Transportation & Air Emissions Compliance

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Transportation And Air Compliance Study

EXECUTIVE SUMMARY

This report addresses compliance issues central to the overall operations of each Colors on Parade (COP) franchise, namely transportation and air emissions issues. COP's franchise operations were studied and related information was reviewed in order to perform compliance analyses for these areas. A brief synopsis of the analyses are presented here. Details including information sources, assumptions, applicable regulations, etc., are contained within the body of the report.

Transportation

After reviewing the COP franchise operations, mobile unit contents, SDS's, COP franchisee surveys and applicable regulations, the following were identified as key areas of interest for compliance: registration, shipping papers, placarding, packaging and labeling.

Registration: COP franchisees are not required to register as hazardous material carriers.

Shipping Papers: COP franchisees are required to carry shipping papers. An example is shown as Figure A-2 in Appendix A.

Placarding: COP franchisees are not required to placard the operating units as hazardous material carriers.

Packaging: Durable packaging secured in the operating units is required for all substances listed in Table A-1, Appendix A.

Labeling: COP franchisees are required to label all substances carried on the operating unit that are listed in Table A-1, Appendix A. The shipping name listed in column 4 of Table A-1 must appear on the packages; subsidiary hazard labels are also required for materials listed as Class 3 or Division 5.2 substances in Table A-1. Required subsidiary hazard labels are shown in Figure A-3 and A-4 in Appendix A.

Air Emissions

After reviewing COP franchise operations, MSDS's, COP franchisee surveys and applicable regulations, volatile organic compounds (VOC) and Hazardous Substance emissions were identified as the two key areas of compliance to be addressed. VOC emission rates are presented in Tables B-5, B-6, B-7, B-8 and B-9 in Appendix B. These VOC emission levels are well under levels established by applicable regulations. Hazardous substance emission rates are presented in Tables B-10, B-11, B-12, B-13 and B-14 in Appendix B. These hazardous substance emission levels are well under levels established by applicable regulations.

TRANSPORTATION COMPLIANCE

In order to determine compliance with Federal Department of Transportation (DOT) regulations, Title 49 of the Code of Federal Regulations (CFR) must be consulted. There are several specific compliance issues which must be addressed: registration, shipping papers, placarding, packaging and labeling. These issues will be addressed separately and then general transportation issues will be presented.

REGISTRATION

Registration issues are addressed under 49 CFR, Part 107, Subpart G (Registration of Persons who Offer or Transport Hazardous Materials). Specifically, registration applicability is discussed under 49 CFR §107.601: "The registration and fee requirements of this subpart apply to any person who offers for transportation, or transports, in foreign, interstate or intrastate commerce -...(e). A shipment of 2,268 Kg (5,000 pounds) gross weight or more of one class of hazardous materials ... "

Since Colors on Parade (COP) franchisee operating units contain less than the 5,000 lb threshold of any class of hazardous materials (see Table A-1 in Appendix A), it is not necessary to register COP franchises as hazardous material carriers under Federal DOT regulations.

SHIPPING PAPERS

Even though COP franchisee vans are not required to be registered as hazardous material carriers under Federal DOT regulations, franchisee vans will be required to carry proper shipping papers in the vans at all times (according to 49 CFR §172.200 (Subpart C - Shipping Papers)). Information to be included on the shipping papers includes a listing of the van's contents, descriptions of hazardous materials listed, name of shipper, emergency response telephone number, etc. (according to 49 CFR §172.201, §172.202). These shipping papers may be placed inside the MSDS manual contained on each operating unit. A proposed shipping paper for COP franchisee operating units is presented as Figure A-2 in Appendix A.

PLACARDING

The next issue to be addressed is placarding. Placarding requirements are discussed under 49 CFR, Part 172, Subpart F - Placarding. Specifically, under 49 CFR §172.504(c) - Exceptions for less than 454 Kg (1,001 pounds): "... when hazardous materials... are transported by highway or rail, placards are not required on (1) A transport vehicle or freight container which contains less than 454 Kg (1,001 pounds) aggregate gross weight of hazardous materials..." Therefore, because the threshold of 1,001 pounds is not met or exceeded (see Table A-1 in Appendix A), it is not necessary for COP franchisee operating units to display hazardous material placards on the operating units' exteriors according to Federal DOT regulations.

PACKAGING

The fourth transportation issue to be addressed is packaging. Packaging requirements are discussed under 49 CFR §173. All hazardous materials on the COP franchisee vans contain materials in Packing Groups II & III (see Table A-1 in Appendix A). Under 49 CFR §173.202(c) and 49 CFR §173.203(c), for Packaging Groups II and III, respectively, the following single packagings are authorized: steel drums; metal drums other than steel or aluminum; plastic; glass; porcelain or stoneware receptacles in steel, aluminum, wooden or fiberboard boxes. All packages should be secured and breakable packages should be cushioned to ensure that packages remain intact.

