Air Resources Board

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Winston H. Hickox
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Mail-Out #MSO 2001-10

August 9, 2001

TO: ALL OFF-ROAD MOTORCYCLE MANUFACTURERS
ALL ALL-TERRAIN VEHICLE MANUFACTURERS
ALL OTHER INTERESTED PARTIES

SUBJECT: CERTIFICATION GUIDELINES FOR 2001 AND LATER MODEL-YEAR (MY) OFF-ROAD MOTORCYCLES (OFMCs) AND ALL-TERRAIN VEHICLES (ATVs)

In December 1998, the Air Resources Board (ARB) amended the emission standards and test procedures for on-road motorcycles (ONMCs), OFMCs and ATVs. These amendments were approved by the Office of Administrative Law (OAL) in October 1999. For OFMCs and ATVs, the amendments include the allowance for vehicles that do not meet the emission standards to be certified for limited use in California. The emission standards and test procedures for OFMCs and ATVs that are certified as meeting the emission standards were unchanged. This Mail-Out provides an update of the ARB's certification guidelines for OFMCs and ATVs. Certification guidelines of 2001 and later MY ONMCs are provided in a separate Mail-Out (Mail-Out #MSO 2001-08, dated July 9, 2001).

A. For certification of OFMCs and ATVs that do not meet the emission standards, the 1-page application format described in Mail-out #MSO 99-04 for such non-compliant vehicles remains in effect.

B ARB's guidance for certification of emission-compliant OFMCs and ATVs was first described in Mail-Out #96-16. ARB's policies described in Mail-Out #96-16 for certification of emission-compliant OFMCs and ATVs remain effective.

C. For certification of emission-compliant ATVs that use the optional test procedures of small off-road engines (SOREs), the ARB's intent and policy for such certification to be applied to the full vehicle, not just the engine that powers such vehicles, is clarified below.

Under the current, optional engine certification allowance, a manufacturer certifies and produces engines for an original equipment manufacturer (OEM) of emission-compliant ATVs. The OEM does not have to recertify its ATVs. This may possibly lead to engine stockpiling, and has resulted in the model year of the ATVs being different from that of their engines. Model year discrepancies present difficulties for ARB enforcement activities, and inequity concerns because these engine-certified ATVs may not comply with the current standard for the vehicle's model year. Further, the ARB made clear in its rulemaking for ATVs that the SORE test procedure allowance was made solely to

address test procedure concerns associated with ATVs, not to permit ATV engine certification separate from certification of the vehicle in total.

Consequently, the ARB will not permit certification of ATV engines separate from the certification of the ATVs. Under this new policy, the OEM will have to certify its ATVs although such certification can continue to be achieved, at the OEM's option, by testing the engine according to the SORE test procedures. The OEM will be the manufacturer of record and certificate holder. The OEM will have to coordinate with the engine producer to ensure that its ATVs comply with the emission standards and certification requirements including those pertaining to all production running changes implemented by the engine producer. Although the OEM may make arrangements for the engine producer to submit running change requests directly to ARB and update the OEM's affected certification applications, the OEM bears the ultimate responsibility for compliance with all certification requirements. The ARB staff will adhere to this new policy for all 2002 and subsequent MY ATVs (in order to provide lead time for the affected OEMs).

D. This Mail-Out also provides a new, streamlined application format (Attachment) for certification of emission-compliant OFMCs and ATVs. Applications prepared using the new format will permit an expedient review and certification approval by ARB staff.

New OFMCs and ATVs, whether they comply with the emission standards or not, are not legal for sale and use in California until they are certified by the ARB. Violations of the certification requirement will subject the manufacturer and selling dealers to enforcement actions by the State.

E. **Manufacturers are advised to ensure that the vehicle identification number (VIN) of their certified <u>emission-compliant</u> OFMCs and ATVs do <u>not</u> include the character "C" or "3" in the eighth (8th) position. Otherwise, mis-registration of such vehicles by the Department of Motor Vehicles will occur.**

Concurrently, manufacturers are advised to ensure that the VIN of their certified <u>non-compliant</u> OFMCs and ATVs <u>do</u> use the character "C" or "3" in the eighth (8th) position. Violations of this VIN requirement for non-compliant OFMCs and ATVs will subject the manufacturer to enforcement actions by the State.

Should you have further questions on this matter, please contact Ms. Veronica Longhi, Air Resources Engineer, On-Road Certification / Audit Section, at (626) 575-6642 or by e-mail at vlonghi@arb.ca.gov.

Sincerely,

/s/

R. B. Summerfield, Chief
Mobile Source Operations Division

Attachment

Attachment

Certification Summary Sheet: Emission Compliant Off-Road Motorcycles and All-Terrain Vehicles (1 of either 2 pages)

-- Blank Form in Word 97 Format, or
-- Computer Print-Out Format

(Manufacturers are required to submit an electronic certification database for each engine family. For the OFMC and ATV electronic certification database program, please contact your assigned ARB certification staff. After completing the electronic certification database, the manufacturer must (1) send it electronically to the assigned ARB certification staff, and (2) print out a copy of the Certification Summary Sheet for submission with the application in lieu of filling out the Word 97 form.)

Supplemental Information Form (8 pages)

Certification Database Form (12 pages)

-- 10 pages of computer screen format for data entry
-- 2 pages of description of the data fields in the data entry form

CERTIFICATION SUMMARY

California Environmental Protection Agency
AIR RESOURCES BOARD

EMISSION COMPLIANT OFF-ROAD MCs & ATVs

MODEL-YEAR_____ MANUFACTURER: **EXECUTIVE ORDER:_____**

1. **EPA-Standardized Family Name: _____.**
2. **Vehicle Category: _____.**
3. **All Sales Codes within Engine Family**:_____
4. **All Engine Displacement(s) in Engine Family** (units in cubic centimeters, (cc)):

1)	2)	3)	4)

5. **Emission Standards Compliance: _____**
6. If Corporate Averaging, list **Designated Standard:** _____ for _____.
7. **Engine Design**:

a. Combustion Cycle:	
@ Oil/Fuel Ratio	
b. Engine Type:	
c. Valvetrain:	
d. Total Number of Intake and Exhaust Valves (Ports) per Cylinder:	
e. Type of Engine Cooling:	
f. Number of Cylinders:	
g. Cylinder Arrangement:	

8. Intake, Fuel and Emission Control Systems (ECS):

a. Aftertreatment(s):	
b. Sensor(s):	
c. Fuel System:	
d. Exhaust Gas Recirculation:	
e. Method of Aspiration:	
f. Air Injection Reaction:	
g. Others:	

9. **Deterioration Factors (DFs)**: **a**. New Durability Testing: _____; Carryover from EF:_____;

b. Durability Engine Model:_____ ID: _____; **c**. Durability Test Distance (km or hr): _____;

d. Exhaust DF Values (no less than 1.000): HC:_____; NOx: _____; CO: _____.

10. **Certification Test Engine Information**: New Test: ____; Carryover from Engine Family:_____

a. Test Vehicle or Engine: Model _____ID:_____Rated Power, hp:_____@_____rpm ;Test Date:_____

b. Equivalent Inertia Mass (kg): _____ RLF(Nt): _____ Trans: _____ MPG: _____.

c. Test Fuel Type: _____.

d. Special Test Equipment (e.g., cooling fans, special couplings, etc.): Yes/No: _____. If Yes, describe below:

11. **Certification Emission Levels**: HC:_____ HC+NOx:_____ CO:_____ .

Test No. and Type	Official Test Results in ( ): (raw data) (i.e., no DFs)			Certification Emissions in ( ): (i.e., with DFs applied)			
	HC	NOx	CO	HC	NOx	HC+NOx	CO
1.							
2.							
3.							
Standard:							

Remarks:

Issue Date:_____**Revision Date(s)**:_____

ARB USE ONLY
Processed by:_____ Date:_____ Reviewed by:_____ Date:_____.

AIR RESOURCES BOARD CERTIFICATION SUMMARY EMISSION-COMPLIANT OFF-ROAD MCs & ATVs
MODEL-YEAR_____ MANUFACTURER: _____ EXECUTIVE ORDER: U-M-_____.

1. **EPA-Standardized Engine Family (EF) Name**: _____.
2. **Vehicle Category**: OFMC_____. ATV-chassis standard_____ ATV-engine standard_____.
3. **All Sales Codes within EF**:(check all applicable) California-Only___ 50-State___ 49-State Only___.
4. **All Engine Displacements in EF**: (check one) in cubic centimeters (cc) ___ liters (L) ____.
   1) _____ **2**) _____ **3**) _____ **4**) _____.
5. **Emission Standards Compliance** (check one) Direct Standard____ Corporate Average_____.
6. If Corp.Avg., list **Designated Standard**: _____ for (check one) HC (g/km) ___ HC+NOx g/bhp-hr) ____.
7. **Engine Design**: **a**. Combustion Cycle: (check one) 4-stroke___ 2-stroke____@ Oil/Fuel Ratio_____.
   b. Engine Type: (check one) Reciprocating___ Rotary___ Other (e.g., turbine, etc.) (specify)_____.
   c. Valvetrain: (check one) Overhead___ Side___ Reed Valve___ Piston Ported___ Other (specify)_____.
   d. Total Number of Intake and Exhaust Valves (Ports) per Cylinder: 2__ 3__ 4__ 5__ Other (specify)____.
   e. Type of Engine Cooling: (check one) Air____ Water____ Oil____ Other (specify)_____.
   f. Number of Cylinders: (check one) 1__ 2__ 3__ 4__ 5__ 6__ Other (specify)_____.
   g. Cylinder Arrangement: (check one) Inline___ Vee__ Hori.Opposed (Flat)___ Other (specify)_____.

