many cases, the equipment cost estimates are conservatively high. Thus it is possible that total compliance costs to a particular business and the industry as a whole could be significantly lower.

The responses were also analyzed to determine how businesses would deal with cost of compliance financially. The responses were examined to see how many businesses felt they would be forced to absorb the compliance cost, pass the compliance cost on to the customer, or cease operations. Businesses ceasing operations were not considered to incur any direct compliance cost.

### **DIRECT IMPACTS ON LARGER FACILITIES**

Larger facilities in this analysis are defined as businesses with 11 or more employees. Data from 1992 County Business Patterns reports that in San Diego County, there are no automotive collision repair and painting businesses with more than 49 employees. This was confirmed through discussions with industry representatives. The largest business that was identified had 35 employees followed by the next largest with 25 employees. The rest of the businesses in this group fall between 12 and 20 employees.

The major cost component associated with Rule 67.20 is related to the installation of paint spray booth heating systems to combat increased drying times. Of the 10 businesses sampled, six reported that they did not have heating systems in any of their paint spray booths. Two of the remaining four businesses had heating systems in all of their paint spray booths while the other two had heat in some of their booths. No correlation was detected between having heated paint spray booths and any other equipment. Nine out of 10 businesses indicated that they currently have an enclosed gun washer. Five shops reported that all of their spray guns were HVLP. The other shops used between one and three non-HVLP guns. These guns would have to be replaced.

The two shops with heat available in all paint spray booths were also the shops that were using non-HVLP spray guns. These shops will need to replace these guns at a minimal cost to achieve full compliance. The two shops with some heated paint spray booths both use HVLP spray guns for all their painting. One shop indicated that they would purchase a paint spray booth heater and absorb the costs out of profits.

The remaining six large shops without heated paint spray booths responded with varying business reactions. Two businesses are expected to install heated paint spray booths and absorb the costs by reducing profits. One company indicated they would raise the prices for their work. This response is reasonable because the majority of their work (75%) is directly paid for by the customer. One company said they would only use portable IR heaters to combat increased drying time while another said they would accept the decrease in productivity.

The final business indicated that they would go out of business. This business remarked that they were marginally profitable to begin with and that any increased costs would put them out of business. This is substantiated by their reporting very low annual sales relative to what was expected for a business of this size. National and regional figures for employee to output ratios were estimated by industry representatives and from IMPLAN<sup>2</sup> data sources at \$100,000-\$120,000 per employee.

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<sup>2</sup> IMPLAN is a regional input/output model used in economic impact analysis. Data used in the model comes from 30-40 different state and federal government sources. Data includes Employ-

This business indicated that they have 13 employees and annual sales of only \$750,000. This is an employee to output ratio of approximately \$58,000 which implies a low labor productivity.

Table 2 summarizes the expected direct costs for large businesses estimated from the business responses. The total capital cost for all 100 large businesses is estimated at \$1,400,000 and the total annual compliance costs, including annualized capital costs, for all 100 businesses would be approximately \$660,000.

**TABLE 2. DIRECT COST IMPACTS ON LARGE FACILITIES**

Costs	Facilities purchasing supplemental portable IR heat only (5 businesses)	Facilities purchasing retrofit spray booth heat and portable IR heat (4 businesses)
<b><u>Capital costs</u></b>		
Heated spray booths (retrofit)	n/a	\$90,000
IR heaters	\$25,000	\$20,000
HVLP spray guns	\$3,900	\$1,950
Enclosed gun washers	\$650	\$0
Total sample capital cost	\$29,550	\$111,950
<b>Population capital cost*</b>	<b>\$296,000</b>	<b>\$1,120,000</b>
<b><u>Annual costs</u></b>		
Annualized capital cost	\$4,816	\$18,248
Energy	\$7,430	\$18,800
Labor and maintenance	\$11,050	\$5,600
Total sample annualized costs	\$23,300	\$42,648
<b>Population annualized costs*</b>	<b>\$233,000</b>	<b>\$426,000</b>

The costs in this table represent 9 out of 10 businesses in the sample. The remaining business indicated they would cease operations and, therefore, would not incur any costs.

\* Estimated total for all 100 large shops.

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ment, Value Added, Output, and Final demands.

## **DIRECT IMPACTS ON MEDIUM FACILITIES**

Medium facilities in this analysis are defined as businesses with between 6 and 11 employees. It was estimated that approximately 150 businesses in San Diego County fall into this size category. Thirteen of these businesses were surveyed. The major cost component for medium businesses is similar to those for larger shops. When shops use compliant materials, they may need to install paint spray booth heating systems to maintain productivity levels. Of the 13 shops, four reported that they currently had heated paint spray booths. Two of these shops were already using HVLP spray guns but did not have enclosed gun washers. The other two had enclosed gun washers but were not using HVLP spray guns. These shops will need to purchase this equipment to comply with the rule.