Exceptions do exist for limited quantities of Class 3 hazardous materials; however, COP franchisee operating units do not fall into this classification, as quantities of Class 3 materials on the operating units are greater than the threshold limited quantity of 30 Kg (66 pounds) (49 CFR § 173.150 Exceptions for Class 3 (flammable and combustible liquids)), (see Table A-1 in Appendix A).

LABELING

COP franchisee operating units' contents do not meet limited quantity or consumer quantity regulatory levels that would eliminate labeling requirements. Therefore, all Class 3 and Division 5.2 materials must be labeled accordingly to meet Federal DOT regulatory labeling requirements.

Materials categorized as Hazard Class 3, Hazard Division 5.2 or Combustible Liquids are hazardous materials (as denoted in Table A-1 in Appendix A) and must meet the labeling requirements set forth in 49 CFR §172 Subpart E-Labeling**.** All containers storing these materials must be labeled with the proper shipping name (as specified in Table A-1 in Appendix A). Subsidiary hazard labels are also required on all Hazard Class 3 and Hazard Division 5.2.

Subsidiary Hazard Labels must meet several specifications as delineated under 49 CFR §172.406 and §172.407. Under 49 CFR §172.406(a) "(1)... each (subsidiary hazard) label ... must (i) be printed on or affixed to a surface (other than the bottom) of the package or containment device containing the hazardous material; and (ii) be located on the same surface of the package and near the proper shipping name marking, if the package dimensions are adequate."

The subsidiary hazard labels for Class 3 and Division 5.2 materials are shown in Figures A-3 and A-4 in Appendix A, respectively (49 CFR §172.419(A) and §172.427(a), respectively). The following specifications also apply to these subsidiary hazard labels:

- The size of each label, denoted by the diamond shape, must be at least 100 mm (3.9 inches) on each side with each side having a solid line inner border 5.0 to 6.3mm (0.2 to 0.25 inches) from the edge (49 CFR §172.407 (c)(1))
- The hazard class or division number must be at least 6.3mm (0.25 inches) but not greater than 12.7mm (0.5 inches). (49 CFR (d)72.407 (c)(3)).
- The label name must be shown in letters at least 7.6mm (0.3 inches) in height (49 CFR §172.407 (c)(4)).
- For the "Flammable Liquid" label, the background color must be red (49 CFR §172.419 (b)) and the symbol, text, number(s) and border may be shown in either black or white (49 CFR §172.407 (d)(2) and §172.407 (d)(2)(i)).
- For the "Organic Peroxide" label, the background color must be yellow (49 CFR §172.427 (B)) and the symbol, text, number(s) and border must be black (49 CFR §172.407 (d)(2)).

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GENERAL

Several general transportation issues must also be addressed due to the fact that the majority of the hazardous materials contained within the COP franchisee operating units are Class 3- flammable/combustible liquids; these regulations are presented in 49 CFR Part 177 - (Carriage by Public Highway). All operating unit packages must be secured on the operating units; during loading and unloading, the engine must be stopped, the hand brake must be set and smoking is prohibited in the vicinity. Also, the operating unit and its contents must be kept away from open flames (49 CFR § 177.834 and § 177.837).

In the event of a traffic accident, observers and onlookers must be kept from congregating in the vicinity of the accident. In addition, open flames must be kept away from the accident site; likewise, smoking is prohibited. Any leakage from the operating unit should be contained by whatever means available and care should be taken to keep any leakage from becoming ignited (49 CFR §177.856). Also, in the event of an accident, remove the binder with the shipping papers and MSDS's from the operating unit if possible without risking injury.

TRANSPORTATION COMPLIANCE SUMMARY

According to federal regulations, it is not necessary for COP franchisees to register or placard their operating units as hazardous materials carriers. However, shipping papers must be carried. Also, packaging and labeling specifications must be followed to ensure compliance. It should also be noted that compliance is an ongoing issue; therefore, regulatory developments and process changes must be monitored to ensure compliance.

AIR EMISSIONS COMPLIANCE

Analyses have been performed utilizing calculated theoretical emissions to ensure that COP complies with all applicable federal regulations regarding air emissions. Analyses were performed for two distinct emissions areas: Volatile Organic Compounds (VOC's) and Hazardous Substances. The analyses for VOC emissions will be presented first, followed by the analyses for Hazardous Substance emissions.

In order to demonstrate compliance with applicable federal regulations regarding VOC and Hazardous Substance emissions, emission levels, both averaged and theoretical maximum (worst case scenario (WCS)) were determined. Emission levels were calculated by determining average and WCS production rates and compiling that information with emission rates for each process.

Average production rates were determined through a survey completed by COP franchisees. The survey listed throughput levels for each process and material application rates corresponding to each process. Average production and application rates were determined for three separate job sizes: large repair, medium repair and small repair areas. These results are shown in Tables B-1, B-2, B-3 and B-3A in Appendix B.