8. **Intake, Fuel and Emission Control Systems**[1]:_____.
9. **Deterioration Factors (DFs)**: **a**. New Dura.Testing: Yes___ No__ Carryover from EF:_____.
   b. Dura. Eng. Model:_____ ID: _____ Durability Test Distance (km): _____.

   d. Exhaust DF Values (no less than 1.000): HC: _____ NOx: _____ CO: _____.
10. **Certification Test Engine Information**: New Test____ Carryover from Engine Family _____.
    a. Test Vehicle or Engine: Model_____ ID:_____.
    Rated Power, hp:_____@_____rpm Test Date:_____.
    b. Equivalent Inertia Mass (kg): _____ RLF (nt): _____ Trans: _____ MPG: _____.
    c. Test Fuel: Gasoline: Indolene Clear____ Calif. Ph2____ Other (specify)_____.

    d. Special Test Equipment (e.g., cooling fans, special couplings, etc.): No__ Yes/Describe: _____.
    _____.

11. **Certification Emission Levels**: HC:_____ HC+NOx:_____ CO: _____.
    (Enter level from confirmatory test, if any. If none, enter the highest value from all tests below.)

Test No. And Type[2]	Official Test Results (raw) (i.e., no DFs) (check one) g/km ____, g/bhp-hr _____			Certification Emissions (i.e., with DFs applied) (check one) g/km ____, g/bhp-hr _____			
	HC	NOx	CO	HC	NOx	HC+NOx	CO
1							
2							
3							
4							
Standard:							

Remarks: _____.
_____.

1 Use SAE J1930 abbreviations. Examples: **NA** for natural aspiration; **TC** turbocharging; **SC** supercharging; **CAC** charge air cooling; **CARB** carburetion; **TBI** throttle body fuel injection; **MFI** multiport fuel injection; **SFI** sequential MFI; **DGI** direct gasoline injection; **AIR** secondary air injection; **PAIR** pulsed AIR; **EGR** exhaust gas recirculation; **O2S** oxygen sensor; **HO2S** heated O2S; **OC** for oxidation catalyst; **TWC** three-way catalyst; **OC+TWC** for OC plus TWC in one container; **EM** for Engine Modification (use if only **NA** and/or **CARB** are the only other selections in the field).
Use **prefix** "2" or "3" etc. in front of O2S, TWC, etc. to designate **parallel** arrangement, e.g., 2TWC for two TWCs in parallel. Use **suffix** "2" or "3" etc. to designate **series** arrangement, e.g., TWC(3) for three TWCs in three separate containers one after the other.

AIR RESOURCES BOARD CERTIFICATION SUMMARY EMISSION-COMPLIANT OFF-ROAD MCs & ATVs
MODEL-YEAR_____ MANUFACTURER: _____ EXECUTIVE ORDER: U-M-_____.

Issue Date:_____ **Revision Date(s)**:_____.

ARB USE ONLY

Processed by:_____ Date:_____ Reviewed by:_____ Date:_____.

2 Enter **C** for certification test, **RT** for confirmation retest, and **RC** for running change testing

Model Year: _____ **Page: _____**
Manufacturer Name: _____ **Issued: _____**
Engine Family: _____ **Revised: _____**
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO **E.O.#: _U-M-_____**

S01. CARBURETOR Yes ____ No_____
- a. Number of Carburetors: _____
- b. Number of Barrels per Carburetor: _____
- c. Feedback Control: Yes ___ No ___
- d. Idle Circuit: Yes ___ No ___
- e. Fast Idle Circuit: Yes ___ No ___
- f. Other Subsystems (specify): _____
- g. Used in previous/other engine model: No ___ Yes ___ If yes, last model year used: _____

S02. FUEL INJECTION: Yes ____ No _____
- a. Type (e.g., TBI, DGI, MFI, SFI, etc.): _____
- b. Feedback Control: Yes ___ No ____
- c. Point of Injection (e.g., manifold, cylinder, pre-chamber, throttle body): _____
- d. Used in previous/other engine models: No ____ Yes ___ If yes, last year used: _____

S03. CRANKCASE CONTROL
- a. Type (e.g., PCV valve, uncontrolled flow, crankcase scavenging for 2-stroke engines): _____
- b. Routing: Air Cleaner ___ Intake Manifold ___ Inlet Ports (2-Stroke Engines) ___ Other (specify) ___

S04. OXYGEN SENSOR: Yes ____ No _____
- a. Type: Heated ___ Unheated ___ Other (specify) _____
- b. Location: Port ___ Exhaust Manifold ___ Other (specify) ___
- c. Used in previous/other engine models: No ___ Yes ___ If yes, last year used: _____

S05. SECONDARY AIR INJECTION: Yes ____ No_____
- a. Type: Pump ___ (AIR) Pulsed ___ (PAIR)
- b. Point of Injection: Port ___ Exhaust Manifold ___ Other (specify) _____
- c. Method of Modulation: Vacuum ___ Solenoid ___
- d. Sensed Parameters (check all applicable): Coolant Temp ___ Engine RPM ___ MAP ___ Throttle Position___ Other (specify) _____
- e. Used in previous/other engine models: No ___ Yes ___ If yes, last year used: _____

S06. EXHAUST GAS RECIRCULATION (EGR): Yes ____ No_____
- a. Sensed Parameters (check all applicable): Coolant Temp ____ Engine RPM ____ MAP ____ Throttle Position____ Other (specify) _____
- b. Method of Modulation: Vacuum ____ Solenoid ____
- c. Used in previous/other engine models: No ___ Yes ___ If yes, last year used: _____

S07. ADJUSTABLE PARAMETERS AND ANTI-TAMPERING MEASURES

Parameter	Adjustable Range (or N/A)	Tamper Resistance Method (or N/A)	Approval Reference

S08. AUXILIARY EMISSION CONTROL DEVICES (AECD)[3] AND DEFEAT DEVICES[4]

TABLE A: Sensed Parameters[5] versus Controlled Parameters[6]

Sensed Parameter	Sensor	Control Parameters				

TABLE B: Justifications for AECDs

Parameters		Device	Justifications / Notes
Controlled	Sensed		

3 **AECD**: any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any of the emission control system.

4 **Defeat Device**: An AECD that reduces the effectiveness of the emission control system under conditions that may reasonably be expected to be encountered in normal operation and use, unless (1) such conditions are substantially included in the emission test procedure, (2) the need for the AECD is justified in terms of protecting the engine against damage or accident, or (3) the AECD does not go beyond the requirements of engine starting. **A pending engine family that is shown to contain a defeat device will not be certified. A certified engine family that is found to contain a defeat device will subject the manufacturer to enforcement actions**.

5 Examples of Sensed Parameters: atmospheric pressure, crankshaft position, engine RPM, cylinder position, coolant temperature, intake air temperature, intake manifold pressure, throttle position, oxygen concentration in exhaust gas, vehicle speed, knocking, EGR valve position, shift position of transmission, etc.

6 Examples of Controlled Parameters: fuel metering, ignition timing, idle speed, EGR valve, secondary air injection pump or valve, etc.

S09. CATALYTIC CONVERTER: Yes ____ No_____

a. Type/Number/Arrangement (e.g., TWC, OC, 2TWC for 2 parallel, TWC(2) for 2 in series): _____

b. Location (e.g., close coupled, exhaust manifold, muffler): _____

c. Catalyst Manufacturer.: _____

d. Substrate: (i) Volume: _____ cc (ii) Construction: Pellet ___ Honeycomb ___
Number of cells:_____ (per cm^2)
(iii) Composition: Ceramic ___ Metallic ___ (iv) Containment Method: Wire mesh ___ Other (specify) ___

e. Active Material:

Composition (Pt, Pd, Rh): _____ Ratio: _____ Loading (g/L)_____

CONFIDENTIAL

S10. PROJECTED SALES AND PRODUCTION PERIOD **CONFIDENTIAL**

a. Projected California Annual Sales (units): _____ Projected 50 State Sales (units): _____
b. Estimated Production Period: Start Date: _____ End Date: _____
c. Estimated Introduction into Commerce Date: _____

Model Year: ____________
Manufacturer Name: ______________________
Engine Family: _________________________
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO

Page: ___________
Issued: ______________
Revised: _____________
E.O.#: _U-M-____________

S11. MODEL SUMMARY (Use an asterisk (*) to identify worst-case vehicle or engine model used for certification testing.)