Nine shops indicated that they did not have any heated paint spray booths. Three of these said they would install heating systems and absorb the costs out-of-pocket, one said it would install heating systems and absorb increased costs by raising prices. Another three reported that they would not install heat in their paint spray booths but instead alter their processes to overcome the increased drying time. Only one of the nine shops without heated paint spray booths did not have an enclosed gun washer. Five of these shops reported they were using non-HVLP spray guns. There were a total of 10 noncompliant guns being used by these shops.

The remaining two shops said they would be forced out of business when faced with any additional costs. One of the businesses had a low output to employee ratio of \$44,000. This is less than half the national and local average thus implying that their operations are already marginal. The second business said they have been operating under marginal conditions and that any increased costs would put them out of business. They indicated sales of \$800,000 and eight employees. Although this output to employee ratio corresponds to national averages, this ratio cannot be used as the sole indicator of a firms profitability. There are numerous reasons not captured in this analysis why a company may go out of business.

Table 3 summarizes the expected direct costs for medium businesses estimated from the business responses. The total capital cost for all 150 medium businesses is estimated at \$1,500,000 and the total annual compliance costs, including annualized capital costs, for all 150 businesses would be approximately \$550,000.

**TABLE 3. DIRECT COST IMPACTS ON MEDIUM FACILITIES**

<b>Costs</b>	<b>Facilities purchasing supplemental portable IR heat only (7 businesses)</b>	<b>Facilities purchasing retrofit spray booth heat and portable IR heat (4 businesses)</b>
<b><u>Capital costs</u></b>		
Heated spray booths (retrofit)	n/a	\$90,000
IR heaters	\$21,000	\$12,000
HVLP spray guns	\$3,900	\$3,250
Enclosed gun washers	\$1,950	\$1,300
Total sample capital cost	\$26,850	\$106,550
<b>Population capital cost*</b>	<b>\$310,000</b>	<b>\$1,230,000</b>
<b><u>Annual costs</u></b>		
Annualized capital cost	\$4,376	\$17,367
Energy	\$4,190	\$10,000
Labor and maintenance	\$8,090	\$3,600
Total sample annualized costs	\$16,660	\$30,967
<b>Population annualized costs*</b>	<b>\$192,000</b>	<b>\$357,000</b>

The costs in this table represent 11 out of 13 businesses in the sample. The remaining business indicated they would cease operations and, therefore, would not incur any costs.

\* Estimated total for all 150 medium shops.

## **DIRECT IMPACTS ON SMALL FACILITIES**

Small businesses are characterized in this analysis by companies that have between one and five employees. Approximately 150 businesses fall into this size category. According to industry representatives, smaller shops are more likely to alter their painting processes rather than incur relatively large costs to install paint spray booth heating systems. Many do not have the capital resources to invest in equipment or are already operating under marginal conditions. Of the 13 shops in this size category surveyed, only one shop reported having a heated paint spray booth. This shop did not have an enclosed gun washer but was using HVLP spray guns.

The 12 shops without paint spray booth heating systems indicated they would respond in one of three ways. Two businesses reported they would retrofit their paint spray booths with heating systems and absorb the costs out of profits. These shops would also have to purchase HVLP spray guns and one would have to purchase an enclosed gun washer. Six shops said they would not install heating systems in their paint spray booth and instead either purchase portable IR heaters and/or alter their production processes to overcome the increased drying times. The six shops would all have to purchase IR heaters and three of the six would need to purchase enclosed gun washers.

The remaining four shops all responded that they would go out of business if required to use compliant coatings and purchase additional equipment. Follow up calls were made to verify the data collected and it was subsequently determined that only one of the four companies would actually go out of business. Two businesses stated that they might not go out of business. One of these two indicated the nature of their business would allow them to purchase an IR heater to maintain productivity. The second business owner said he was retiring for personal reasons and not going out of business because of the proposed rule requirements. It was assumed this business would purchase a portable IR heater if it remained in business. The final two businesses reporting they were going out of business could not be further contacted. One of these businesses had extremely low employee to output ratios consistent with a business in financial difficulty. It was concluded that this company would go out of business for reasons other than compliance with Rule 67.20. The other business's financial indicators were consistent with national averages. In the absence of additional information, it was assumed that this business's initial response was correct and compliance with the rule would force it to cease operations.

Table 4 summarizes the expected direct costs for small shops estimated from the business responses. The total capital cost for all 150 small shops is estimated at \$1,000,000 and the total annual compliance costs, including annualized capital costs, for all 150 businesses would be about \$295,000.