A WCS production rate was determined by calculating the maximum possible number of jobs a franchisee could perform in a week. WCS application amounts were determined by COP for a maximum large area repair and were coupled with the WCS production rates to yield WCS application rates. These results are shown in Table B-4 in Appendix B.

To show compliance via theoretical calculations, the following assumptions were made to guarantee that the maximum possible emission levels for VOC's and Hazardous Substances were achieved:

(1) Where alternate substances could be used in the application processes, the substance with the highest VOC and hazardous substance contents were used,

(2) Where ranges were given in the MSDS for a given substance, maximum VOC concentrations and maximum hazardous substance percentages were used,

(3) Once the applications were performed, it was assumed that 100% of the VOC's and Hazardous Substances were emitted immediately into the environment (through either volatilization or overspray).

VOC EMISSIONS

As noted in assumption (3) above, the entire VOC amount applied was assumed to be the VOC amount released into the environment. Therefore, in both the average scenario and the WCS, the amount of VOC's emitted for each substance applied was calculated by using the following formula:

VOC = (AxC)/D, where:

VOC= Amount of VOC's emitted per substance applied (oz.)

A= Amount of substance applied (oz.), from Table: B-3A

C= Concentration of VOC's in substance (lbs./gal), from MSDS

D= Substance density (lbs./gal), from SDS

VOC emission rates for each substance applied were calculated for both the average scenario and the WCS. These rates were then extrapolated to determine weekly, monthly and annual emission levels. These results are presented in Tables B-5, B-6, B-7 and B-8 in Appendix B.

Compliance can be determined by comparing calculated emission levels to federal regulatory emission levels. Under 40 CFR§51.322 (Sources subject to emissions reporting), "(a) Point sources subject to the annual emissions reporting requirements... are defined as follows... (1) For... VOC, any facility that actually emits a total of 90.7 metric tons (100 tons) per year... (b) Annual emissions reporting requirements apply only to emissions of each pollutant from any individual emission point within the facility that emits: (i) For ... VOC, 22.7 metric tons (25 tons) per year or more." VOC emissions from COP franchisee operations fall well below these emission rates for facilities and emission points within a facility.

Under Title I of the 1990 Clear Air Act Amendments (CAAA), the EPA was to establish non-attainment areas in each state in reference to the National Ambient Air Quality Standards previously set by the EPA. Each state was then required to establish regulations to bring non-attainment areas into compliance. Therefore, each COP franchisee will need to examine applicable state regulations to guarantee compliance. For example, under Georgia's "Rules for Air Quality Control", established by the Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, Chapter 391-3-1.02(2)(a)6. (VOC Emission Standards, Exemptions, Area Designations, Compliance Schedules and Compliance Determinations): sources located outside of Atlanta's 13 county metropolitan area whose potential emissions of VOC are not more than 100 tons per year are exempted from reporting regulations. However, sources located within the metropolitan Atlanta area are required to report if actual VOC emissions are greater than 15 pounds per day. COP franchisee's VOC emission levels fall well below these regulatory limits. However, each states regulatory limits, definitions and permitting requirements may differ and these issues must be addressed for each franchisee's particular location within each state.

HAZARDOUS SUBSTANCE EMISSIONS

It was also assumed that all hazardous substances applied in all processes were released into the environment. Therefore, in both the average application scenario and the WCS, the amount of hazardous substances emitted for each substance applied was calculated by using the following formula:

HAZ = AxP, where:

HAZ= Amount of a given hazardous substance emitted (oz.),

A= Amount of substance applied (oz.)

P = Percentage of a given hazardous substance contained within the substance applied (%)

The percentages of hazardous substances contained in each substance applied are shown in Table B-9 in Appendix B.

Hazardous substance emission rates for each hazardous substance and each substance applied were calculated for both the actual scenario and the WCS. These figures were extrapolated to calculate daily, weekly, monthly and annual emission levels for hazardous substances. These results are presented in Tables B-10, B-11, B-12, B-13 and B-14 in Appendix B.

According to the Title III of the 1990 Clean Air Act Amendments which regulates Hazardous Air Pollutants (HAPs), the regulatory reporting limit for any singular HAP is 10 tons per year and for all HAP's emitted from a singular source is 25 tons per year. Therefore, emissions for COP franchisees fall well below federal regulatory levels. Again, under Title III of the 1990 Clean Air Act Amendments, each state may develop regulations which are more stringent than the federal regulations. For example, under South Carolina's Department of Health and Environmental Control, Regulation 62.5, Standard 8 (Toxic Air Pollutants), operating permits are not required for any single toxic air pollutant where the potential to emit is less than 1000 lbs./month. Once again, each state's specific regulations will need to be studied in order to guarantee compliance.

Under the Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III (also known as the Right-to-Know Law), a threshold reporting quantity of 10,000 pounds for any hazardous or toxic chemical has been established. These threshold quantities apply to any hazardous chemical stored at a facility at any one time (under Section 312) and to any toxic chemical released from the facility (under Section 313). However, under Sections 312 and 313, the term "facility" is defined as a stationary item on a single site or on contiguous or adjacent sites. Therefore, emissions from COP franchisees' operations would not fall under SARA Title III regulations.

