

George Philley  
Starcraft RV  
P. O. Box 458  
Topeka, Indiana, 46571

Re: 087-12994  
Second Administrative Amendment to  
Part 70 087-7472-00007

Dear George Philley:

Starcraft RV was issued a Part 70 Operating Permit on January 25, 1999 for custom recreational vehicle manufacturing plant. A letter requesting addition of a new repair paint booth, a dust collector and insignificant activities was received on November 20, 2000. Pursuant to the provisions of 2-7-11 the permit is hereby administratively amended as follows (language added is shown in **bold** and deleted is shown with ~~strikeout~~):

The Permittee has requested to add following emission units:

1. one (1) woodworking shop, identified as 4, with maximum capacity of 100 pounds wood per hour. Shop 4 uses one baghouse DC-11 for dust particulate control exhausting to the interior of the shop.
2. one (1) RV Campers repair booth, identified as Repair booth 1, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of 6 air atomization guns, utilized for wood and plastic substrate only, with particulate matter (PM) controlled by dry filters, exhausting through three (3) stacks SV-30, SV-31 and SV-32.
3. Insignificant activities:
  - (1) two (2) natural gas fired air make-up unit, identified as AM-1 and AM-2, with maximum capacity of 4.9 and 2.0 million Btu per hour.
  - (2) six (6) natural gas fired thermo cycler heaters, identified as H-33, H-34, H-35, H-36, H-37 and H-38, each with a maximum heat input rate of 0.5 million Btu per hour, exhausting to stacks identified as H-33, H-34, H-35, H-36, H-37 and H-38.
  - (3) four (4) natural gas fired radiant tube heaters, identified as H-39, H-40, H-41 and H-42, each with a maximum heat input rate of 0.2 million Btu per hour, exhausting to stacks identified as H-39, H-40, H-41 and H-42.

### **Emission Calculations**

See Appendix A page 1 and 2 of this document for detailed emissions calculations.

### **Potential To Emit**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	0.23
PM-10	0.53
SO <sub>2</sub>	-
VOC	6.8
CO	3.9
NO <sub>x</sub>	4.7

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any criteria pollutant from this modification is less than the threshold levels specified in 326 IAC 2-1.1-3 (d) (1). Therefore, it is exempt from source modifications, 326 IAC 2-7-10.5 and permit modifications 326 IAC 2-7-12. Therefore it is being processed as an administrative amendment, 326 IAC 2-7-11 (a) (8) “..revise descriptive information where the revision will not trigger a new applicable requirements or violate a permit term”.

### Permit Changes

The following changes are made to the permit conditions:

1. Section A.2 on page 5, 6 and 6a of 41 of the Part 70 Operating Permit is modified to read as follows:

- A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) surface coating booth, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using dry filters for overspray control, utilized for wood and metal substrates, equipped with HVLP and airless spray guns, and exhausting at four (4) stacks identified as 1, 2, 3, and 4.
- (b) Paint spray coating, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using dry filters for overspray control, utilized for wood, metal, and plastic substrates, equipped with air atomized spray guns, and exhausting at one (1) stack identified as 7.
- (c) Roller and stain coating, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using no controls, utilized for wood and plastic substrates, equipped for roller and wipe application, and exhausting at two (2) stacks identified as 5 and 8.
- (d) Unvented surface coating and adhesive applications, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, utilized for wood, metal, and plastic substrates, using aerosol, wipe, and roller application.

