Continental Aerospace Technologies, Inc.
(Manufacture of Airplane Engines/Parts)
503-0002
Major Source of Carbon Monoxide

Introduction

On January 27, 2025, the Department received applications from Continental Aerospace Technologies, Inc. (Continental), for a renewal of the Title V Major Source Operating Permit (MSOP) for their engine manufacturing facility in Mobile, AL.

This renewal was originally noticed on April 23, 2025, and extended to May 30, 2025. Public comments were received on May 30, 2025, and it was determined that changes to the permit, Statement of Basis, and application required a new notice period. Updated information for the application was received through June 20, 2025. A brief summary of the changes from the April 23, 2025, draft permit and Statement of Basis are noted below.

1. Changes to the Statement of Basis include:
- The Engine Test Cell section now includes an expanded explanation of the permit summary and requirements.
- The Appendix Section includes an explanation of the emission factors and the background documents describing where they were derived from. These will be included in the Title V application addendum.

2. Changes to the draft permit include:
- The Listing of Units page numbers have been revised.
- Language was revised under Operating Permit Summary No. 3, Section 3, Provisos 1 and 2, and Operating Summary Permit No. 8, Section 3, Provisos 1 and 2, to more accurately describe the test methods prescribed.
- Revised language was added to Operating Permit Summary No. 4, Section 5, Proviso 1, clarifying carbon monoxide (CO) language and indicating which factors should be considered in the calculations used to determine emissions for each engine test cell.
- Revised language was added to Operating Permit Summary No. 52, Section 5, Proviso 2, clarifying CO language.
- Revised language was added to Operating Permit Summary No. 53, Section 5, Proviso 2, clarifying CO language.

3. Changes to the permit application include:
- Revised addendums that clarify CO background information, tables, and calculations.

Continental has applied for renewal of Major Source Operating Permit (MSOP) No. 503-0002. This proposed Title V MSOP renewal has been developed in accordance with the provisions of ADEM Admin. Code R. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management (Department), in accordance with the terms and conditions of the permit.

The initial Title V MSOP was issued on July 28, 2000, and this is the fifth renewal. The current MSOP expires on July 27, 2025. The renewal application was received on January 27, 2025.

The facility is located in Mobile County, which is currently in compliance with all National Ambient Air Quality Standards (NAAQS).

There are no current or ongoing enforcement actions against Continental necessitating additional requirements to achieve compliance with the proposed permit conditions. The enforcement and compliance history for the facility can be found at https://echo.epa.gov/ (Search using Facility ID AL0000000109700002).

Air Permits for the original plant were issued by the Mobile County Health Department. These permits covered Unit Nos. X001, X002, X003, X004, X005, X006, X007, and X008. These permits were incorporated into the Title V permit July 28, 2000. An Air Permit for changing an additional unit was issued on April 30, 2015, which covered Unit No. X052. These changes were incorporated into the Title V permit July 28, 2015. A permitting action occurred on April 29, 2019, which covered the planned operations of the moving portions of units to a new building and covered Unit Nos. X003, X004, X005, X007, X050, X051, X052, and X053. These changes were incorporated into the Title V permit July 28, 2020.

Facility processes consist of shotblasting operations, paint spray booth operations, solvent cleaning operations, and engine test cell operations. Late in 2019, Continental finished a new building and began moving existing equipment, installing new equipment, and retiring old equipment. Most processes have been installed and are currently operating, although some are still being transferred.

During the previous Title V permit term, air construction permits were issued for the following processes.

- Shotblasting Operation(s) with Bag System(s) (X003)

- Polishing/Grinding Operation(s) with Cyclone(s)/Dust Collector(s) (X008)

The requirements of the above permits will be incorporated into this Title V renewal.

Since their last Title V application, two natural gas fired boilers have been shutdown permanently for safety and will be removed from this renewal.

Continental is a major source with respect to Title V for CO emissions, which mostly come from their engine testing operations.