Lastly, HAP emission levels must conform to the Maximum Allowance Ambient Concentration (MAAC) and De Minimis Emission Level (DMEL) standards established in 29CFR, Subpart Z, § 19100.1000 (OSHA Standards for Air Contaminants). Again, since state regulations must be as or more stringent as federal regulations, the "Air Toxic Modeling Procedures" developed by the South Carolina Department of Health and Environmental Control, Bureau of Air Quality in April of 1993, were used to show compliance. A simple method assuming a WCS uses the maximum hourly emission rate for each pollutant (lb/hr) and then extrapolates this to a daily rate. This figure is then compared to the DMEL allowed for that pollutant set in Standard Number 8. If the daily WCS emission rate is less than the DMEL, then compliance has been demonstrated. The results of these comparisons are shown in Table B-15 in Appendix B. Therefore, all HAP emissions are in compliance with the OSHA Standards for Air Contaminants.

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Air Compliance Summary

As shown in the previous sections, emissions from activities associated with the COP processes fall well below regulatory levels for VOC and HAP with respect to CAAA- Titles,I and III, SARA- Title III, Sections 312 and 313, OSHA's Standards for Air Contaminants and various other federal and state regulations. As noted previously, regulations for each state where COP franchisees operate should be studied to guarantee compliance, however, due to such small emission levels, compliance should not be a problem. It should also be noted that compliance is an ongoing issue since regulations change with time; therefore, regulatory developments and process changes must be monitored to ensure compliance.

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APPENDIX A

TRANSPORTATION COMPLIANCE

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Table A- I
Colors on Parade Franchisee Operating Units
Hazardous Materials Listing

Description	Qty	Size	Shipping Name (1)	Hazardous Class	I.D. Number	Pack Group	Density Lbs./Gal (2)	LBS.
Diamont Tints	67	1/2 Qt	Paint	3	UN1263	II	9.59	80.32
Diamont-BR-40	1	Gallon	PRM	3	UN1263	II	6.92	6.92
Diamont-BR50	1	Gallon	PRM	3	UN1263	II	7.30	7.30
Diarnont-BR60	1	Gallon	PRM	3	UN1263	II	7.48	7.48
Diamont-DC89	1	Gallon	Paint	3	UN1263	II	7.86	7.86
Diamont-DH44	1	Quart	PRM	3	UN1263	II	8.36	2.09
809 - Fisheye Eliminator	1	Pint	Resin Solution	3	UN1866	II	7.29	0.91
839-11 Glassit Plastic	1	Quart	Paint	3	UN1263	II	14.86	3.72
Alpha CrylColors-866	1	Quart	Paint	3	UN1263	II	9.24	2.31
900 PreKleano	1	Gallon	PRM	3	UN1263	II	6.28	6.28
929-70 Polar Hardener	1	.5 Liter	Resin Solution	3	UN1866	II	7 .97	1.05
948-36 Hardener Paste	1	0.96 oz.	Organic Peroxide Type E Solid	5.2	UN3108	II	9.66	0.06
Limco tints	58	6oz.	Paint	3	UN1263	II	11.60	21.75

1) PRM= Paint Related Material
2) Maximum Densities were used where the MSDS gave a density range

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Table A- I

Colors on Parade Franchisee Operating units
Hazardous Materials Listing

Description	Qty	Size	Shipping Name (1)	Hazardous Class	I.D. Number	Pack Group	Density Lbs./Gal (2)	LBS.
Limco - 99 Thinner	1	Gallon	PRM	3	UN1263	II	6.60	6.60
Limco - 200 Reducer	1	Quart	PRM	3	UN 1263	II	6.43	1.61
Limco - 1302 Promoter	1	Quart	Resin Solution	3	UN1866	II	7.82	1.96
Limco - LH75 Hardener	1	Pint	Resin Solution	3	UN1866	III	8.34	1.04
Limco - LH1301 Hardener	1	Quart	PRM	3	UN1263	III	8.28	2.07
Limco - LR1270 Reducer	1	Quart	PRM	3	UN1263	II	6.23	1.56
3M - Putty Hardener – 5969	1	0.85oz.	Organic Peroxide Type E Solid	5.2	UN3108	II	10.41	0.05
3M - Lightweight Putty -5970	1	Quart	Polyester Resin Kit	5.2	NA2255	II	11.50	2.88
Synthetic Cutting Creme	1	Gallon	Combustible Liquid	Combustible Liquid	NA1993	III	8.00	8.00
Sikkens SRA Reducer	1	Gallon	PRM	3	UN1263	II	6.50	6.50
Super Seal - A002	1	Gallon	Flammable Liquids, N.O.S.	3	UN1993	II	7.00	7.00
Pink Magic	1	Gallon	PRM	3	UN1263	II	6.60	6.60
Hazard Class 3 Total:								182.92
Hazard Division 6.2 Total:							2.99	
Combustible Liquid Total:							8.00	