**TABLE 4. DIRECT COST IMPACTS ON SMALL FACILITIES**

<b>Costs</b>	<b>Facilities purchasing supplemental portable IR heat only (10 businesses)</b>	<b>Facilities purchasing retrofit spray booth heat and portable IR heat (2 businesses)</b>
<b><u>Capital costs</u></b>		
Heated spray booths (retrofit)	n/a	\$36,000
IR heaters	\$30,000	\$6,000
HVLP spray guns	\$7,800	\$1,300
Enclosed gun washers	\$1,950	\$650
Total sample capital cost	\$39,750	\$43,950
<b>Population capital cost*</b>	<b>\$459,000</b>	<b>\$507,000</b>
<b><u>Annual costs</u></b>		
Annualized capital cost	\$6,479	\$7,163
Energy	\$3,070	\$1,980
Labor and maintenance	\$6,650	\$680
Total sample annualized costs	\$15,700	\$9,823
<b>Population annualized costs*</b>	<b>\$181,000</b>	<b>\$113,000</b>

The costs in this table represent 12 out of 13 businesses in the sample. The remaining business indicated they would cease operations and, therefore, would not incur any costs.

\* Estimated total for all 150 small shops.

## SIGNIFICANCE OF ECONOMIC IMPACTS OF RULE 67.20

The significance of the economic impacts of Rule 67.20 was evaluated on the basis of total compliance cost to the industry, business responses to compliance costs, and competitive impacts.

### TOTAL COMPLIANCE COST

The economic criteria selected to evaluate industry wide impacts of total compliance costs were the estimated compliance costs as a percentage of net profits and capital cost as percentage of equity. The latter was based on industry wide data from Robert Morris Associates "Annual Statement Studies Composite Financial Data" and County Business Patterns.

Table 5 shows the total compliance costs for Rule 67.20 estimated from the business responses. The estimated total annualized compliance costs due to purchased equipment are the sum of the costs for large, medium and small businesses. Material cost estimates reflect material usage estimated from District permit files and the current amount of HVLP spray gun and enclosed gun washer use indicated in the business responses.

TABLE 5. TOTAL COMPLIANCE COSTS

Category	Cost (or saving)
Total capital costs	\$4,000,000
Annualized Capital and Equipment Operating Costs	\$1,500,000
Material Costs	
Coatings (savings)	(\$215,000)
Equipment cleaning materials (savings)	(\$30,000)
Surface preparation materials	\$70,000
Total net annual cost	\$1,300,000

County Business Patterns reports annual sales for this industry at \$213 million. Based on an average 3.5% pre-tax profit developed by Robert Morris Associates, annual profits for the industry are estimated to be \$7,455,000. Annual compliance costs as a percentage of net profits based on the above assumptions is approximately 17%. While this number represents a large impact to the industry, it should be noted again that this is likely a conservatively high estimate.

Another test to determine the significance of compliance costs is provided by the Environmental Protection Agency (EPA). Total compliance capital costs are compared to the equity within the industry. If total capital costs for all environmental regulations exceed 30% of equity, then the rule may need to be reconsidered. The total capital cost of this rule is estimated at \$4,000,000. Equity, as taken from Dunn and Bradstreet Industry Norms and Key Business Ratios is estimated at \$33 million dollars. This represents approximately 12% of equity. This is well below the EPA's threshold for significance. Although the industry is subject to other environmental regulations, the total capital costs are not expected to approach 30% of equity.

The significance of Rule 67.20 compliance costs to an individual business is dependent on the specific characteristics of that business. Some shops reported that they already had most of the equipment required to stay competitive. On average, these shops will realize much lower compliance costs than

shops that do not have the proper equipment. The shops that need to purchase capital equipment such as a heated paint spray booth are expected to reduce profits or increase prices by a larger percentage than other shops.

### BUSINESS RESPONSES TO COMPLIANCE COST

The impacts of Rule 67.20 were evaluated on the basis of two types of possible business responses to increased costs. The first business response is based on incurring some level of costs and reacting to those costs by either reducing profits, altering a process, or raising prices to offset increased costs. For businesses that raise prices, it is assumed that any increased costs are passed on to the consumer and that the impact is not to the shop but rather to the regional economy. Businesses that reduce profits or change processes will incur direct costs for equipment or indirect costs in areas such as increased labor. The magnitude of these costs are dependent on the individual characteristics of a given shop. In the short run, businesses are not expected to recover any loss of profits associated with absorbing increased costs. In the long run, insurance companies are expected to respond to increased costs of doing business by raising the prices they pay for jobs. If this occurs, the amount of profits reduced from individual automotive collision repair and painting shops would be equal to the difference between the actual cost increases and the amount the insurance companies raise their prices.