Title V Permitted Units

The following is a list of all the facility's sources (individual emissions units) that will be part of the facility's Title V Major Source Operating Permit:

Permit Unit No.	Description of Unit
003	Shotblasting Operation(s) with Baghouse(s)
004	Engine Test Cell Operations (Experimental and Production)
005	Paint Spray Operations with Oven(s)
007	Solvent Cleaning Operations
008	Polishing/Grinding Operation(s) with Cyclone(s)/Dust Collector(s)
050	Plating and Polishing Operations
051	Gasoline Dispensing Operations
052	Diesel Fired 300 KW Reciprocating Internal Combustion Engine Operations
053	Natural Gas Fired 125 KW Reciprocating Internal Combustion Engine Operations

There are four abrasive blasting operations units using steel shot and grit that exhaust to baghouses at Continental. These baghouses vent to the inside of the facility. These consist of Shot Peen Machine 510: Threads (Blue Marlin) with Clemco 1648 w/ Donaldson DFO 2-2 Baghouse, Shot Peen Machine 511: Cylinders (Blue Marlin) with Clemco 1648 w/ Donaldson DFO 2-2 Baghouse, Barrell Repair (Blue Marlin) with

Crozier Speed Lathe w/ Donaldson DFO 2-2 Baghouse for L475, and Wheelabrator WS 210S with Donaldson VS-1500 Dust Collector (Building 96).

There are several grinding and polishing operations that exhaust to baghouses at Continental. These consist of M476 with Crankshaft Polisher w/ Donaldson Baghouse, L435 Cam Deburr Lathe, L451 Speed Lathe, H646 Green Balance, and H534 Snag Grinder, which all vent to a common Donaldson DFEP-4 Baghouse. These operations also vent to the interior of the facility.

The preceding units are used as follows: Aircraft engine parts (gears, rocker arms, connecting rods, etc.) are placed on a rotary table that continually rotates past a discharge point where steel shot, glass beads, or plastic beads are hurled by a rotating wheel onto the parts. This process removes heat scale and machining burrs. Fractured steel shot, plastic beads, and scale particles are exhausted from the units into a control device and then exhausted inside the building. Similarly, aircraft engine parts are polished using polishers, sanders, grinders, and buffers. This process removes heat scale and machining burrs and abrasive materials, and scale particles are exhausted from the units into a control device then exhausted.

Continental has five paint spray booths that are used to coat or touch up engine parts. These consist of the Prime Paint Booth (Blue Marlin), Black/Gold Paint Booth (Blue Marlin), Paint Booth - Crankcase (Blue Marlin), Showcase Paint Booth, and Packaging Paint Booth. Continental also uses solvent in dip tanks and test cell wash stations to clean engine parts.

Engine Test Cell Operations

Continental performs regular and experimental tests in the Engine Test Cell Operations Unit which consists of three production engine test cells (Blue Marlin), nine experimental engine test cells (Building 26), and twelve engine test cells (Building 96). There are two operating scenarios used to test engines during either simulated 1.5-hour flights for production engines or longer periods for simulated flights on experimental engines. The engines are tested in "idle", "take-off", "climb-out", and "approach" for varying lengths of time, depending on the scenario. They utilize either aviation gasoline or jet A fuel. These fuels and other liquids are stored in various storage tanks and included in the list of insignificant activities.

Applicable Regulations

The engine test cells are subject to a synthetic minor limit to avoid applicability to the Prevention of Significant Deterioration (PSD) program. This limit was voluntarily accepted by the facility. The limit was established in the air permit issued on April 29, 2019, and subsequently incorporated into the Title V permit on July 28, 2020.

Testing of Emissions

No periodic testing of emissions is required.

Monitoring of Emissions

The engine test cells are not subject to any additional regulations. Continental will maintain records of monthly engine test cells usage and emission calculations for the cells to show compliance with these requirements. These records will be submitted to the Department quarterly.

Surface Coating Operations

There are individual paint booths throughout the facility that paint various parts and whole engines.

Applicable Regulations

The coating lines are not subject to any additional regulations.

Testing of Emissions

No periodic testing of emissions is required. Continental uses manufacturers' information based on Method 24 or 311 as appropriate for the coatings used in coating operations.