1) PRM= Paint Related Material
2) Maximum Densities - were used where the MSDS gave a density range

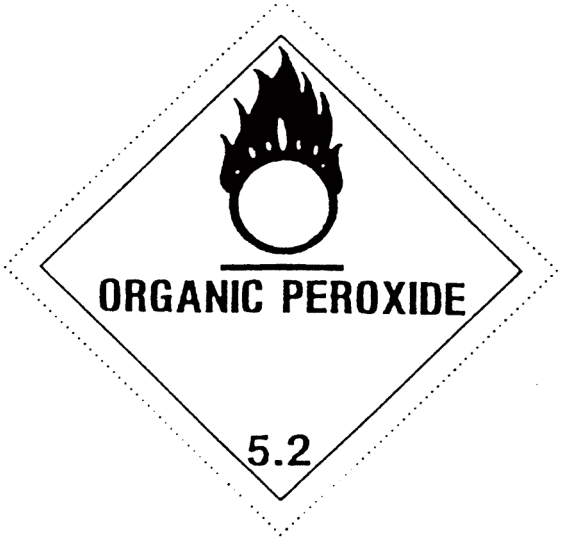
Figure A-2
Proposed Shipping Paper

COLORS ON PARADE
FRANCHISEE: _____ Pg. 1 of 1
Emergency Response Telephone Number: _____

Shipping Name	Hazard Class or Division	Identification Number	Packing Group	Amount in LBS.
Paint	3	UN1263	II	115.95
Paint Related Material	3	UN1263	II	52.94
Paint Related Material	3	UN1263	III	2.07
Resin Solution	3	UN1866	II	3.92
Resin Solution	3	UN1866	III	1.04
Flammable Liquids, N.O.S.	3	UN1993	II	7.00
Combustible Liquids, N.O.S.	Combustible Liquid	NA1993	III	8.00
Organic Peroxide, Type E – Solid	5.2	UN3108	II	0.11
Polyester Resin Kit	5.2	NA2255	II	2.88
Hazard Class 3 Total:				182.92
Hazard Division 5.2 Total:				2.99
Combustible Liquid Total:				8.00

Figure A—3

Figure A—4



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APPENDIX B

AIR EMISSIONS COMPLIANCE

TABLE B-1
SURVEY RESULTS
ACTUAL AMOUNTS APPLIED
LARGE REPAIR (ENTIRE PANEL)

NAME	NUMBER OF JOBS PER WEEK	PAINT APPLIED PER JOB (Oz.)	CLEAR APPLIED PER JOB (Oz.)
Campbell	10	1.60	1.60
Smoker	2	2.50	2.50
Reynolds	9	1.00	1.00
Szukala	8	4.50	3.00
Dvorak	3	4.00	8.00
Jordan	2	3.00	2.00
Johnson	20	1.10	1.40
Rodriguez	4	4.00	4.00
Finlen	3	4.00	6.00
Fontenot	15	4.00	8.00
Gibson	1	4.00	3.00
Lamar	2	1.00	1.00
Quinn	5	3.00	3.00
Bourdon	6	3.00	4.00
Pelly	2	3.00	2.00
Gobert	5	3.00	2.00
Finnegan	8	5.00	4.00
Wilson	5	1.00	3.00
Leeder	7	2.50	1.25
Malek	20	1.00	1.50
Lind	5	0.80	0.80
Overly	10	1.50	2.00
Wilhovsky	5	4.00	4.00
Klimchuk	20	3.50	3.50
Craighead	3	1.50	1.50
Goughnour	15	1.00	1.00
Walters	3	3.50	3.50
AVERAGE:	7	2.67	2.91
STANDARD DEVIATION:	6	1.32	1.93
AVG + 3(STD DEV):	25	6.62	8.69
MAXIMUM VALUE:	20	5.00	8.00
MINIMUM VALUE:	1	0.80	0.80

TABLE B-2
SURVEY RESULTS
ACTUAL AMOUNTS APPLIED
MEDIUM REPAIR (QUARTER PANEL)

NAME	NUMBER OF JOBS PER WEEK	PAINT APPLIED PER JOB (Oz.)	CLEAR APPLIED PER JOB (Oz.)
Campbell	15	0.50	0.50
Smoker	8	2.00	2.00
Reynolds	14	0.50	0.50
Szukala	8	2.00	1.50
Dvorak	8	2.00	4.00
Jordan	4	1.00	0.66
Johnson	4	0.50	1.50
Rodriguez	4	2.00	3.00
Finlen	4	3.00	4.00
Fontenot	10	2.00	2.00
Gibson	20	2.00	2.00
Lamar	13	0.50	0.50
Quinn	19	1.50	1.50
Malek	30	1.50	1.90
Leeder	10	1.00	0.75
Wilson	20	0.60	2.00
Gobert	16	2.00	0.50
Finnegan	12	2.00	3.00
Bourdon	15	2.00	2.00
Pelly	4	3.00	2.00
Lind	10	0.30	0.30
Overly	10	1.00	1.00
Wilhovsky	10	3.00	3.00
Craighead	4	0.50	0.50
Goughnour	20	0.50	0.50
Walters	6	0.50	1.50
AVERAGE:	11	1.44	1.64
STANDARD DEVIATION:	7	0.87	1.08
AVG + 3(STD DEV):	31	4.05	4.89
MAXIMUM VALUE:	30	3.00	4.00
MINIMUM VALUE:	4	0.30	0.30