- (e) Three woodworking shops, identified as 1, 2 and 3, with maximum capacities of 3130, 565, and 295 pounds wood per hour. Shops 1 and 3 use separate cyclones for particulate control, exhausting at two (2) stacks identified as 6 and 10. Shop 2 uses one baghouse for particulate control, exhausting through one (1) stack identified as 9.
- (f) One (1) hot melt glue operation with a maximum capacity of 4.50 units per hour, using a raw material of 325.0 pounds plywood per hour, 330.0 pounds of fiberglass panels per hour, exhausting through a stack identified as SV-29;
- (g) One (1) RV Campers repair paint booth identified as PB<sub>4</sub>, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of two (2) paint pots, one (1) wash tank for paint guns, one (1) air atomized wash gun, five (5) air atomized cup guns identified as PGRV-001 through PGRV-005 utilized for wood and plastic substrates only, particulate matter (PM) controlled by a dry filters, exhausting through a stack identified as SV-28.
- (h) **one (1) woodworking shop, identified as 4, with maximum capacity of 100 pounds wood per hour. Shop 4 uses one baghouse DC-11 for dust particulate control exhausting to the interior of the shop.**
- (i) **one (1) RV Campers repair booth, identified as Repair booth 1, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of 6 air atomization guns, utilized for wood and plastic substrate only, with particulate matter (PM) controlled by dry filters, exhausting through three (3) stacks SV-30, SV-31 and SV-32.**

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

1. Two (2) natural gas fired boilers, rated at four-hundred thirty-nine thousandths (0.439) and one and nineteen-hundredths (1.19) million British thermal units per hour (MMBtu/hr).
2. **two (2) natural gas fired air make-up unit, identified as AM-1 and AM-2, with maximum capacity of 4.9 and 2.0 million Btu per hour.**
3. **six (6) natural gas fired thermo cycler heaters, identified as H-33, H-34, H-35, H-36, H-37 and H-38, each with a maximum heat input rate of 0.5 million Btu per hour, exhausting to stacks identified as H-33, H-34, H-35, H-36, H-37 and H-38.**
4. **four (4) natural gas fired radiant tube heaters, identified as H-39, H-40, H-41 and H-42, each with a maximum heat input rate of 0.2 million Btu per hour, exhausting to stacks identified as H-39, H-40, H-41 and H-42.**

2. Section D.2 on page 33 of 41 of the Part 70 Operating Permit is modified to read as follows:

## SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (a) Woodworking shop 1, with a maximum capacity of 3130 pounds of wood per hour, equipped with a cyclone for particulate control, and exhausting at one (1) stack identified as 6.
- (b) Woodworking shop 2, with a maximum capacity of 565 pounds of wood per hour, equipped with a baghouse for particulate control, and exhausting at one (1) stack identified as 9.
- (c) Woodworking shop 3, with a maximum capacity of 295 pounds of wood per hour, equipped with a cyclone for particulate control, and exhausting at one (1) stack identified as 10.
- (d) **one (1) woodworking shop, identified as 4, with maximum capacity of 100 pounds wood per hour. Shop 4 uses one baghouse DC-11 for dust particulate control exhausting to the interior of the shop.**

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.2.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations),

- (a) The allowable PM emission rate from woodworking shop 1 shall not exceed 5.53 pounds per hour when operating at a process weight rate of 3130 pounds per hour,
- (b) The allowable PM emission rate from woodworking shop 2 shall not exceed 1.76 pounds per hour when operating at a process weight rate of 565 pounds per hour, and
- (c) The allowable PM emission rate from woodworking shop 3 shall not exceed 1.14 pounds per hour when operating at a process weight rate of 295 pounds per hour.
- (d) **The allowable PM emission rate from woodworking shop 4 shall not exceed 0.55 pounds per hour when operating at a process weight rate of 100 pounds per hour.**

The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour

3. Section D.4 on page 37a of 41 of the Part 70 Operating Permit is modified to read as follows:

#### SECTION D.4 FACILITY OPERATION CONDITIONS

- (a) One (1) hot melt glue operation with a maximum capacity of 4.50 units per hour, using a raw material of 325.0 pounds plywood per hour, 330.0 pounds of fiberglass panels per hour, exhausting through a stack identified as SV-29;
- (b) One (1) RV Campers repair paint booth identified as PB<sub>4</sub>, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of two (2) paint pots, one (1) wash tank for paint guns, one (1) air atomized wash gun, five (5) air atomized cup guns identified as PGRV-001 through PGRV-005 utilized for wood and plastic substrates only, particulate matter (PM) controlled by a dry filters, exhausting through a stack identified as SV-28.
- (c) **one (1) RV Campers repair booth, identified as Repair booth 1, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of 6 air atomization guns, utilized for wood and plastic substrate only, with particulate matter (PM) controlled by dry filters, exhausting through three (3) stacks SV-30, SV-31 and SV-32.**