The impact resulting from shops raising prices is not expected to be significant because the percentage increase per job is not likely to be substantial. Based on business responses, District staff estimate that the cost increase per job will range from an average of \$5 to a maximum of \$25, or less than 1% up to 3% of a typical \$1000 repair cost. It is estimated that 20% of all business is paid for directly by the customer and this is the only work for which prices can be raised. Industry representatives anticipate only a small percentage of shops with this work will actually raise prices. For many shops, raising prices will result in a loss of business, which in turn is likely to result in a bigger loss of profits than would be lost due to absorbing increased regulatory costs.

Another type of response to requirements and costs of the rule is for a company to cease operations. When a business is operating with low profitability or in the red, further increased costs may force them out of business. In this case, the direct impact is the loss of employment and consumer spending for services at these businesses. However, it is expected that some of this employment loss and most of the consumer spending loss will be offset as other shops absorb the displaced service demand. Table 6 presents the number of firms reporting they would go out of business.

**TABLE 6. BUSINESSES REPORTING THEY WOULD CEASE OPERATIONS**

Number or percentage of shops	Small Shops	Medium Shops	Large Shops
Number of surveyed shops ceasing operations in each size category as indicated through contacts.	1	2	1
Estimated number of business ceasing operations for size category.	12	23	10
Total estimated percentage of shops ceasing operations.	8%	15%	10%

A total of four businesses out of 36 indicated that they would go out of business. This represents approximately 11% of the firms that were contacted. If the 36 businesses were used as a representative sample for the 400 automotive collision repair and painting businesses in San Diego, it would mean that approximately 45 firms would go out of business. This would constitute 11% of

all businesses in the industry. Caution should be taken in the literal interpretation of these figures due to several problems in the analysis. Because a small number of businesses were contacted (less than 10% of all shops), the probability of an error is high.

Another concern is the ability of a business to understand the requirements of the rule and specify an appropriate response. In several cases, businesses were responding to costs which might be higher than those they would actually face. A company may expect to go out of business when faced with \$50,000 in costs but may stay in business if the costs are actually \$15,000. Also, it is difficult to distinguish between emotional responses and objective responses. It is possible an owner may say one thing to express discontent and frustration with the process but take a different path when actually responding to regulatory requirements. Therefore, it is possible that the number of businesses indicating they would go out of business could be overestimated.

### **IMPACT OF COMPLIANCE COST ON COMPETITIVENESS**

Rule 67.20 will likely have minimal impacts on competitiveness within the automotive collision repair and painting industry in San Diego County. Work in this industry tends to be locally oriented. Customers enjoy the convenience of being able to have their cars repaired close to their place of residence. This is confirmed by the Regional Purchase Coefficient (RPC) obtained from the IMPLAN data. The RPC estimates the gross regional commodity demand which is satisfied by local commodities. The RPC for the automotive collision repair and painting industry in San Diego is 0.9, which implies that 90% of the demand for automotive refinishing services is satisfied locally.

Some customers who pay privately for their paint work may take their cars to other regions if prices in San Diego County go up. This shift is expected to be relatively minimal for several reasons. The additional increase in the price per job due to the requirements of the rule is expected to be small. Customers are not likely to drive long distances to have their cars painted if local costs go up a small percentage. Mexico offers a nearby and potentially cheap alternative automotive refinishing option. However, the insurance industry does not recognize or approve work in Mexico. Since the majority of business (80%) is insurance related, it is unlikely that major shifts in automobile services to Mexico will occur. Industry representatives are of the opinion that customers willing to drive to Mexico to have their car painted are already doing so. It is also unlikely customers will drive to the Los Angeles area because a South Coast Air Quality Management District rule regulating automotive refinishing operations is already in place in the Los Angeles area and is more stringent than proposed new Rule 67.20.

### **COST-EFFECTIVENESS**

Rule 67.20 is expected to reduce annual VOC emissions from automotive refinishing operations by approximately 500 tons<sup>3</sup>. Based on the total net annual compliance cost estimated for Rule 67.20 (Table 5), the overall cost-effectiveness for the rule is estimated at about \$1.30 per pound of VOC emissions reduced. Recently adopted District rules reflecting federal Reasonably Available Control Technology (RACT) for major VOC sources (major sources have over 50 tons per year of VOC emissions) have cost effectiveness' of approximately \$2.50 per pound of VOC emissions reduced. Therefore, Rule 67.20 appears to be cost-effective. However the cost-effectiveness of the rule for an individual business will vary depending on the size of the affected business, equipment upgrades necessary to use compliant coatings, and material savings from using HVLV spray guns and enclosed gun washers. Table 7 shows the cost-effectiveness of the rule for various rule provisions and equipment upgrade options.

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<sup>3</sup>Based on a 1991 emission inventory developed from District permit files.