TABLE B-3

SURVEY RESULTS

ACTUAL AMOUNTS APPLIED

SMALL REPAIR (MIRROR, WIPERS, KEYPAD)

NAME	NUMBER OF JOBS PER WEEK	PAINT APPLIED PER JOB (Oz.)	CLEAR APPLIED PER JOB (Oz.)
Campbell	5	0.50	0.00
Smoker	2	1.00	1.00
Reynolds	8	0.25	0.25
Szukala	5	2.00	1.00
Dvorak	8	1.00	2.00
Jordan	15	1.00	0.66
Johnson	4	0.50	1.00
Rodriguez	8	2.00	3.00
Finlen	5	2.00	2.00
Gobert	15	0.50	0.50
DeBrock	6	2.00	2.00
Wilson	15	0.50	1.00
Leeder	15	0.25	0.00
Malek	10	1.00	1.50
Fontenot	10	2.00	2.00
Gibson	8	1.00	1.00
Lamar	10	0.50	.0.25
Quinn	1	0.50	0.50
Bourdon	15	2.00	2.00
Pelly	4	2.00	2.00
Lind	10	0.30	0.30
Wilhovsky	10	2.00	2.00
Craighead	4	0.50	0.50
Goughnour	15	0.50	0.50
Walters	10	0.50	0.50
AVERAGE:	9	1.05	1.10
STANDARD DEVIATION:	4	0.70	0.82
AVG + 3(STD DEV):	22	3.16	3.55
MAXIMUM VALUE:	15	2.00	3.00
MINIMUM VALUE:	1	0.25	0.00

Table B-3A
APPLICATION AMOUNTS (Ounces)

Substance	Large Area WCS (1)	Large Area Average	Medium Area Average	Small Area Average
Polycracker	0.50	0.50	0.25	0.13
900 Prekleano	1.00	1.00	0.50	0.25
HP-100 Primer	3.00	3.00	1.50	0.75
Base Color (#BC610)	3.50	2.67	1.44	1.05
Clear (DC 88)	10.00	2.91	1.64	1.10
BR60-Reducer	1.00	1.00	0.50	0.25
Total Applied:	19.00	11.08	5.83	3.53

WCS= Worst Case Scenario (Information Supplied by Colors On Parade)

Table B-4
Worst Case Scenario Rates for
Production and Substance Application

For worst case scenario purposes, it was assumed that a Large Repair Area (Entire Panel) would be used. The maximum amount of each substance would be applied (as determined by COP). The maximum production rate was determined to be 1 job per hour.

Substance	Maximum Amount Applied (Oz.)
Polycracker	0.50
900 PreKleano	1.00
HP-100	3.00
Base Coat & Color (BC 610)	3.50
Clear Coat (DC88)	10.00
BR 60	1.00
Total Amount Applied	19.00

N.B.: Since the survey only addressed paint and clear coat application amounts, the maximum amounts shown above were used for actual emission calculations for all of the analyses.

Table B-5
VOC -ACTUAL EMISSIONS
CALCULATIONS FOR
LARGE AREA (ENTIRE PANEL)

Substance	Substance Density (lbs./gal)	VOC Concentration (lbs./gal)	Actual Applied (oz.)	VOC Emitted (lbs.)
Polycracker	8.59	0.00	0.50	0.0000
900 PreKleano	6.28	6.28	1.00	0.0625
HP-100	10.93	1.71	3.00	0.0293
Base Coat Color (BC 610)	7.55	6.20	2.67	0.1370
Clear Coat (DC 88)	7.81	5.45	2.91	0.1269
BR 60	7.48	7.48	1.00	0.0625
TOTAL VOC'S (LBS.):				0.4183

Jobs Per Week:	7
VOC'S Per Week (lbs.)= (Jobs Per Week) X (VOC'S Per Job):	2.93
VOC'S Per Month (lbs.)= (VOC'S Per Week) X (52 Weeks/12 Months):	12.69
VOC'S Per Year (lbs.)= (VOC'S Per Week) X (52 Weeks):	152.26

Table B-6
VOC -ACTUAL EMISSIONS
CALCULATIONS FOR
MEDIUM AREA (QUARTER PANEL)