#### Emission Limitations and Standards

##### D.4.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM from the hot melt glue operation, **Repair booth 1** and paint booth No. 4 shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this amendment and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Gurinder Saini, at (800) 451-6027, press 0 and ask for Gurinder Saini or extension 3-0203, or dial (317) 233-0203.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

#### Attachments

GS

cc: File - LaGrange County  
U.S. EPA, Region V  
LaGrange County Health Department  
Northern Regional Office  
Air Compliance Section Inspector – Doyle Houser  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michele Boner

# PART 70 OPERATING PERMIT OFFICE OF AIR MANAGEMENT

**Starcraft RV  
536 Michigan Street  
Topeka, Indiana, 46571**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T087-7472-00007	
Issued by: Felicia R. George, Assistant Commissioner Office of Air Management	Issuance Date: January 25, 1999
First Administrative Amendment 087-10700	Issuance Date: April 20, 1999
Second Administrative Amendment: 087-12994	Pages affected: 5, 6, 33, 37a Pages removed: 6a
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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The Permittee owns and operates a stationary custom recreational vehicle manufacturing plant.

Responsible Official: George Philley  
Source Address: 536 Michigan Street, Topeka, Indiana 46571  
Mailing Address: P.O. Box 453, Topeka, Indiana, 46571  
SIC Code: 3716  
County Location: Lagrange  
County Status: Attainment for all criteria pollutants  
Source Status: Part 70 Permit Program  
Major Source, Section 112 of the Clean Air Act  
Minor Source, PSD Rules

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) surface coating booth, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using dry filters for overspray control, utilized for wood and metal substrates, equipped with HVLP and airless spray guns, and exhausting at four (4) stacks identified as 1, 2, 3, and 4.
- (b) Paint spray coating, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using dry filters for overspray control, utilized for wood, metal, and plastic substrates, equipped with air atomized spray guns, and exhausting at one (1) stack identified as 7.
- (c) Roller and stain coating, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, using no controls, utilized for wood and plastic substrates, equipped for roller and wipe application, and exhausting at two (2) stacks identified as 5 and 8.
- (d) Unvented surface coating and adhesive applications, supporting a maximum source capacity of coating parts for four and five-tenths (4.5) vehicles per hour, utilized for wood, metal, and plastic substrates, using aerosol, wipe, and roller application.
- (e) Three woodworking shops, identified as 1, 2 and 3, with maximum capacities of 3130, 565, and 295 pounds wood per hour. Shops 1 and 3 use separate cyclones for particulate control, exhausting at two (2) stacks identified as 6 and 10. Shop 2 uses one baghouse for particulate control, exhausting through one (1) stack identified as 9.

- (f) One (1) hot melt glue operation with a maximum capacity of 4.50 units per hour, using a raw material of 325.0 pounds plywood per hour, 330.0 pounds of fiberglass panels per hour, exhausting through a stack identified as SV-29;
- (g) One (1) RV Campers repair paint booth identified as PB<sub>4</sub>, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of two (2) paint pots, one (1) wash tank for paint guns, one (1) air atomized wash gun, five (5) air atomized cup guns identified as PGRV-001 through PGRV-005 utilized for wood and plastic substrates only, particulate matter (PM) controlled by a dry filters, exhausting through a stack identified as SV-28.
- (h) one (1) woodworking shop, identified as 4, with maximum capacity of 100 pounds wood per hour. Shop 4 uses one baghouse DC-11 for dust particulate control exhausting to the interior of the shop.
- (i) one (1) RV Campers repair booth, identified as Repair booth 1, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of 6 air atomization guns, utilized for wood and plastic substrate only, with particulate matter (PM) controlled by dry filters, exhausting through three (3) stacks SV-30, SV-31 and SV-32.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)]  
[326 IAC 2-7-5(15)]