S12. Vehicle Model	S13. Engine Code	S14. Sales Codes (Check ALL appropriate)			S15. Eng. Displ. (cc)	S16. Rated Power (hp)	S17. Rated Speed (RPM)	S18. Trans. (e.g., M5, A3, CVT)	S19. EIM (kg)	S20. RLF (nt)
		Calif. Only	49-State	50-State						

Model Year: _____ **Page: _____**
Manufacturer Name: _____ **Issued: _____**
Engine Family: _____ **Revised: _____**
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO **E.O.#: U-M-_____**

S21. EMISSION-RELATED PART NUMBERS (Part numbers as stamped on the component, not the stock or inventory numbers, should be listed here.)

	Vehicle Model				
Fuel System:					
Carb/Mixer Assy.					
Fuel Injector					
Fuel Pump					
ECM					
Pressure Regulator					
Oxygen Sensor					
Other (specify)					
Intake System:					
Air Cleaner Element					
Intake Manifold					
Turbocharger					
Supercharger					
Charge Air Cooler					
Other (specify)					
Ignition System:					
Spark Plug					
Ignition Coil					
Ignition Control Valve Module					
Distributor					
Other (specify)					
EGR:					
EGR Valve Assembly					
Vacuum Control Valve					
Air Injection					
Control Valve					
Check Valve					
Solenoid Valve					
Aftertreatment System:					
Catalyst					
Exhaust Manifold					
Crankcase System:					
PCV Valve					

S22. LABELING: Emission label format approved? No____ Yes ___ If yes, reference approval:_____
Sample label attached? No____ Yes (put label in #S23)____

S23. ADDITIONAL INFORMATION AND COMMENTS

Model Year: _____ **Page: _____**
Manufacturer Name: _____ **Issued: _____**
Engine Family: _____ **Revised: _____**
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO **E.O.#: U-M-_____**

S24. CORPORATE AVERAGE PLAN
OFMC __X__ ATV-chassis standard _____ ATV-engine standard _____
SAMPLE FORM

CONFIDENTIAL

Manufacturer: ABC Motorcycle Co.
2001 Model-Year Certification Plan and Estimated Production Volumes

(1)	(2)	(3)	(4)	(5)	(6)
Engine Family	Models	Estimated Production Volume (Units)		Designated HC or HC+Nox (g/km or g/bhp-hr)	(3) x (5)
		Family	Model		
YXZXC.700ABC		30		1.6	48
	711K		10		
	723B		10		
	747A		10		
YXZXC.850DEF		58		1.2	69.6
	850B		13		
	850C		45		
YXZXC1.34GHJ		39		0.9	35.1
	345X		23		
	450W		16		
YXZXC2.00KLM		54		0.8 (HC+NOx)	43.2
	200J		54		
TOTALS:		181			195.9

ESTIMATED CORPORATE AVERAGE EMISSION VALUE = Σ (6) / Σ (3) = 195.9/181 = **1.08 g/km** ≤ 1.2 g/km, ∴ PASS

Model Year: _____
Manufacturer Name: _____
Engine Family: _____
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO

Page: _____
Issued: _____
Revised: _____
E.O.#: U-M-_____

S24. CORPORATE AVERAGE PLAN

OFMC _____ ATV-chassis standard _____ ATV-engine standard _____

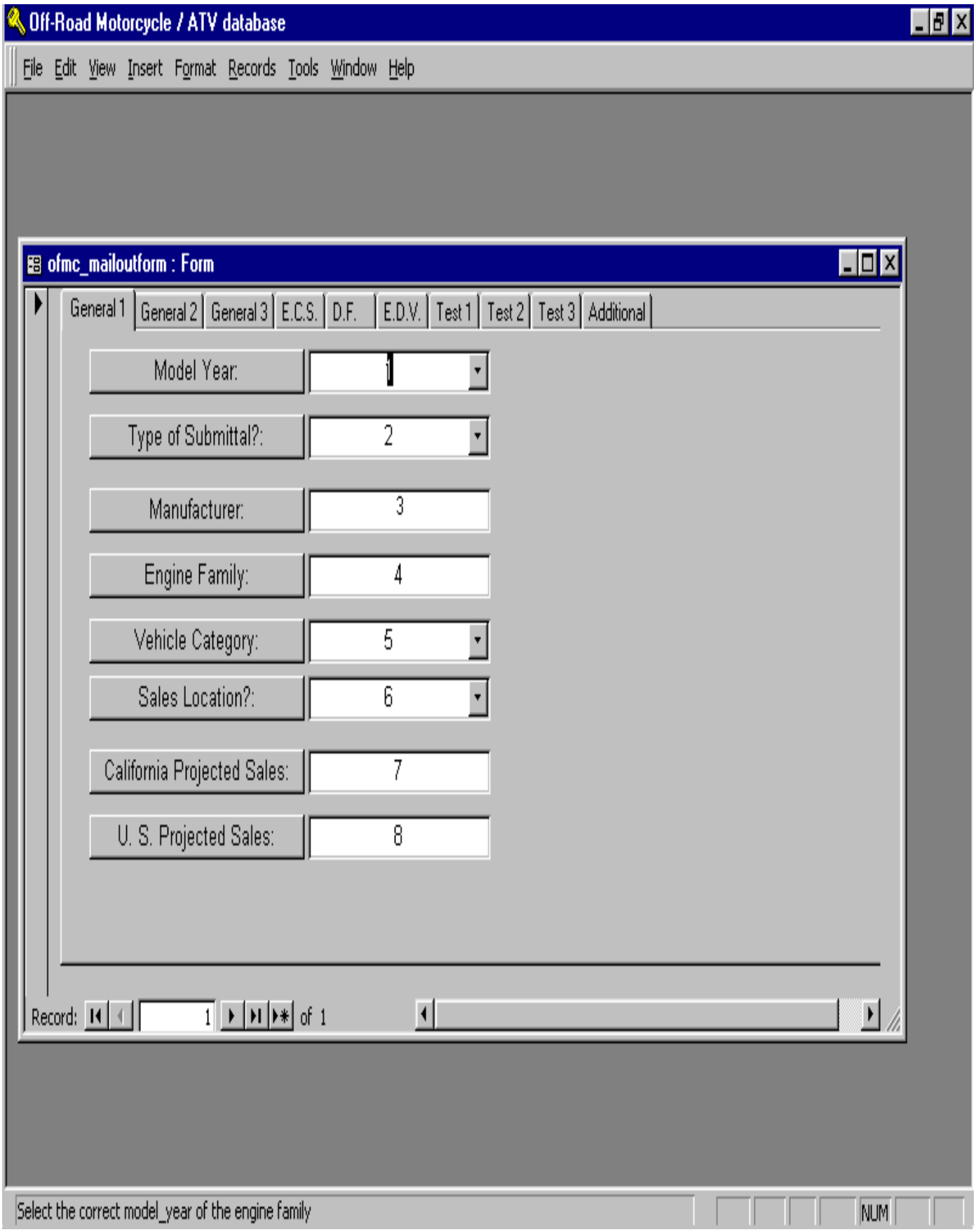
CONFIDENTIAL

Manufacturer_____
_____ Model-Year Certification Plan and Estimated Production Volumes

(1)	(2)	(3)	(4)	(5)	(6)
Engine Family	Models	Estimated Production Volume (Units)		Designated HC or HC+Nox (g/km or g/bhp-hr)	(3) x (5)
		Family	Model		
TOTALS:					