Monitoring of Emissions

The coating lines are not subject to any additional regulations. Continental will maintain records of monthly coating usage and coating analysis for each line to show compliance with these requirements. These will be submitted to the Department quarterly.

Plating and Polishing Operations

There are various plating and polishing lines to process metal parts. Continental has several plating operations that treat the various metals used in their engine production. These operations include the Magnesium Phosphate Line and Alodine Chromate Conversion Line. There will also be a Sn Plating- Crankshaft Propeller unit that will be classified as an insignificant source. Some of the other plating

operations have been outsourced since the last Title V revision and the recent move to the new building.

Applicable Regulations

The tanks are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Polishing and Plating Operations, Subpart WWWWWW in 40 CFR Part 63.11504. This regulation requires Continental to conduct Best Management Practices.

Testing of Emissions

No periodic testing of emissions is required.

Monitoring of Emissions

Periodic monitoring of emissions is required by the NESHAP as applicable.

Gasoline Dispensing Operations

There are various storage tanks to hold fuel for onsite use.

Applicable Regulations

The tanks are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Gasoline Dispensing Facilities, Subpart CCCCCC in 40 CFR Part 63.11110. This regulation requires Continental to conduct Best Management Practices and demonstrate throughput.

Testing of Emissions

No periodic testing of emissions is required.

Monitoring of Emissions

No periodic monitoring of emissions is required.

Shotblast Operations with Cyclones/Baghouses and Polishing/Grinding Operations with Cyclones/Baghouses

Continental has many metal operations subject to opacity and particulate standards. There are particulate control devices on the metalworking operations.

Applicable Regulations

These operations are subject to the visible emissions standards found in ADEM Admin. Code R. 335-3-4-.01 and to the process weight standards found in ADEM Admin. Code R. 335-3-4-.04.

Testing of Emissions

No periodic testing of emissions is required.

Monitoring of Emissions

The baghouses and cyclones will be monitored for visible emissions for instances when the units are vented to the atmosphere outside the facility. Currently, weekly observations of visible emissions are done to maintain compliance with the particulate standards. If greater than normal emissions are noted, corrective action to minimize emissions will be taken within 24 hours. This will be followed by an additional observation to confirm that emissions are reduced to normal. Records of weekly observations and any corrective actions will be retained for at least five years and will be available to be reviewed by Departmental personnel during compliance inspections.

Generators

Continental also has emergency generator engines for emergency power. The new electric powered fire-pump is not permitted.

Two emergency use only generators are included with this renewal, which consist of a Generac 125 KW natural gas fired engine and a mobile Cummings 300 KW diesel fired engine. These are used for power outages and periodic testing only.

Applicable Regulations

The 125KW Generator is subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines, Subpart ZZZZ in 40 CFR Part 63.3080 as a new source. The requirements are described in detail in the attached provisos. This source will show compliance by complying with the New Source Performance Standards (NSPS) as defined in 40 CFR 60, Subpart JJJJ for the natural gas fired unit as a new source.

The 300KW Generator is subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines, Subpart ZZZZ in 40 CFR Part 63.3080 as an existing source.

Monitoring of Emissions

There is no regular monitoring of emissions, besides the hour meter requirements and regular periodic maintenance as required by the NESHAP. The units have shown compliance with the standards by certification by the manufacturer.

CAM

Compliance Assurance Monitoring (CAM) is not applicable for the NESHAP regulations within this Title V permit because these regulations were proposed post November 15, 1990 (Gasoline Dispensing Facilities, Polishing and Plating Operations, Stationary Reciprocating Internal Combustion Engines). CAM is not applicable for the Title V permit for the other units listed herein because potential uncontrolled emissions of criteria pollutants do not exceed 100 tons per year on any one unit with a control device.

Fugitive Dust

The fugitive dust potential was evaluated and is not expected to be of concern at this facility. The plant property is grassed, and travel areas are covered by asphalt, concrete, or graveled surfaces. Metal waste particulate matter will pass through a filter before being emitted. No stockpiles of dust producing materials are planned. Therefore, it has been determined by the Department that a dust plan is not required at this time.

Permitting Fees

Title V major sources are subject to operating permit fees which charge the facility a yearly amount based on the actual emission rate of pollutants for the previous year.