**TABLE 7. COST-EFFECTIVENESS**

Rule requirements and equipment chosen	Cost (savings) effectiveness, \$/lb		
	Large shop	Medium shop	Small shop
<u>Coating VOC limits</u>			
Facilities currently with HVLP	0.31–2.32	0.31–4.54	0.31–7.87
Facilities currently without HVLP	(0.93)–0.79	(0.86)–2.74	(0.70)–5.74
<u>Equipment cleanup</u>			
Enclosed gun washer	(2.14)	(1.97)	(1.54)
<u>Surface preparation</u>			
Low VOC surface preparation material	1.19	1.19	1.19

The cost-effectiveness of the rule varies widely depending on the type of heating equipment upgrade chosen for productive use of compliant coatings. Heated paint spray booths are not cost-effective in most cases for small and medium shops. However, shops may have sound business reasons for choosing heated paint spray booths in order to use compliant coatings, for example to obtain improved refinish quality.

## **RULE BENEFITS**

The District estimates that Rule 67.20 will significantly reduce VOCs emitted to the atmosphere. Rule 67.20 is expected to reduce VOC emissions from automotive refinishing operations by approximately 64%, or 500 tons per year.

In addition, many shops will be required to purchase HVLP spray guns and install enclosed gun washers. HVLP spray guns apply coatings more efficiently than conventional spray guns. Shops converting to HVLP spray guns will use less coatings in their process and save money. Similarly, shops installing enclosed gun washers will use less cleaning materials and also save money. Annual industry-wide cost savings could approach \$215,000 for HVLP spray gun use and \$30,000 for enclosed gun washer use. In addition, because less materials are used, less material resources are required and pollution is reduced during manufacture of coatings and cleaning materials. The amount of hazardous wastes generated may also be reduced.

A more complete cost/benefit analysis would include a quantitative evaluation of the direct health benefits to individuals in contact with pollutants, the health benefits realized to local residents from breathing clean air. However, this is a complex undertaking beyond the scope of this report.

## **MINIMIZATION OF ADVERSE SOCIOECONOMIC IMPACTS**

While complying with minimum state and federal statutory mandates regarding the rule, the District made a good faith effort to minimize any adverse socioeconomic impacts resulting from proposed Rule 67.20. The District participated in the process to revise the statewide BARCT determination for automotive refinishing to reflect technological and economic feasibility of the proposed control technology. In addition, industry representatives were consulted as to the technological and economic feasibility of the rule standards during the rule development process in two formal public workshops, additional meetings, and by other written and verbal contacts. As a result of these contacts,

the District adjusted BARCT requirements to minimize adverse socioeconomic impacts and revised proposed Rule 67.20 as follows:

- After considering emissions and economic impacts, the VOC limits for coatings were revised and now comply with the less stringent of two proposed revised state BARCT Guidance options.
- A VOC limit for cleaning and surface preparation materials at 200 g/liter was chosen to be consistent with other District rules regulating coating operations. It is higher than the state BARCT limit of 72 g/liter because the latter material is not suitable for all applications. In addition, the rule provides an option to use low volatility cleaning materials (with low vapor pressure or high boiling point) regardless of their VOC content.
- The permitted volume of specialty coatings with higher VOC limits was revised to include an option for smaller facilities to use up to three gallons of such coatings per month. BARCT Guidance limits specialty coating use to 5% of total monthly volume. This may be detrimental for very small businesses with the low overall usage of coatings.
- An exemption for automotive restoration shops was added to the rule allowing the limited use of coatings with a higher VOC content.
- To address industry fairness concerns, the proposed exemption for facilities using less than 20 gallons of coating per month was removed, making Rule 67.20 applicable to all automotive refinishing operations regardless of size.

## CONCLUSIONS

The character of the automotive collision repair and painting industry is expected to change over the next several years. With the amount of business declining and insurance industry programs such as DRP, further industry restructuring is likely to be the end result. Industry experts expressed the opinion that the numerous requirements, such as the need for sophisticated automotive repair equipment and insurance company pressures, facing the industry is forcing out marginal small and medium shops. Even without the impacts of Rule 67.20, large capital resources are needed to stay competitive. Shops will either invest to meet requirements or begin to lose market share and go out of business. Shops that do invest are expected to capture the business lost from shops that are not able to stay competitive.

Rule 67.20 related costs to businesses are directly correlated to their equipment needs. The businesses that already have most of the needed equipment will face much lower additional compliance costs than those needing to purchase heating systems. In most cases, equipment costs will be absorbed out of profits. Industry wide profits could be reduced by approximately 17% based on total compliance costs of \$1,300,000 per year. In the long run, it is possible that a portion of these costs could be recovered if the insurance industry adjusts to increased costs of doing business in the San Diego area. A small number of shops (less than 5%) are expected to raise their prices by less than 3% per job. This is not expected to constitute a significant impact.