ESTIMATED CORPORATE AVERAGE EMISSION VALUE = Σ (6) / Σ (3) =

Issue Date: _____, Revision Date(s): _____


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
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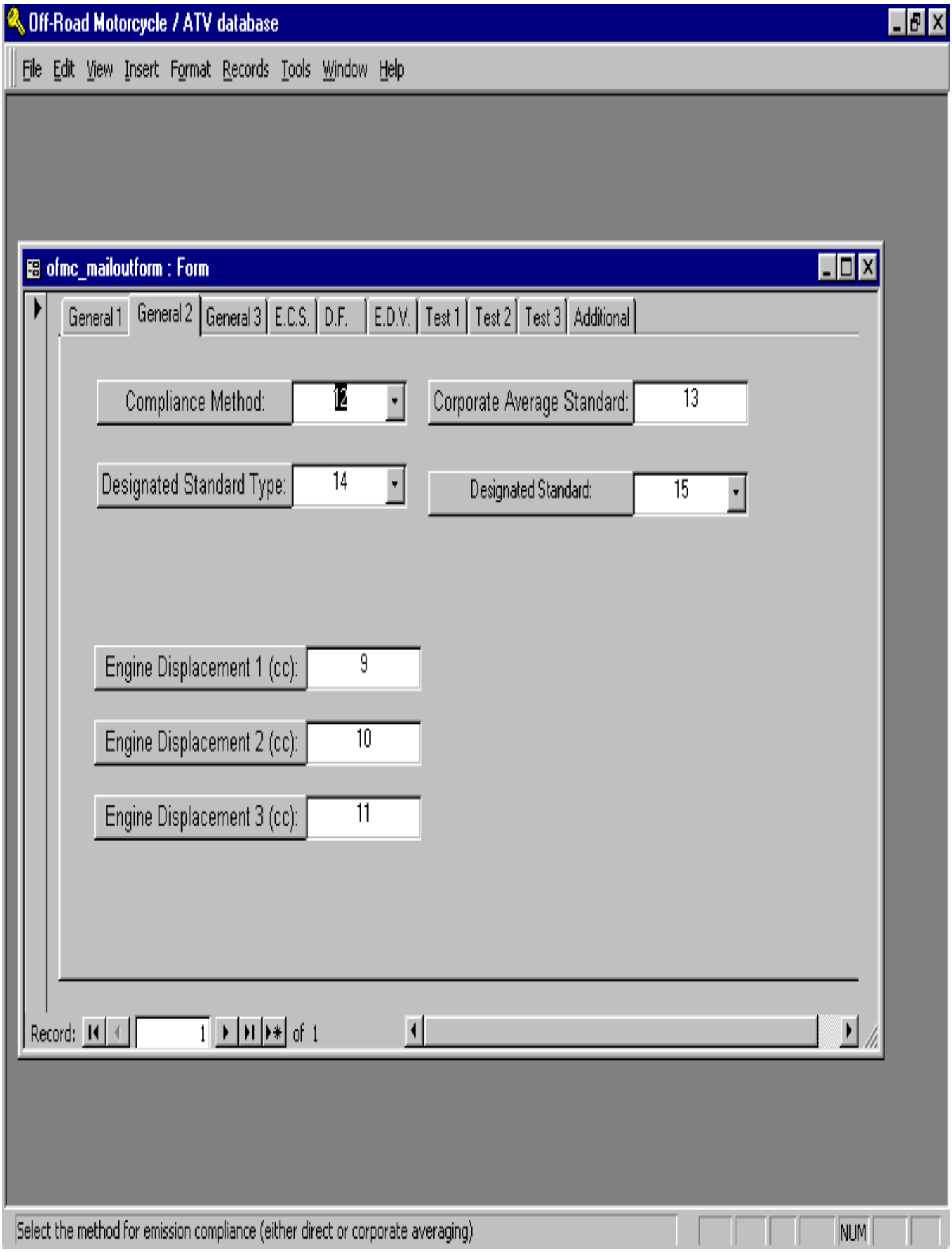
General 1
General 2
General 3
E.C.S.
D.F.
E.D.V.
Test 1
Test 2
Test 3
Additional
Model Year:
1
Type of Submittal?:
2
Manufacturer:
3
Engine Family:
4
Vehicle Category:
5
Sales Location?:
6
California Projected Sales:
7
U. S. Projected Sales:
8
Record:
1
of 1
Select the correct model_year of the engine family
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