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This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

1. Two (2) natural gas fired boilers, rated at four-hundred thirty-nine thousandths (0.439) and one and nineteen-hundredths (1.19) million British thermal units per hour (MMBtu/hr).
2. two (2) natural gas fired air make-up unit, identified as AM-1 and AM-2, with maximum capacity of 4.9 and 2.0 million Btu per hour.
3. six (6) natural gas fired thermo cycler heaters, identified as H-33, H-34, H-35, H-36, H-37 and H-38, each with a maximum heat input rate of 0.5 million Btu per hour, exhausting to stacks identified as H-33, H-34, H-35, H-36, H-37 and H-38.
4. four (4) natural gas fired radiant tube heaters, identified as H-39, H-40, H-41 and H-42, each with a maximum heat input rate of 0.2 million Btu per hour, exhausting to stacks identified as H-39, H-40, H-41 and H-42.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because it is a major source as defined in 326 IAC 2-7-1(22).



## SECTION D.2 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]:

- (a) Woodworking shop 1, with a maximum capacity of 3130 pounds of wood per hour, equipped with a cyclone for particulate control, and exhausting at one (1) stack identified as 6.
- (b) Woodworking shop 2, with a maximum capacity of 565 pounds of wood per hour, equipped with a baghouse for particulate control, and exhausting at one (1) stack identified as 9.
- (c) Woodworking shop 3, with a maximum capacity of 295 pounds of wood per hour, equipped with a cyclone for particulate control, and exhausting at one (1) stack identified as 10.
- (d) one (1) woodworking shop, identified as 4, with maximum capacity of 100 pounds wood per hour. Shop 4 uses one baghouse DC-11 for dust particulate control exhausting to the interior of the shop.

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.2.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations),

- (a) The allowable PM emission rate from woodworking shop 1 shall not exceed 5.53 pounds per hour when operating at a process weight rate of 3130 pounds per hour,
- (b) The allowable PM emission rate from woodworking shop 2 shall not exceed 1.76 pounds per hour when operating at a process weight rate of 565 pounds per hour, and
- (c) The allowable PM emission rate from woodworking shop 3 shall not exceed 1.14 pounds per hour when operating at a process weight rate of 295 pounds per hour.
- (d) The allowable PM emission rate from woodworking shop 4 shall not exceed 0.55 pounds per hour when operating at a process weight rate of 100 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

#### D.2.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

### Compliance Determination Requirements

#### D.2.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the PM limit specified in Condition D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

### Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

## SECTION D.4 FACILITY OPERATION CONDITIONS

- (a) One (1) hot melt glue operation with a maximum capacity of 4.50 units per hour, using a raw material of 325.0 pounds plywood per hour, 330.0 pounds of fiberglass panels per hour, exhausting through a stack identified as SV-29;
- (b) One (1) RV Campers repair paint booth identified as PB<sub>4</sub>, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of two (2) paint pots, one (1) wash tank for paint guns, one (1) air atomized wash gun, five (5) air atomized cup guns identified as PGRV-001 through PGRV-005 utilized for wood and plastic substrates only, particulate matter (PM) controlled by a dry filters, exhausting through a stack identified as SV-28.
- (c) one (1) RV Campers repair booth, identified as Repair booth 1, with a maximum capacity of 2.0 recreational vehicles (RV) per hour, consisting of 6 air atomization guns, utilized for wood and plastic substrate only, with particulate matter (PM) controlled by dry filters, exhausting through three (3) stacks SV-30, SV-31 and SV-32.