Affected States Notification

Standard practice is to notify of the issuance of this major source operating permit to all states bordering Alabama.

Recommendations

I recommend that the Major Source Operating Permit be renewed to Continental pending resolution of any comments received during the 30-day public comment period and 45-day EPA review.

July 2025
Kevin Fulmer
Chemical Branch
KMF: kmf C:\KMF\COMP\TITLEV\CONTINENTALMOTORS\RENEW2025\A970002B_5_01.doc

Appendix:

Diesel EF Reference Document (origin of emission factors for diesel fuel engines)
Non-Diesel Fuel EF (origin of emission factors for gasoline fuel engines)
Test Cell Emission Factors (compilation of emission factors for various sizes of engines and fuels)
Monthly CO Emissions Tracking (example submission for Continental for typical month)

APPENDIX SECTION

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Test Cell Emission Factors (compilation of emission factors for various sizes of engines and fuels)
Monthly CO Emissions Tracking (example submission for Continental for typical month)

Performance and Emission Characteristics of an Aircraft Turbo Diesel Engine using JET-A Fuel

by

Sean Christopher Underwood

B.S. Aerospace Engineering, Georgia Institute of Technology, 2005
B.S. Mathematics, Georgia Southwestern State University, 2005

Submitted to the Department of Aerospace Engineering and the Faculty of the Graduate School of Engineering at the University of Kansas in partial fulfillment of the requirements for the degree of Master of Science.

Committee:

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Dr. Ray Taghavi, Committee Chairman

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Dr. Saeed Farokhi, Committee Member

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Dr. Mark Ewing, Committee Member

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Date Thesis Defended

$$\frac{D_p}{F_{oo}} = 37.572 + 1.6\pi_{oo} - 0.2087F_{oo} \quad (46)$$

$$\frac{D_p}{F_{oo}} = 37.572 + 1.6 * (19) - 0.2087 * 100 = 47.102 \quad (47)$$

The max limit for emission for NOx is 47.102; again the turbo diesel's emission is less than the limit. Therefore, Thielert Centurion 1.7 aircraft engine passed the regulation of the ICAO and FAA.

The second method, of checking the emission data of the engine, is to compare the emission data with other types of engines using jet fuel. The data for these comparisons are given in Tables XXVII-XXXII.

Table XXVII: Thielert Centurion 1.7 - Emission at Time Mode

Time Mode	CO g/kg fuel	NOx g/kg fuel	HC g/kg fuel	Fuel Flow kg/hr
Idle	31.36	23.27	10.61	1.37
High Idle	10.49	23.16	4.86	5.21
Cruise	6.97	30.48	2.83	11.42
Max	6.36	24.49	1.08	21.92

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PB87-205266

AP-42
Fourth Edition
September 1985

COMPILATION OF AIR POLLUTANT EMISSION FACTORS

Volume II: Mobile Sources

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Mobile Sources
Test and Evaluation Branch
Ann Arbor, MI 48105

TABLE II-1-7 (CONTINUED)