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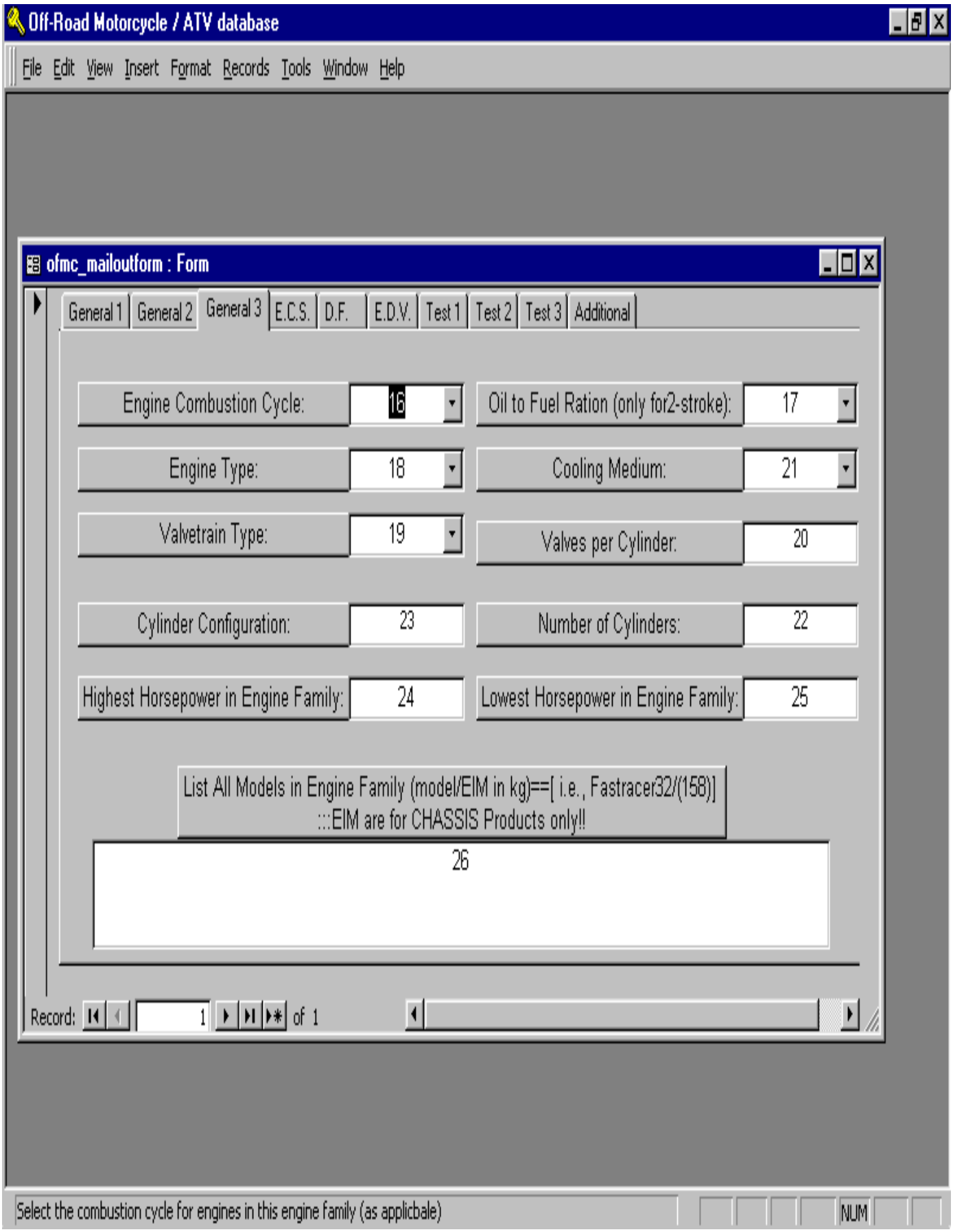
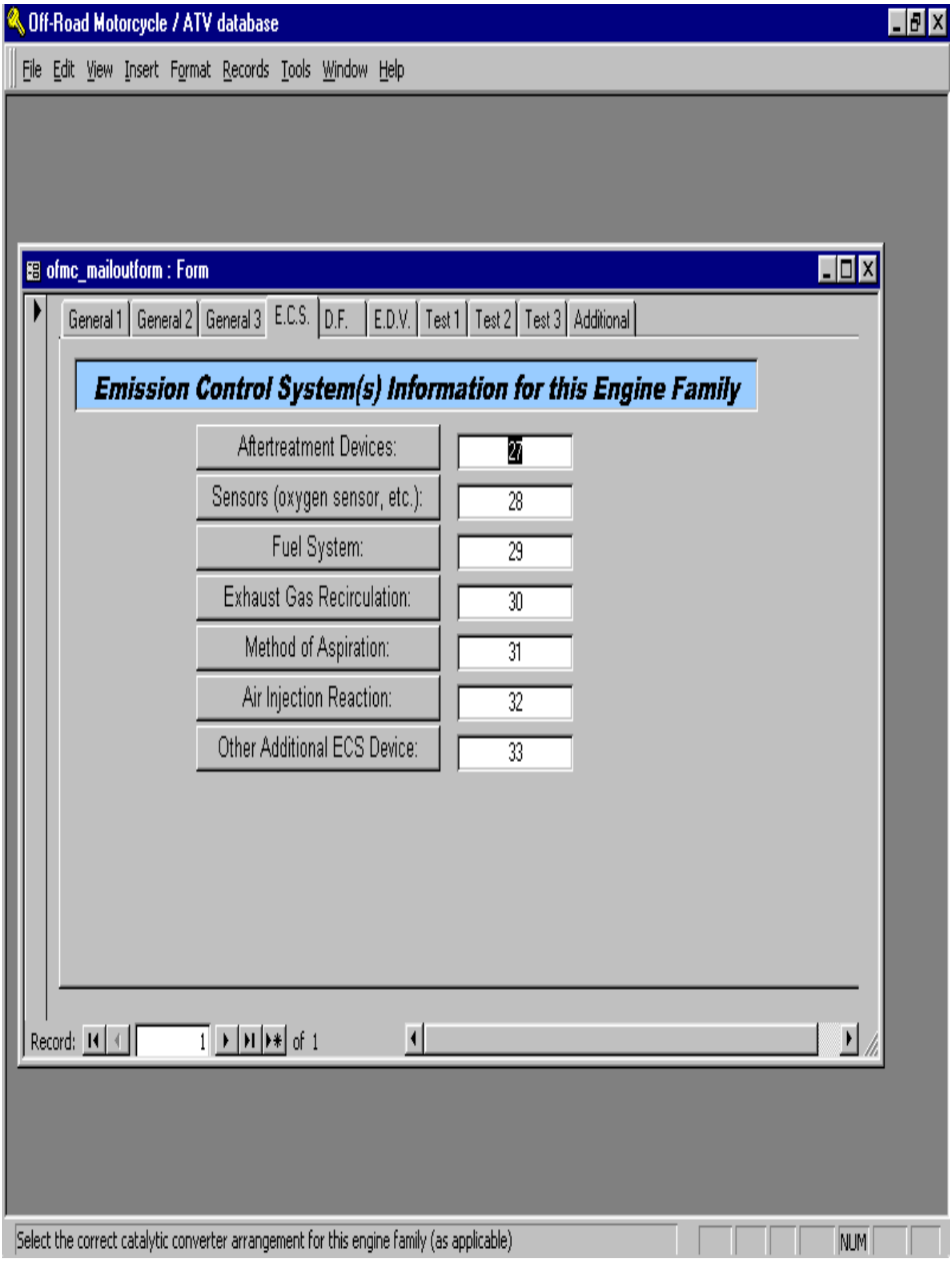
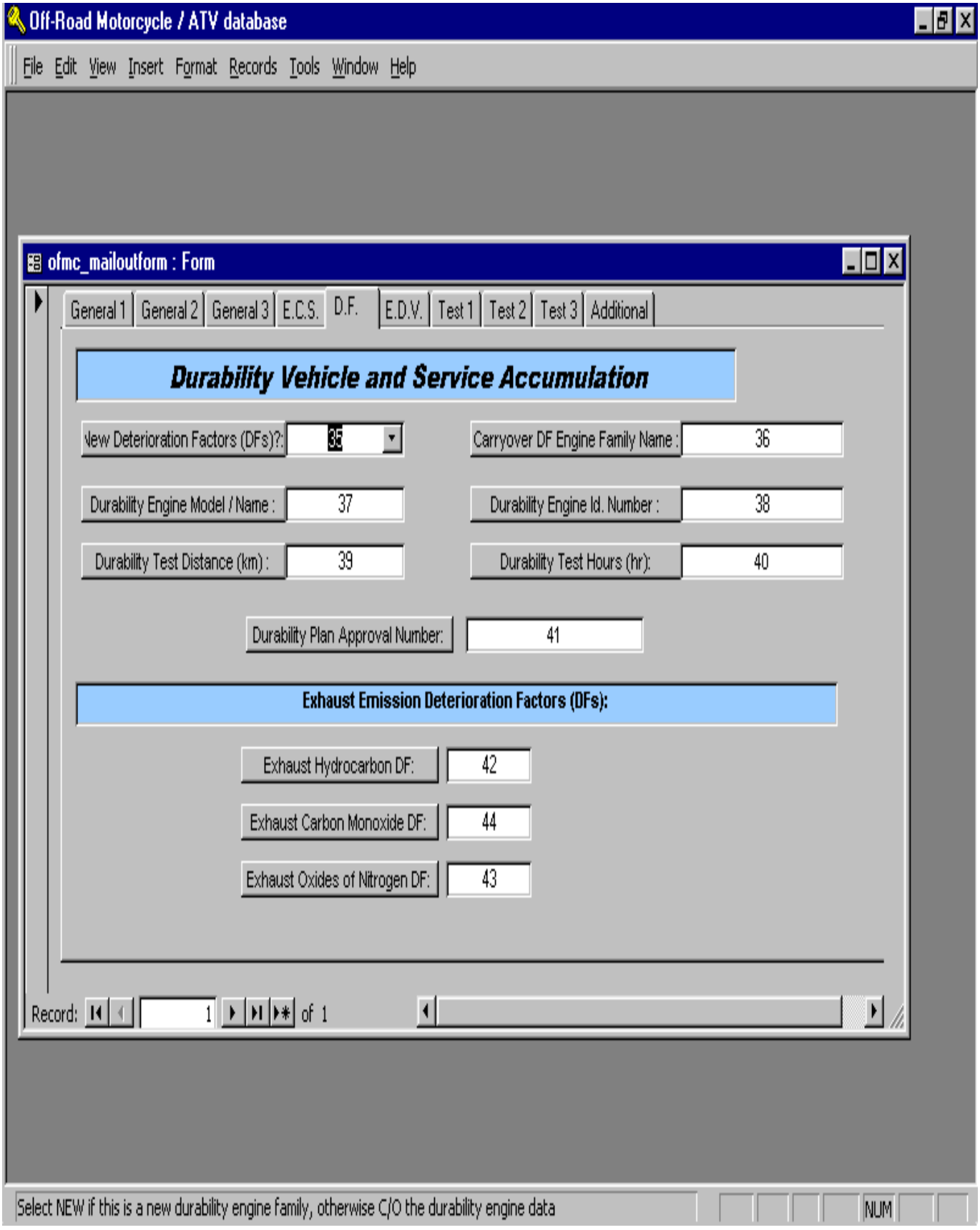
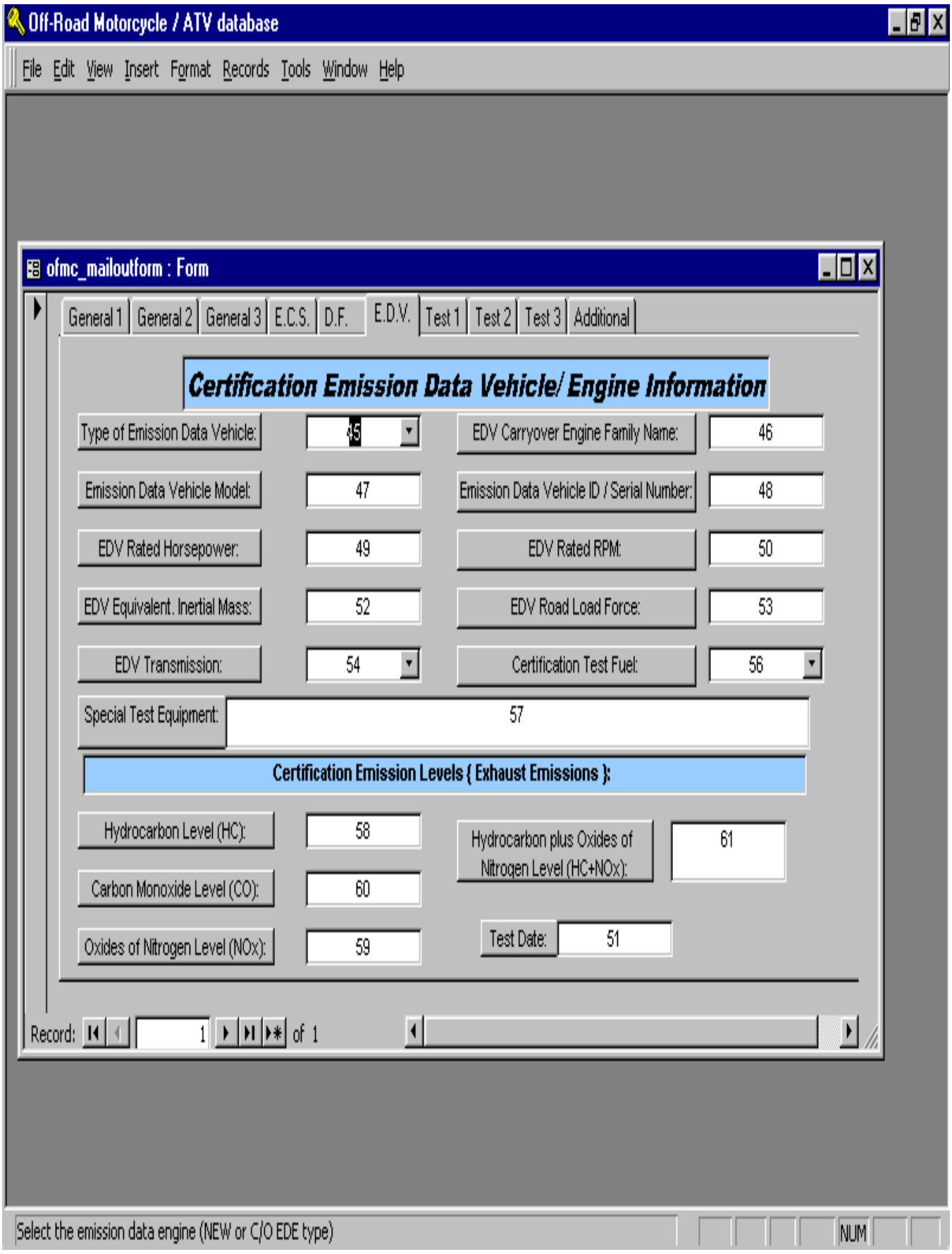
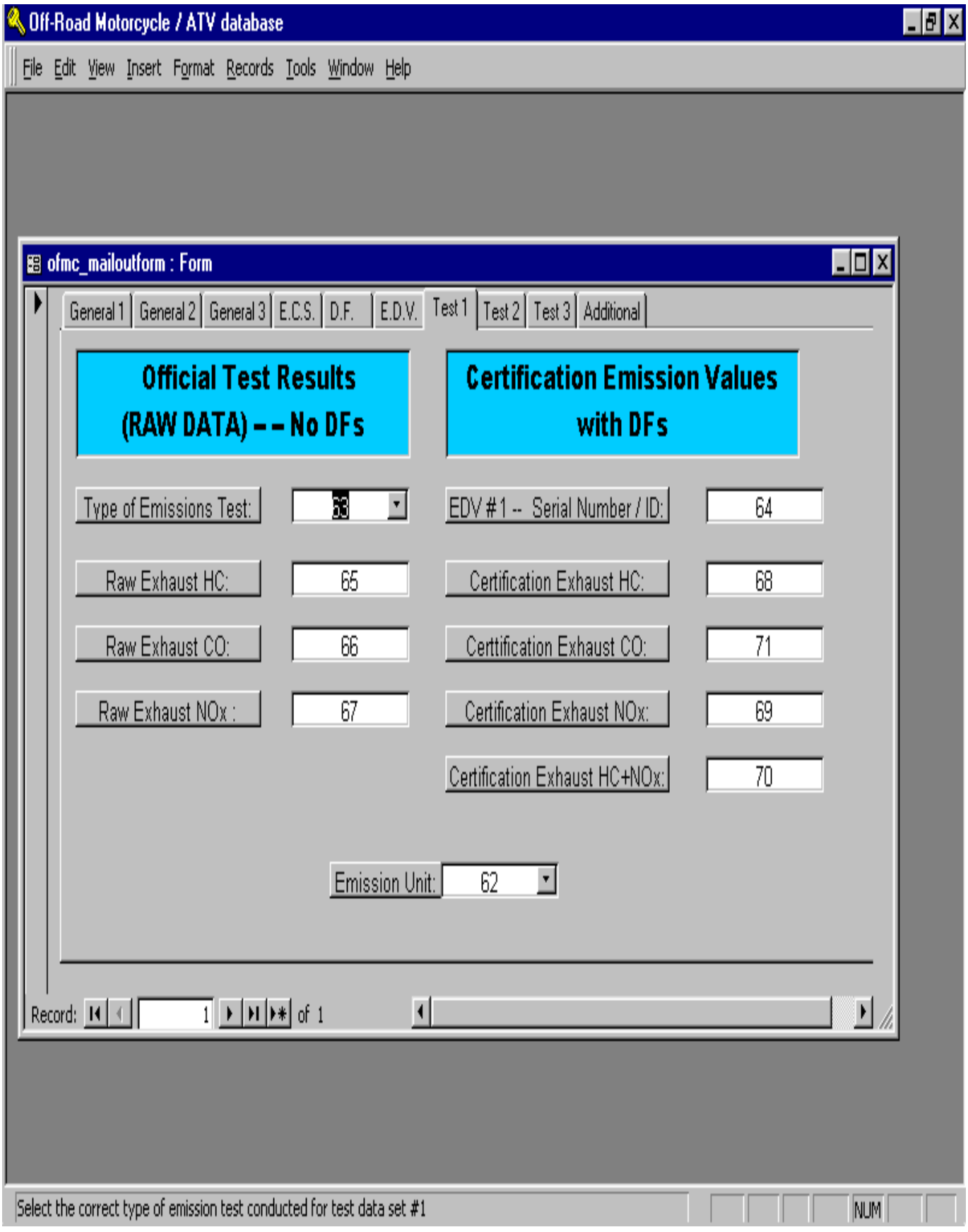
General 1
General 2
General 3
E.C.S.
D.F.
E.D.V.
Test 1
Test 2
Test 3
Additional
Compliance Method:
12
Corporate Average Standard:
13
Designated Standard Type:
14
Designated Standard:
15
Engine Displacement 1 (cc):
9
Engine Displacement 2 (cc):
10
Engine Displacement 3 (cc):
11
Record:
1
of 1
Select the method for emission compliance (either direct or corporate averaging)
NUM