### Emission Limitations and Standards

#### D.4.1 Hazardous Air Pollutant (HAPs) Limitation

- (a) The input of each single hazardous air pollutant (HAP) and combined hazardous air pollutants including clean up solvent, minus solvent shipped outside, delivered to the applicators of the hot melt glue operation shall be limited to less than 10.0 and 25.0 tons per year, rolled on a monthly basis, respectively. Therefore, the Maximum Achievable Control Technology (MACT) requirements of 326 IAC 2-1-3.4 will not apply.
- (b) During the first 12 months of operation, the input raw material usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the 0.75 for single hazardous air pollutant and 2.0 for combined hazardous air pollutants (HAPs), respectively.

#### D.4.2 Volatile Organic Compounds (VOC) Limitation

- (a) The input VOC including clean up solvent, minus VOC solvent shipped outside, delivered to the applicators of the hot melt glue operation shall be limited to less than 25.0 tons per year, rolled on a monthly basis. Therefore, the Best Available Control Technology (BACT) requirements of 326 IAC 8-1-6 will not apply.
- (b) During the first 12 months of operation, the input raw material usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the 2.0 tons.

#### D.4.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM from the hot melt glue operation, Repair booth 1 and paint booth No. 4 shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

#### D.4.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility identified as Paint Booth No. 4.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100**

**Company Name: Starcraft RV  
Address City IN Zip: 536 Michigan Street, Topeka, IN 46571  
CP: 087-12994  
Pit ID: 087-00007  
Reviewer: Gurinder Saini  
Date: December 1, 2000**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
10.7	93.7

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.1	0.4	0.0	4.7	0.3	3.9

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

**Appendix A: Emissions Calculations  
VOC and Particulate  
From Surface Coating Operations**

**Company Name:** Starcraft RV  
**Address City IN Zip:** 536 Michigan Street, Topeka, Indiana 46571  
**CP:** 087-12994  
**Pit ID:** 087-00007  
**Reviewer:** GS  
**Date:** December 7, 2000

Material	Density (Lb/Gal)	Weight % Volatile (H2O& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency
<b>Repair Paint Booth (No.4)</b>																
Isopropyl Alcohol	6.5	100.00%	0.0%	100.0%	0.0%	0.00%	0.029	2.0	6.50	6.50	0.38	9.05	1.65	0.00	ERR	75%
DCA488 Hi Performance Clear	7.0	94.50%	0.0%	94.5%	0.0%	5.00%	0.043	2.0	6.59	6.59	0.57	13.59	2.48	0.07	131.73	50%
DDL Lacquer	7.0	95.80%	0.0%	95.8%	0.0%	4.00%	0.029	2.0	6.68	6.68	0.39	9.29	1.70	0.04	166.93	50%
Hand Glaze	8.3	90.00%	60.0%	30.0%	60.0%	10.00%	0.007	2.0	6.23	2.49	0.03	0.84	0.15	0.03	24.90	50%
Cream Hardner	10.0	20.00%	0.0%	20.0%	0.0%	78.00%	0.00056	4.5	2.00	2.00	0.01	0.12	0.02	0.00	2.56	100%
883 Retardner	7.5	100.00%	0.0%	100.0%	0.0%	0.00%	0.0014	4.5	7.51	7.51	0.05	1.14	0.21	0.00	ERR	100%
Putty Coat	13.3	18.00%	0.0%	18.0%	0.0%	80.00%	0.006	4.5	2.40	2.40	0.06	1.45	0.26	0.00	3.00	100%
TigerHair	13.0	28.00%	0.0%	28.0%	0.0%	70.00%	0.000	4.5	3.64	3.64	0.00	0.11	0.02	0.00	5.20	100%

**State Potential Emissions  
METHODOLOGY**

**Add worst case coating to all solvents**

**1.48      35.59      6.50      0.13**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)  
Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)  
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)  
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)  
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)  
Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \*(8760 hrs/yr) \*(1 ton/2000 lbs)  
Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)  
Total = Worst Coating + Sum of all solvents used