Model-Series Mfg.[b] Type[b]	Mode	Fuel Rate lb/hr	Fuel Rate kg/hr	CO lb/hr	CO kg/hr	NO_x[c] lb/hr	NO_x[c] kg/hr	Total HC[d] lb/hr	Total HC[d] kg/hr	SO_x[e] lb/hr	SO_x[e] kg/hr	Particulates[f] lb/hr	Particulates[f] kg/hr
RB-211-22B[i] RR TF	Idle	1718	779.3	137.6	64.42	5.31	2.41	100.1	45.36	1.72	0.78		
	Takeoff	14791	6709	5.62	2.55	504.1	228.7	29.14	13.22	14.79	6.71		
	Climbout	12205	5536	14.89	6.75	301.9	136.9	8.30	3.76	12.21	5.54		
	Approach	4376	1985	93.78	42.54	32.26	14.63	32.16	14.59	4.38	1.99		
RB-211-524[i] RR TF	Idle	1769	802.4	35.91	16.29	4.74	2.15	5.43	2.46	1.77	0.80		
	Takeoff	17849	8096	7.32	3.32	660.4	299.6	1.96	0.889	17.85	8.10		
	Climbout	14688	6662	7.34	3.33	470.0	213.2	2.50	1.13	14.69	6.67		
	Approach	5450	2472	11.72	5.32	62.89	28.53	0.545	0.247	5.45	2.47		
RB-401-06[i] RR TF	Idle	330	149.7	10.07	4.57	0.825	0.374	0.924	0.419	0.33	0.15		
	Takeoff	2400	1089	2.40	1.09	30.0	13.61	0.120	0.054	2.40	1.09		
	Climbout	2130	966.2	2.77	1.26	24.07	10.92	0.107	0.049	2.13	0.97		
	Approach	775	351.5	5.04	2.29	3.88	1.76	0.155	0.070	0.78	0.35		
Dart RDa7[i] RR TP	Idle	411	186.4	37.61	17.06	0.292	0.132	25.52	11.58	0.41	0.19		
	Takeoff	1409	639.1	4.79	2.17	8.51	3.86	8.75	3.97	1.41	0.64		
	Climbout	1248	566.1	4.26	1.93	5.55	2.52	2.15	0.975	1.25	0.57		
	Approach	645	292.6	21.48	9.74	0.568	0.258	0.0	0.0	0.65	0.29		
Tyne[g,i] RR TP	Idle	619	280.8	40.79	18.50	0.477	0.216	6.63	3.01	0.62	0.28		
	Takeoff	2372	1076	1.21	0.549	27.11	12.30	2.87	1.31	2.37	1.08		
	Climbout	2188	922.5	1.29	0.585	25.23	11.44	2.63	1.19	2.19	0.99		
	Approach	1095	496.7	11.30	5.13	9.00	4.08	2.68	1.22	1.10	0.50		
Olympus 593[i] MK610 RR (Bristol) TJ	Idle	3060	1388	342.7	155.4	9.72	4.41	119.3	54.11	3.06	1.39		
	Takeoff	52200	23673	1513.8	686.5	542.9	246.2	151.4	68.7	52.2	23.7		
	Climbout	19700	8936	275.8	125.1	169.4	76.84	31.52	14.30	19.70	8.94		
	Descent	5400	2449	426.6	193.5	18.9	8.6	132.3	60.0	5.4	2.4		
	Approach	9821	4455	451.8	204.9	41.25	18.71	93.30	42.32	9.82	4.46		
O-200 Con. O	Idle	8.24	3.75	5.31	2.42	0.013	0.006	0.239	0.107	0.0	0		
	Takeoff	45.17	20.53	44.0	20.0	0.220	0.100	0.940	0.427	0.01	0		
	Climbout	45.17	20.53	44.0	20.0	0.220	0.100	0.940	0.427	0.01	0		
	Approach	25.50	11.59	30.29	13.75	0.029	0.013	0.847	0.385	0.01	0		
TSIO-360C Con. O	Idle	11.5	5.21	6.81	3.09	0.022	0.009	1.59	0.723	0.0	0.0		
	Takeoff	133.	60.3	143.9	65.3	0.36	0.16	1.22	0.55	0.03	0.01		
	Climbout	99.5	45.1	95.6	43.4	0.43	0.20	0.95	0.43	0.02	0.01		
	Approach	61.0	27.7	60.7	27.5	0.23	0.10	0.69	0.31	0.01	0.01		
6-285-B (Tiara) Con. O	Idle	72.12	10.03	26.23	11.90	0.0334	0.0152	0.773	0.350	0.0	0.0		
	Takeoff	153.0	69.39	152.7	69.3	0.899	0.408	1.78	0.806	0.03	0.01		
	Climbout	166.0	52.61	110.9	50.3	0.913	0.414	1.39	0.632	0.02	0.01		
	Approach	83.5	37.88	85.39	38.77	0.394	0.179	1.343	0.609	0.02	0.01		

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Test Cell Emission Factors

Continental Aerospace Technologies, Inc.
Mobile, AL

DO NOT SUBMIT BELOW- BACKUP DOCUMENTATION ONLY

Centurion 1.7 Test Emission Factors were taken from the report:
"Performance and Emission Characteristics of an Aircraft Turbo Diesel Engine using JET-A Fuel" prepared for the Department of Aerospace Engineering at the University of Kansas