If the business responses are accurate, the most significant rule impact is the possibility of some businesses ceasing operations. For some marginally profitable firms, the costs associated with Rule 67.20 are going to have a significant financial impact. From the business responses, it was estimated that 45 of the 400 automotive collision repair and painting firms could potentially go out of business. However, the requirements of Rule 67.20 are not solely responsible for these firms' financial difficulties. Long-term trends in the industry play a large role.

**SOCIOECONOMIC IMPACT ASSESSMENT SUPPLEMENT**

**PROPOSED RULE 67.20 -**

**MOTOR VEHICLES AND MOBILE EQUIPMENT  
REFINISHING OPERATIONS**

**OCTOBER 1996**

**Prepared by**

**Air Pollution Control District  
9150 Chesapeake Drive  
San Diego, CA 92123**

# **SOCIOECONOMIC IMPACT ASSESSMENT SUPPLEMENT**

**(OCTOBER 1996)**

This is a supplement to the Socioeconomic Impact Assessment (SIA) previously conducted on proposed new Rule 67.20 (Motor Vehicle and Mobile Equipment Refinishing Operations). This supplement analyzes the socioeconomic impacts of final revisions made to proposed Rule 67.20. These revisions are intended to mitigate adverse socioeconomic impacts identified in the original SIA. This supplement has been prepared by the San Diego County Air Pollution Control District.

The original SIA was prepared for the District by Jack Faucett Associates of Walnut Creek, California. The SIA indicated that compliance costs associated with Rule 67.20, combined with other unfavorable economic factors in the automotive refinishing industry, may result in closure of about 40 (or 11% of) automotive refinishing shops in San Diego County. As discussed in the original SIA, the District made several changes to proposed new Rule 67.20 to mitigate these possible adverse impacts. Subsequently, the District proposed additional changes to further mitigate adverse socioeconomic impacts.

One change was to increase the volatile organic compound (VOC) limit for primers and primer-surfacers to 350 grams per liter (less water and less exempt compounds). This would eliminate the need to use a high VOC content precoat. Also, this would result in little, if any, lost emission reductions and would decrease compliance costs for some businesses. The District received comments from some national automotive paint manufacturers stating that eliminating a precoat coating category would discourage automotive refinishers from using available low VOC technology. Both water- and solvent-based low VOC content primers require the use of a precoat. These manufacturers also pointed out that the development of low VOC content primers was done to meet the California Best Available Retrofit Control Technology requirements already in effect in the majority of California air districts, at considerable expense to the paint industry.

In response, the District held an additional public meeting with all stakeholders to discuss these comments and to consider options which would be acceptable to industry and have a minimal effect on projected emission reductions. A consensus was reached on VOC content limits for the proposed rule. This supplemental report addresses the socioeconomic benefits associated with these latest proposed Rule 67.20 revisions, which were not included in the original SIA.

Specifically, proposed limits for primers in Rule 67.20 have now been changed as follows:

- The primer/primer surfacer VOC limit for Group I and II vehicles was increased from 250 grams per liter (2.1 pounds per gallon), less water and exempt compounds, to 420 grams per liter (3.5 pounds per gallon), less water and exempt compounds.
- The primer sealer VOC limit for Group II vehicles was increased from 340 grams per liter (2.8 pounds per gallon), less water and exempt compounds, to 420 grams per liter (3.5 pounds per gallon), less water and exempt compounds.
- A limited precoat use will be allowed but only in combination with low VOC primers and primer surfacers having a VOC content of 250 grams per liter or less. Precoat usage is limited to less than 25% of each source's total usage of such low VOC primers and primer surfacers.



These changes were based on the following:

- For the most part, automotive refinish coating suppliers planned to meet the rule's previously proposed lower primer and primer sealer VOC limits with water-borne coatings. When applied over bare metal, these coatings require the use of a precoat with a high VOC content.
- The VOC limits for primers and primer sealers now being proposed will allow the use of readily available solvent-borne coatings which do not require application of the high-VOC precoat. This eliminates the VOC emissions associated with the precoat and saves an extra step (and associated cost) in the automotive refinishing process. Based on previously expected precoat usage, the District estimates that the use of solvent-borne primers and primer sealers, as would be allowed under the most recent proposal, combined with the elimination of the precoat category, will not affect the amount of emission reductions projected for the rule. The difference in emission reductions is less than 1%, as shown in Table 1.
- In addition, water-borne primers and primer sealers may require the use of additional heating systems to achieve acceptable drying times in all ambient conditions. Since heating systems are not currently in widespread use in San Diego County, the use of readily available organic solvent-borne primers and primer sealers would reduce capital investment and operating costs.