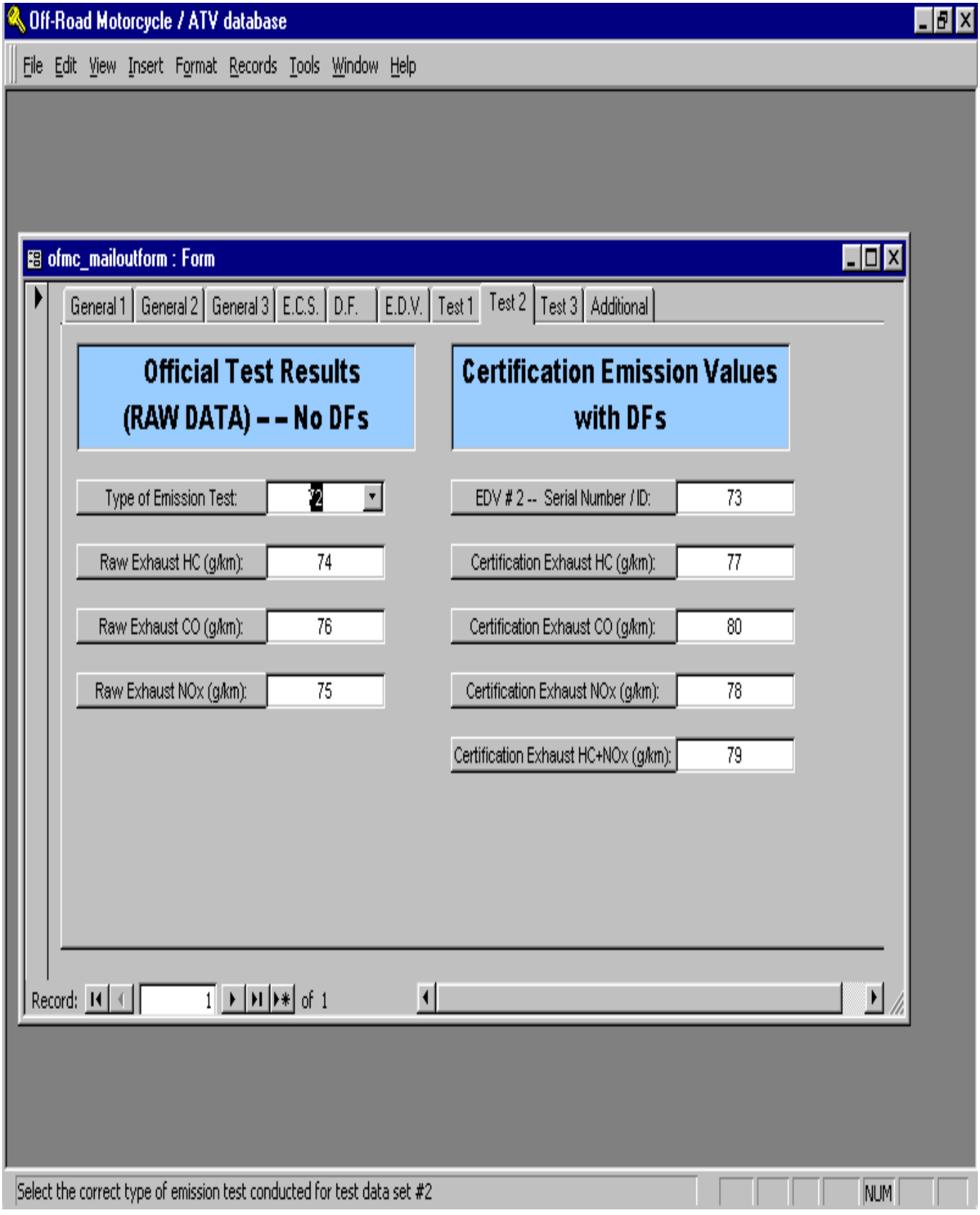

Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1
General 2
General 3
E.C.S.
D.F.
E.D.V.
Test 1
Test 2
Test 3
Additional
Engine Combustion Cycle:
16
Oil to Fuel Ration (only for2-stroke):
17
Engine Type:
18
Cooling Medium:
21
Valvetrain Type:
19
Valves per Cylinder:
20
Cylinder Configuration:
23
Number of Cylinders:
22
Highest Horsepower in Engine Family:
24
Lowest Horsepower in Engine Family:
25
List All Models in Engine Family (model/EIM in kg)==[i.e., Fastracer32/(158)]
:::EIM are for CHASSIS Products only!!
26
Record:
1
of 1
Select the combustion cycle for engines in this engine family (as applicbale)
NUM