Centurion 1.7 Emission Factors

Flight Mode	Fuel Flow (kg/hr)	CO (g/kg)	NOx (g/kg)	HC (g/kg)	SO2 (g/kg)	CO (g/hr)	NOx (g/hr)	HC (g/hr)	SO2 (g/hr)	CO (lb/hr)	NOx (lb/hr)	HC (lb/hr)	SO2 (lb/hr)
Idle	1.37	31.36	23.27	10.61	3.03	42.96	31.88	14.54	4.15	0.095	0.070	0.03205	0.00915
Max (Takeoff)	36.5	6.36	24.49	1.08	3.03	232.14	893.89	39.42	110.60	0.512	1.971	0.08691	0.24382
Max (Climb-out)	36.5	6.36	24.49	1.08	3.03	232.14	893.89	39.42	110.60	0.512	1.971	0.08691	0.24382
High Idle (Approach)	5.21	10.49	23.16	4.86	3.03	54.65	120.66	25.32	15.79	0.120	0.266	0.05582	0.03480

None Diesel emission factors

Continental Test Emission Factors from "*Compliation of Air Pollutant Emission Factors - Volume II: Mobile Sources*", AP-42, Fourth Edition, September 1985, Table II-1-7 (0-200 Con and

Flight Mode (<200 HP)	Fuel Flow (lb/hr)	CO (lb/hr)	NOx (lb/hr)	HC (lb/hr)	SO2 (lb/hr) *
Idle	8.24	5.31	0.01	0.24	0.01
Max (Takeoff)	45.17	44	0.22	0.94	0.01
Max (Climb-out)	45.17	44	0.22	0.94	0.01
High Idle (Approach)	25.5	30.29	0.03	0.85	0.01

Flight Mode (≥200 HP)	Fuel Flow (lb/hr)	CO (lb/hr)	NOx (lb/hr)	HC (lb/hr)	SO2 (lb/hr)*
Idle	11.5	6.81	0.02	1.59	0.01
Max (Takeoff)	133	143.9	0.36	1.22	0.03
Max (Climb-out)	99.5	95.6	0.43	0.95	0.02
High Idle (Approach)	61	60.7	0.23	0.69	0.01

* Although the reference document had 0.00 lb/hr SO2 as the emission factor for Idle Mode for SO2, an emisson factor of 0.01 lb/hr was used to provide an acutal number.