Substance	Substance Density (lbs./gal)	VOC Concentration (lbs./gal)	Actual Applied (oz.)	VOC Emitted(lbs.)
Polycracker	8.59	0.00	0.25	0.0000
900 PreKleano	6.28	6.28	0.50	0.0313
HP-100	10.93	1.71	1.50	0.0147
BaseCoat Color (BC 610)	7.55	6.20	1.44	0.0739
Clear Coat (DC 88)	7.81	5.45	1.64	0.0715
BR 60	7.48	7.48	0.50	0.0313
TOTAL VOC'S (LBS.):				0.2226

Jobs Per Week:	11
VOC'S Per Week (lbs.)= (Jobs Per Week) X (VOC'S Per Job):	2.45
VOC'S Per Month (lbs.)= (VOC'S Per Week) X (52 Weeks/12 Months):	10.61
VOC'S Per Year (lbs.)= (VOC'S Per Week) X (52 Weeks):	127.33

Table B-7
VOC -ACTUAL EMISSIONS
CALCULATIONS FOR
SMALL AREA (MIRROR, WIPERS, KEYPAD)

Substance	Substance Density (lbs./gal)	VOC Concentration (lbs./gal)	Actual Applied (oz.)	VOC Emitted (lbs.)
Polycracker	8.59	0.00	0.13	0.0000
900 PreKleano	6.28	6.28	0.25	0.0156
HP-100	10.93	1.71	0.75	0.0073
BaseCoat Color (BC 610)	7.55	6.20	1.05	0.0539
Clear Coat (DC 88)	7.81	5.45	1.10	0.0480
BR 60	7.48	7.48	0.25	0.0156
TOTAL VOC'S (LBS.):			0.1404	

Jobs Per Week:	9
VOC'S Per Week (lbs.)= (Jobs Per Week) X (VOC'S Per Job):	1.26
VOC'S Per Month (lbs.)= (VOC'S Per Week) X (52 Weeks/12 Months):	5.48
VOC'S Per Year (lbs.)= (VOC'S Per Week) X (52 Weeks):	65.73

Total VOC Emissions = Large Area + Medium Area + Small Area

Total VOC Emissions per Day =	1.33
Total VOC Emissions per week =	6.64
Total VOC Emissions per month =	28.78
Total VOC Emissions Per Year (lbs.)=	345.32

Table B-8
VOC WORST CASE SCENARIO EMISSIONS
CALCULATIONS FOR THEORETICAL MAXIMUM EMISSIONS
MAXIMUM PRODUCT USAGE & MAXIMUM THROUGHPUT (PRODUCTION)
LARGE AREA (ENTIRE PANEL)

Substance	Substance Density (lbs./gal)	VOC Concentration (lbs./gal)	Maximum Amount Applied (oz.)	WCS VOC Emitted (lbs.)
Polycracker	8.59	0.00	0.50	0.0000
900 Pre Kleano	6.28	6.28	1.00	0.0625
HP-100	10.93	1.71	3.00	0.0293
BaseCoat Color (BC 610)	7.55	6.20	3.50	0.1796
Clear Coat (DC 88)	7.81	5.45	10.00	0.4361
BR 60	7.48	7.48	1.00	0.0625
TOTAL VOC'S (LBS.):				0.7701

Max Jobs Per Day (ALL LARGE AREAS):	10
Max Jobs Per Week (7-DAY WEEK, ALL LARGE AREAS):	70
Max VOC'S Per Week (lbs.)= (Max Jobs Per Week) X (Max VOC'S Per Job):	53.91
Max VOC'S Per Month (lbs.)= (Max VOC'S Per Week) X (52 Weeks/12 Months):	233.60
Max VOC'S Per Year (lbs.)= (Max VOC'S Per Week) X (52 Weeks):	2803.20

Table B-9
Hazardous Substance Concentrations
in Substances Applied (Percentage)

The six substances used in the application process contain hazardous substances in the following percentages (from MSDS's).

Substance	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
Polycracker	0	0	0	0	0	0	0
900 Prekleano	2	0	0	0	4	0	6
HP-100 Primer	0	0	0	0	0	0	0
Base Color (#BC610)	4	0	0	42	0	0	15
Clear (DC 88)	4	0	3	0	19	0	15
BR60-Reducer	0	2	0	0	0	6	2

NB: Polycracker & HP-100 primer do not contain defined hazardous substances

Table B-10
HAZARDOUS SUBSTANCES - ACTUAL EMISSIONS
PER JOB CALCULATIONS FOR
(Large Area)

Substance	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
900 Prekleano	0.02	0	0	0	0.04	0	0.06
Base Color (#BC 610)	0.11	0	0	1.12	0	0	0.40
Clear (DC88)	0.12	0	0.09	0	0.55	0	0.44
BR60-Reducer	0	0.02	0	0	0	0.06	0.02
Total (Oz.)	0.24	0.02	0.09	1.12	0.59	0.06	0.92
Total (Lbs.)	0.0152	0.0013	0.0055	0.0701	0.0371	0.0038	0.0573
Total Per Week	0.1064	0.0088	0.0382	0.4906	0.2594	0.0263	0.4012
Total Per Month	0.4437	0.0365	0.1593	2.0459	1.0817	0.1095	1.6730
Per Year	5.320	0.438	1.910	24.531	12.970	1.313	20.059