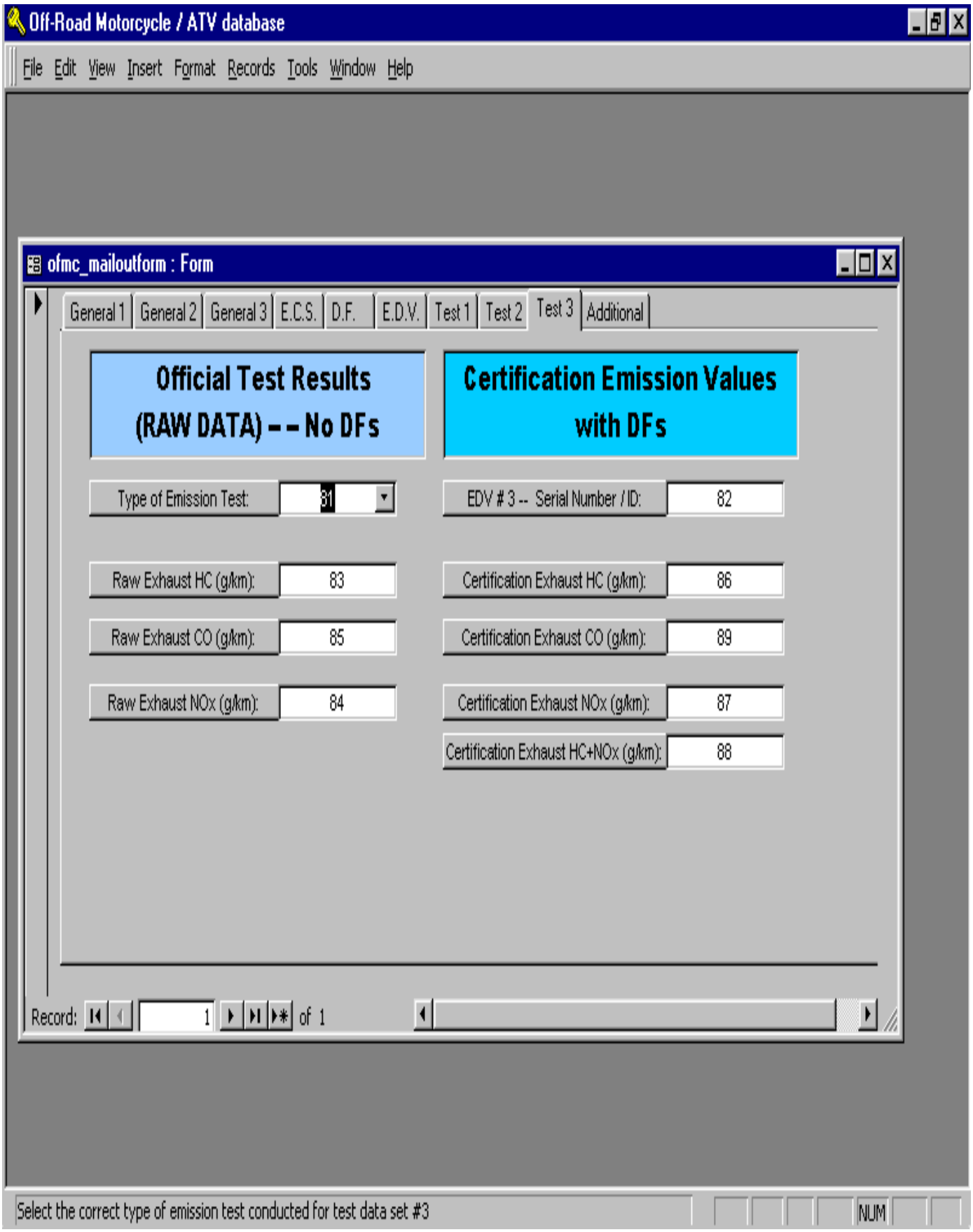

Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1
General 2
General 3
E.C.S.
D.F.
E.D.V.
Test 1
Test 2
Test 3
Additional
Emission Control System(s) Information for this Engine Family
Aftertreatment Devices:
27
Sensors (oxygen sensor, etc.):
28
Fuel System:
29
Exhaust Gas Recirculation:
30
Method of Aspiration:
31
Air Injection Reaction:
32
Other Additional ECS Device:
33
Record:
1
of 1
Select the correct catalytic converter arrangement for this engine family (as applicable)
NUM