The District expects that, by using solvent-borne primers meeting the newly proposed VOC limits, facilities already having heated spray booths will not need to purchase portable infrared heaters to speed the drying of primers and will save the associated energy and labor costs. Automotive refinishing shops without heating systems will still need to purchase infrared heaters or a heated paint spray booth to dry low VOC content topcoats required by the rule. However, these shops will also save energy and labor costs under the latest rule proposal because they will not need to use heaters to dry primed parts or equipment. Shops that have trained personnel and are equipped with heated spray booths (or other heating systems) will still have the option of using water-borne or solvent-borne primers with a VOC limit of 250 grams per liter in combination with a precoat.

Tables 2, 3 and 4 show the estimated compliance costs of proposed Rule 67.20 for automotive shops surveyed in the original SIA. Equipment and other cost estimates were assumed to be the same as for the original SIA. For simplicity and to be conservative, it was assumed that the shops which indicated they would cease operations would incur the same costs as the other businesses affected by the rule. Table 5 compares the estimated total compliance costs for the current proposed rule with the rule as previously proposed and analyzed by the original SIA.

For the current proposed rule, total compliance costs to the industry, including annualized capital costs, are estimated to be \$650,000 per year, or about 8% of industry profits. Capital costs are estimated to be \$3,250,000, or about 10% of industry equity. Actual costs to individual businesses will vary widely depending on their size and existing coating and heating equipment.

This is about a 20% reduction in capital cost and about a 50% reduction in annualized compliance cost, compared to previously proposed Rule 67.20. Because the District estimates that the projected emission reductions are decreased by less than 1% by the currently proposed rule revisions, the rule cost effectiveness is improved from about \$1.30 per pound of VOC reduced to about \$0.65 per pound of VOC reduced.

The impact of the proposed revisions on the number of shops ceasing operations cannot be easily estimated since it depends on financial and other factors specific to those businesses. However, as a rough estimate, assuming the number of shops ceasing operations is proportional to the industry's annual compliance costs, the number of facilities estimated to cease operations would be reduced by about 50% (of the 40 estimated in the original SIA) to a total of about 20 shops.

**TABLE 1. ESTIMATED EMISSION REDUCTIONS FOR ORIGINAL AND CURRENT PROPOSED RULE 67.20**

Category	Estimated current emissions, lb/yr	Estimated emission reductions <sup>a</sup> (increases) —original rule <sup>b</sup> , lb/yr	Estimated emission reductions <sup>a</sup> —current proposed rule <sup>c</sup> , lb/yr
Precoats	4,300 <sup>d</sup>	(5200)	2,700 <sup>e</sup>
Primer/primer surfacers	98,500	90,600	77,900
Primer sealers	48,800	37,000	36,600
Pretreatment wash primers	11,100	900	900
Topcoats	1,130,900	762,800	762,800
Specialty coatings	29,500	2,400	2,400
Cleanup and surface preparation solvents	226,500	117,500	117,500
<b>Totals</b>	<b>1,550,000</b>	<b>1,006,000</b>	<b>1,001,000</b>

(a) All emission reductions assume approximately 10% better transfer efficiency for high volume low pressure (HVLV) spray guns compared to conventional spray guns.

(b) The original rule refers to proposed Rule 67.20 as evaluated by the original SIA.

(c) Current proposed Rule 67.20 with revised primer VOC limits.

(d) Current precoat usage consists of primers that can meet the rule's precoat VOC limit of 600 grams per liter.

(e) This assumes all current primers that meet the rule's precoat VOC limit are replaced with primers meeting the revised primer VOC limit of 420 grams per liter. If precoat are used with primers that meet a 250 gram per liter VOC limit, as allowed by the revised rule, the combination of a precoat and lower VOC primer would slightly improve overall emission reductions by about 0.5%.

**TABLE 2. DIRECT COST IMPACTS ON LARGE FACILITIES—CURRENT PROPOSED  
RULE 67.20**

<b>Costs</b>	<b>Facilities purchasing supplemental portable IR heat only (5 businesses)</b>	<b>Facilities purchasing retrofit spray booth heat and portable IR heat (4 businesses)</b>
<b><u>Capital costs</u> (sample)<sup>a</sup></b>		
Heated spray booths (retrofit)	n/a	\$90,000
IR heaters	\$15,000	\$0
HVLP spray guns	\$3,900	\$1,950
Enclosed gun washers	\$650	\$0
Total sample capital cost	\$19,550	\$91,950
<b>Population capital cost<sup>b</sup></b>	<b>\$196,000</b>	<b>\$920,000</b>
<b><u>Annual costs</u> (sample)<sup>a</sup></b>		
Annualized capital cost	\$3,187	\$14,988
Energy	\$3,588	\$15,400
Labor and maintenance	\$3,936	\$2,500
Total sample annualized costs	\$10,711	\$32,888
<b>Population annualized costs<sup>b</sup></b>	<b>\$107,000</b>	<b>\$329,000</b>

(a) Capital and annual costs for 9 facilities surveyed in SIA.