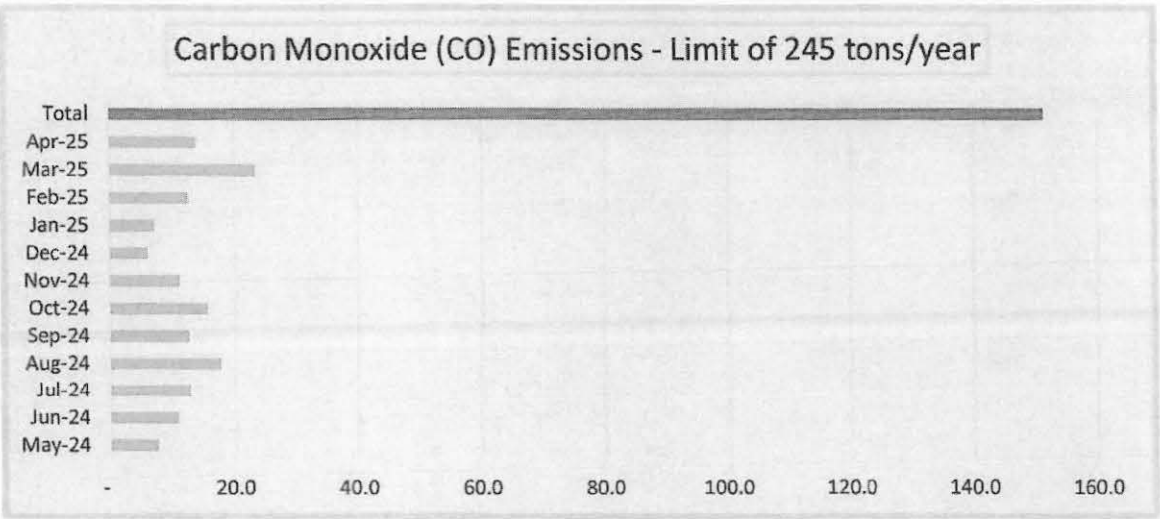
ATTACHMENT D

Continental Aerospace Technologies, Inc

2025 Summary of Carbon Monoxide Emissions

Month	*Production Engines	Experimental Hours	CO Emissions
May-24	121	71	7.5
Jun-24	120	253	10.8
Jul-24	146	306	12.8
Aug-24	159	488	17.8
Sep-24	134	276	12.7
Oct-24	192	103	15.6
Nov-24	154	58	11.2
Dec-24	114	0	5.9
Jan-25	135	1	7.1
Feb-25	158	102	12.7
Mar-25	147	370	23.5
Apr-25	150	111	13.9
Total	**1730**	**1394**	**151.4**

*Includes Blue Marlin - Blue Marlin construction complete as of 04/15/2025 and in process of testing



Carbon Monoxide Emissions for April

Calculations are made using EPA AP-42 emission factors for various testing modes detailed below.

Totals from Engine Test Cells	lbs	tons/mon	YTD tons/yr
CO	27,715	13.9	**57.10**

Production Test Cell Emissions:	Blue Marlin	Current CMI	Total
Number of Piston Aircraft Engines tested	0	150	150
Engines tested for 1.5 hours			1.5
Percentage of Engines less than 200hp			0.03
Percentage of Engines greater than 200hp			0.97
Percentage Idle Testing			0.11
Percentage Take-Off			0.17
Percentage Climb-Out			0.06
Percentage Approach			0.66

Production Test Cell Emissions					
	Less than 200hp		Greater than 200hp		
Carbon Monoxide (CO)	lb/hr	hr	lb/hr	hr	Total lbs
CO - Idle Testing	5.3	1	6.8	24	167
CO - Take-Off	44	1	143.9	37	5,390
CO - Climb-Out	44	0.4	95.6	13	1,270
CO - Approach	30.3	4	60.7	144	8,879
Total - CO lbs	15,705				

Experimental Test Cell Emissions (Includes AvGas & Unleaded):	<200hp	>200hp
Hours engines tested	**0**	**111**
Percentage of Engines less than 200hp	0.00	
Percentage of Engines greater than 200hp	-	1.00
Percentage Idle Testing	0.10	0.05
Percentage Take-Off	0.375	0.43
Percentage Climb-Out	0.375	0.43
Percentage Approach	0.15	0.10

Experimental Test Cell Emissions (Includes AvGas & Unleaded)					
	Less than 200hp		Greater than 200hp		
Carbon Monoxide (CO)	lb/hr	hr	lb/hr	hr	Total lbs
CO - Idle Testing	5.3	0.0	6.8	5.6	38
CO - Take-Off	44	0.0	143.9	47.2	6,788
CO - Climb-Out	44	0.0	95.6	47.2	4,510
CO - Approach	30.3	0.0	60.7	11.1	674
Total - CO lbs	12,010				

Experimental Test Cell Diesel Emissions >200hp:	
Hours Diesel engines tested	**0**
Percentage of Diesel Engines greater than 200hp	1.00
Percentage Idle Testing	0.05
Percentage Take-Off	0.45
Percentage Climb-Out	0.45
Percentage Approach	0.05

Experimental Test Cell Diesel Emissions >200hp			
Carbon Monoxide (CO)	lb/hr	hr	Total lbs
CO - Idle Testing	0.1	0.0	-
CO - Take-Off	0.5	0.0	-
CO - Climb-Out	0.5	0.0	-
CO - Approach	0.10	0.0	-
Total - CO lbs	-		

Experimental Test Cell Diesel Emissions <200hp:	
Hours Diesel engines tested	**0.0**
Percentage of Diesel Engines less than 200hp	0.00