Table B-11
HAZARDOUS SUBSTANCES -ACTUAL EMISSIONS
PER JOB CALCULATIONS FOR
(Medium Area)

Substance	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
900 Prekleano	0.01	0	0	0	0.02	0	0.03
Base Color (#BC 610)	0.06	0	0	0.04	0	0	0.22
Clear (DC88)	0.07	0	0.03	0	0.31	0	0.25
BR60-Reducer	0	0.01	0	0	0	0.03	0.01
Total (OZ.)	0.13	0.01	0.03	0.04	0.33	0.03	0.50
Total (Lbs.)	0.0083	0.0006	0.0021	0.0027	0.0207	0.0019	0.0314
Total Per Week	0.0916	0.0069	0.0226	0.0297	0.2280	0.0206	0.3451
Total Per Month	0.3819	0.0287	0.0940	0.1238	0.9507	0.0860	1.4392
Per Year	4.579	0.344	1.128	1.485	11.399	1.031	17.256

Table B-12
HAZARDOUS SUBSTANCES - ACTUAL EMISSIONS
PER JOB CALCULATIONS FOR
(Small Area)

Substance	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
900 Prekleano	0.01	0	0	0	0.01	0	0.02
Base Color (#BC 610)	0.04	0	0	0.44	0	0	0.16
Clear (DC88)	0.04	0	0.03	0	0.21	0	0.17
BR60-Reducer	0	0.01	0	0	0	0.02	0.01
Total (Oz.)	0.09	0.01	0.03	0.44	0.22	0.02	0.34
Total (Lbs.)	0.0057	0.0003	0.0021	0.0276	0.0137	0.0009	0.0214
Total Per Week	0.0512	0.0028	0.0186	0.2481	0.1232	0.0084	0.1927
Total Per Month	0.2135	0.0117	0.0774	1.0344	0.5137	0.0352	0.8034
Per Year	2.559	0.141	0.928	12.403	6.159	0.422	9.633

Table B-13
HAZARDOUS SUBSTANCES -ACTUAL EMISSIONS CUMMULATIVE TOTAL FOR
(Large, Medium & Small Areas)

Cummulative Totals	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
Weekly Emissions	0.25	0.02	0.08	0.77	0.61	0.06	0.94
Monthly Emissions	1.04	0.08	0.33	3.20	2.55	0.23	3.92
Annual Emissions	12.46	0.92	3.97	38.42	30.53	2.77	46.95

Table B-14
HAZARDOUS SUBSTANCES - THEORETICAL EMISSIONS
PER JOB CALCULATIONS FOR
WORST CASE SCENARIO

Substance	Ethyl Benzene	Cumene	Methyl Ethyl Ketone	Methyl Isobutyl. Ketone	Toluene	Trimethyl Benzene	Xylene
900 Prekleano	0.20	0	0	0	0.04	0	0.06
Base Color (#BC 610)	0.14	0	0	1.47	0	0	0.53
Clear (DC88)	0.40	0	0.30	0	1.90	0	1.50
BR60-Reducer	0	0.02	0	0	0	0.06	0.02
Total (Oz.)	0.74	0.02	0.30	1.47	1.94	0.06	2.11
Total (Lbs.)	0.0463	0.0013	0.0188	0.0919	0.1213	0.0038	0.1316
Total Per Day	0.4625	0.0125	0.1875	0.9188	1.2125	0.0375	1.3156
Total Per Week	3.2375	0.0875	1.3125	6.4313	8.4875	0.2625	9.2094
Total Per Month	14.0184	0.3789	5.6831	27.8473	36.7509	1.1366	39.8766
Per Year	168.350	4.550	68.250	334.425	441.350	13.650	478.888

Table B-15
de minimis Emission Level (DMEL) Comparisons
to WCS Daily Emission Levels -
"Air Toxic Modeling Procedures", South Carolina
Department of Health and Environmental Control,
Bureau of Air Quality

Level I Approach

Hazardous Substance	WCS - Hourly Emissions (lbs./Hr)	WCS – Daily Emissions (lbs./day) 24 Hour Day	DMEL (lbs./day)	Compliance (Is WCS (lbs./day)< DMEL?)
Ethyl Benzene	0.04625	1.11	20.88	Yes
Cumene	0.00125	0.03	0.043	Yes
Methyl Ethyl Ketone	0.01875	0.45	70.8	Yes
Methyl/Isobutyl Ketone	0.09188	2.21	9.84	Yes
Toluene	0.12125	2.91	9.61	Yes
Xylene	0.13188	3.17	20.88	Yes

NB: Trimethyl Benzene is not designated as a Hazardous Air Pollutant under OSHA or South Carolina standards.