(b) Estimated total for all 100 large shops.

**TABLE 3. DIRECT COST IMPACTS ON MEDIUM FACILITIES—CURRENT  
PROPOSED RULE 67.20**

<b>Costs</b>	<b>Facilities purchasing supplemental portable IR heat only (7 businesses)</b>	<b>Facilities purchasing retrofit spray booth heat and portable IR heat (4 businesses)</b>
<b><u>Capital costs</u> (sample)<sup>a</sup></b>		
Heated spray booths (retrofit)	n/a	\$90,000
IR heaters	\$9,000	\$0
HVLP spray guns	\$3,900	\$3,250
Enclosed gun washers	\$1,950	\$1,300
Total sample capital cost	\$14,850	\$94,550
<b>Population capital cost<sup>b</sup></b>	<b>\$171,000</b>	<b>\$1,091,000</b>
<b><u>Annual costs</u> (sample)<sup>a</sup></b>		
Annualized capital cost	\$2,421	\$15,412
Energy	\$2,199	\$8,872
Labor and maintenance	\$2,541	\$1,440
Total sample annualized costs	\$7,161	\$25,724
<b>Population annualized costs<sup>b</sup></b>	<b>\$83,000</b>	<b>\$297,000</b>

(a) Capital and annual costs for 11 facilities surveyed in SIA.

(b) Estimated total for all 150 medium shops.

**TABLE 4. DIRECT COST IMPACTS ON SMALL FACILITIES—CURRENT PROPOSED  
RULE 67.20**

Costs	Facilities purchasing supplemental portable IR heat only (10 businesses)	Facilities purchasing retrofit spray booth heat and portable IR heat (2 businesses)
<b><u>Capital costs</u> (sample)<sup>a</sup></b>		
Heated spray booths (retrofit)	n/a	\$36,000
IR heaters	\$27,600	\$0
HVLP spray guns	\$7,800	\$1,300
Enclosed gun washers	\$1950	\$650
Total sample capital cost	\$36,750	\$37,950
<b>Population capital cost<sup>b</sup></b>	<b>\$424,000</b>	<b>\$438,000</b>
<b><u>Annual costs</u> (sample)<sup>a</sup></b>		
Annualized capital cost	\$5,990	\$6,186
Energy	\$2,565	\$1,724
Labor and maintenance	\$2,961	\$280
Total sample annualized costs	\$11,516	\$8,190
<b>Population annualized costs<sup>b</sup></b>	<b>\$133,000</b>	<b>\$95,000</b>

(a) Capital and annual costs for 12 facilities surveyed in SIA.

(b) Estimated total for all 150 small shops.

**TABLE 5. TOTAL COMPLIANCE COSTS—CURRENT PROPOSED RULE 67.20 AND PREVIOUSLY PROPOSED RULE 67.20**

Cost category	Current proposed Rule 67.20 cost (or saving)	Previous Rule 67.20 cost (or saving)
<b>Total capital costs</b>	<b>\$3,250,000</b>	<b>\$4,000,000</b>
Annualized capital and equipment operating costs	\$1,000,000	\$1,500,000
Material costs		
Coatings (savings)	(\$355,000)	(\$215,000)
Equipment cleaning materials (savings)	(\$30,000)	(\$30,000)
Surface preparation materials	\$70,000	\$70,000
<b>Total net annual cost</b>	<b>\$700,000</b>	<b>\$1,300,000</b>

# **RULE 67.20**

## **SAMPLE RECORDKEEPING FORMS**

These are sample forms showing the type of information required by Rule 67.20.

Painter's Initials \_\_\_\_\_



	P=Paint	C=Catalyst	R=Reducer	(Use Actual Volumes)	Quantity
*	If Air Dried write A/D				
**					
***	A=Air Spray	AI=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

## RULE 67 SERIES CURRENT IN-HOUSE LIST OF COATING AND SOLVENT MATERIALS

Facility Name: \_\_\_\_\_ Rule \_\_\_\_\_ Date: \_\_\_\_\_

[illegible]

\* Purpose Options are: Coating (Coat), Cleanup (C), Surface Preparation (P), Stripper (S), Other ( )

**\*\* Coating Category for VOC Content Limit in Specific Rule**

\*\*\* Coating Category for VOC Content Limit in Specific Rule  
(i.e. Air Dried, Baked, Primer, Topcoat, Extreme High Gloss, Stain, Clear Topcoat, Pleasure Craft Topcoat, etc.)

Facility Name: \_\_\_\_\_ Substrate\* \_\_\_\_\_ Painter: \_\_\_\_\_

\* Substrate Coated Options are: Metal Parts (MP), Film and Fabric (F), Wood Products (W), Marine (M), Automotive (A)  
Other \_\_\_\_\_ ( )