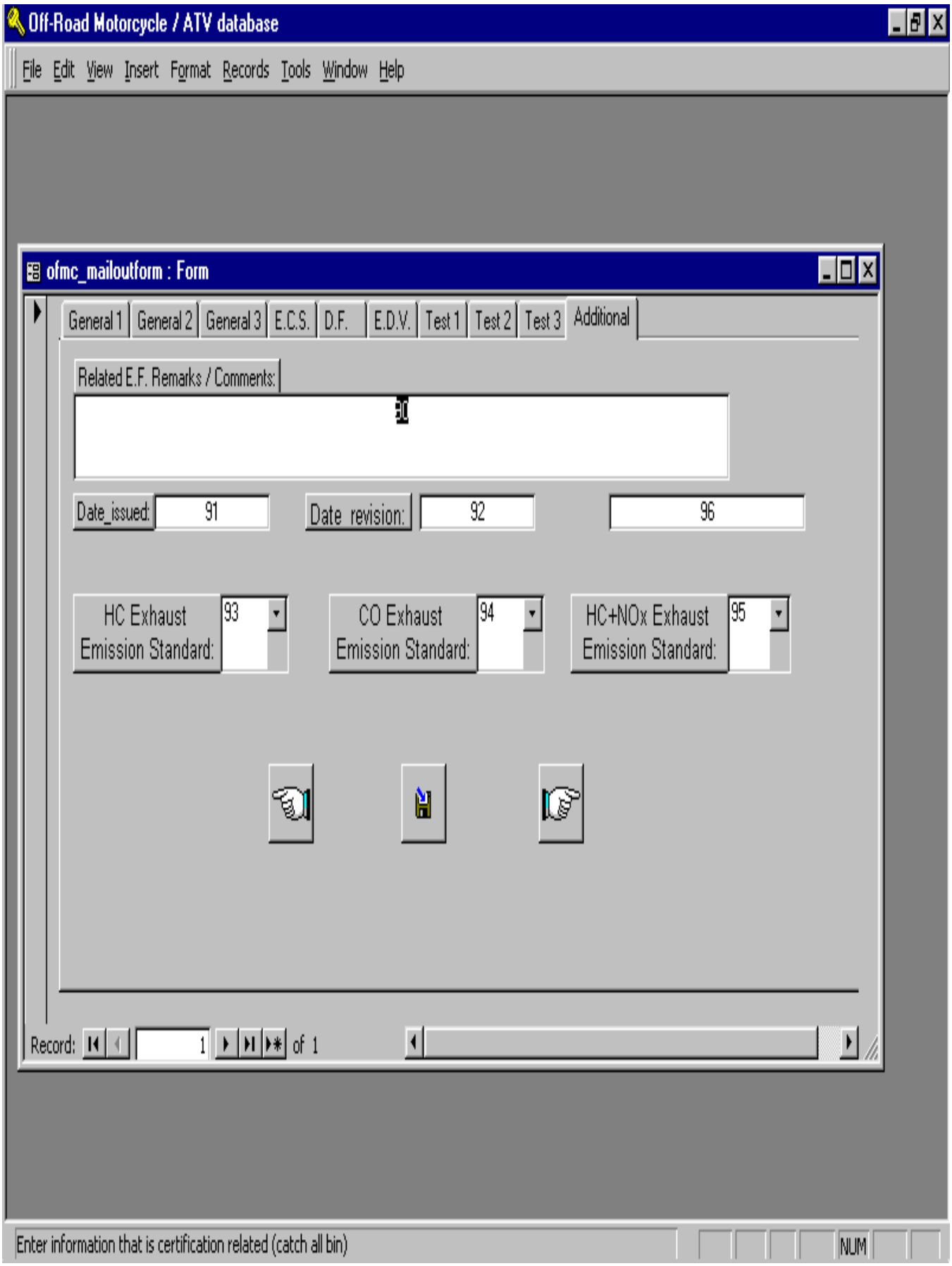

Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1 General 2 General 3 E.C.S. D.F. E.D.V. Test 1 Test 2 Test 3 Additional
Durability Vehicle and Service Accumulation
New Deterioration Factors (DFs)?:
35
Carryover DF Engine Family Name :
36
Durability Engine Model / Name :
37
Durability Engine Id. Number :
38
Durability Test Distance (km) :
39
Durability Test Hours (hr):
40
Durability Plan Approval Number:
41
Exhaust Emission Deterioration Factors (DFs):
Exhaust Hydrocarbon DF:
42
Exhaust Carbon Monoxide DF:
44
Exhaust Oxides of Nitrogen DF:
43
Record: 1 of 1
Select NEW if this is a new durability engine family, otherwise C/O the durability engine data
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1 General 2 General 3 E.C.S. D.F. E.D.V. Test 1 Test 2 Test 3 Additional
Certification Emission Data Vehicle/ Engine Information
Type of Emission Data Vehicle:
45
EDV Carryover Engine Family Name:
46
Emission Data Vehicle Model:
47
Emission Data Vehicle ID / Serial Number:
48
EDV Rated Horsepower:
49
EDV Rated RPM:
50
EDV Equivalent. Inertial Mass:
52
EDV Road Load Force:
53
EDV Transmission:
54
Certification Test Fuel:
56
Special Test Equipment:
57
Certification Emission Levels { Exhaust Emissions }:
Hydrocarbon Level (HC):
58
Hydrocarbon plus Oxides of Nitrogen Level (HC+NOx):
61
Carbon Monoxide Level (CO):
60
Oxides of Nitrogen Level (NOx):
59
Test Date:
51
Record: 1 of 1
Select the emission data engine (NEW or C/O EDE type)
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1 General 2 General 3 E.C.S. D.F. E.D.V. Test 1 Test 2 Test 3 Additional
Official Test Results (RAW DATA) -- No DFs
Certification Emission Values with DFs
Type of Emissions Test:
63
EDV #1 -- Serial Number / ID:
64
Raw Exhaust HC:
65
Certification Exhaust HC:
68
Raw Exhaust CO:
66
Certtification Exhaust CO:
71
Raw Exhaust NOx :
67
Certification Exhaust NOx:
69
Certification Exhaust HC+NOx:
70
Emission Unit:
62
Record:
1
of 1
Select the correct type of emission test conducted for test data set #1
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1 General 2 General 3 E.C.S. D.F. E.D.V. Test 1 Test 2 Test 3 Additional
Official Test Results (RAW DATA) -- No DFs
Certification Emission Values with DFs
Type of Emission Test: 2
Raw Exhaust HC (g/km): 74
Raw Exhaust CO (g/km): 76
Raw Exhaust NOx (g/km): 75
EDV # 2 -- Serial Number / ID: 73
Certification Exhaust HC (g/km): 77
Certification Exhaust CO (g/km): 80
Certification Exhaust NOx (g/km): 78
Certification Exhaust HC+NOx (g/km): 79
Record: 1 of 1
Select the correct type of emission test conducted for test data set #2
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1 General 2 General 3 E.C.S. D.F. E.D.V. Test 1 Test 2 Test 3 Additional
Official Test Results (RAW DATA) -- No DFs
Certification Emission Values with DFs
Type of Emission Test: 81
EDV # 3 -- Serial Number / ID: 82
Raw Exhaust HC (g/km): 83
Certification Exhaust HC (g/km): 86
Raw Exhaust CO (g/km): 85
Certification Exhaust CO (g/km): 89
Raw Exhaust NOx (g/km): 84
Certification Exhaust NOx (g/km): 87
Certification Exhaust HC+NOx (g/km): 88
Record: 1 of 1
Select the correct type of emission test conducted for test data set #3
NUM


Off-Road Motorcycle / ATV database
File Edit View Insert Format Records Tools Window Help
ofmc_mailoutform : Form
General 1
General 2
General 3
E.C.S.
D.F.
E.D.V.
Test 1
Test 2
Test 3
Additional
Related E.F. Remarks / Comments:
Date_issued:
91
Date revision:
92
96
HC Exhaust Emission Standard:
93
CO Exhaust Emission Standard:
94
HC+NOx Exhaust Emission Standard:
95
Record:
1
of 1
Enter information that is certification related (catch all bin)
NUM

Item No:	Name	Type	Size	Data Entry Type: Dropdown / type-in
1	model_year	Number (Long)	4	Dropdown
2	SUBMIT_CODE	Text	4	Dropdown
3	MFR_CODE	Text	50	Dropdown
4	ENG_FAM	Text	12	Type-in
5	Veh_Cat	Text	12	Dropdown
6	SALES_CODE	Text	5	Dropdown
7	PROJ_SALE	Number (Double)	8	Type-in
8	us_proj_sale	Number (Double)	8	Type-in
9	DISP_1	Number (Double)	8	Type-in
10	DISP_2	Number (Double)	8	Type-in
11	DISP_3	Number (Double)	8	Type-in
12	EM_STD_COMP	Text	3	Dropdown
13	CORP_AVG_STD	Text	4	Dropdown
14	DESIG_STD_TYPE	Text	6	Dropdown
15	DESIG_STD	Text	3	Type-in
16	ENG_COM_CYC	Text	11	Dropdown
17	OFR_2stroke	Text	2	Dropdown
18	ENG_TYPE	Text	15	Dropdown
19	valvetrain	Text	12	Dropdown
20	VALV_CYL	Text	1	Dropdown
21	COOL_MED	Text	5	Dropdown
22	CYLINDER	Text	1	Dropdown
23	CYC_CONFIG	Text	8	Dropdown
24	HI_ENG_hp	Number (Double)	8	Type-in
25	LO_ENG_hp	Number (Double)	8	Type-in
26	eng_models	Text	250	Dropdown
27	ECS_Aftertreatment_ID	Number (Long)	4	Dropdown
28	ECS_Sensor_ID	Number (Long)	4	Dropdown
29	ECS_FuelSystem_ID	Number (Long)	4	Dropdown
30	ECS_EGR_ID	Number (Long)	4	Dropdown
31	ECS_Aspiration_ID	Number (Long)	4	Dropdown
32	ECS_AIR_ID	Number (Long)	4	Dropdown
33	ECS_Others_ID	Number (Long)	4	Dropdown
34	ECS_EO_Genarate	Text	250	Type-in
35	DF_new?	Text	3	Dropdown
36	DF_EF	Text	12	Type-in
37	DF_eng_model	Text	32	Type-in
38	DF_eng_id	Text	20	Type-in
39	DF_eng_km	Number (Double)	8	Dropdown
40	DF_eng_hr	Number (Double)	8	Type-in
41	DF_approval_number	Text	15	Type-in
42	HC_DF	Number (Double)	8	Type-in
43	NOx_DF	Number (Double)	8	Type-in
44	CO_DF	Number (Double)	8	Type-in
45	CERT_EDE_type	Text	3	Dropdown
46	CERT_EDE_co	Text	12	Type-in
47	CERT_EDE_model	Text	15	Type-in
48	CERT_EDE_id	Text	20	Type-in
49	CERT_EDE_hp	Number (Double)	8	Type-in
50	CERT_EDE_rpm	Number (Long)	4	Type-in

51	CERT_EDE_date	Date/Time	8	Type-in
52	CERT_EDE_EIM	Number (Double)	8	Type-in
53	CERT_EDE_RLF	Number (Double)	8	Type-in
54	CERT_EDE_Trans	Text	2	Dropdown
55	CERT_EDE_MPG	Number (Double)	8	Type-in
56	CERT_TEST_FUEL	Text	10	Dropdown
57	CERT_TP_equip	Text	250	Type-in
58	CERT_HC_Hi	Number (Double)	8	Type-in
59	CERT_NOx_Hi	Number (Double)	8	Type-in
60	CERT_CO_Hi	Number (Double)	8	Type-in
61	CERT_HC+NOx_Hi	Number (Double)	8	Type-in
62	CERT_unit	Text	8	Dropdown
63	RawDATA_EDV_TYPE1	Text	3	Dropdown
64	RawEDV1	Text	20	Type-in
65	RawDATA_EDV_1_HC	Number (Double)	8	Type-in
66	RawDATA_EDV_1_NOx	Number (Double)	8	Type-in
67	RawDATA_EDV_1_CO	Number (Double)	8	Type-in
68	CertDATA_EDV_1_HC	Number (Double)	8	Type-in
69	CertDATA_EDV_1_NOx	Number (Double)	8	Type-in
70	CertDATA_EDV_1_HC+NOx	Number (Double)	8	Type-in
71	CertDATA_EDV_1_CO	Number (Double)	8	Type-in
72	RawDATA_EDV_TYPE2	Text	3	Dropdown
73	RawEDV2	Text	20	Type-in
74	RawDATA_EDV_2_HC	Number (Double)	8	Type-in
75	RawDATA_EDV_2_NOx	Number (Double)	8	Type-in
76	RawDATA_EDV_2_CO	Number (Double)	8	Type-in
77	CertDATA_EDV_2_HC	Number (Double)	8	Type-in
78	CertDATA_EDV_2_NOx	Number (Double)	8	Type-in
79	CertDATA_EDV_2_HC+NOx	Number (Double)	8	Type-in
80	CertDATA_EDV_2_CO	Number (Double)	8	Type-in
81	RawDATA_EDV_TYPE3	Text	3	Dropdown
82	RawEDV3	Text	20	Type-in
83	RawDATA_EDV_3_HC	Number (Double)	8	Type-in
84	RawDATA_EDV_3_NOx	Number (Double)	8	Type-in
85	RawDATA_EDV_3_CO	Number (Double)	8	Type-in
86	CertDATA_EDV_3_HC	Number (Double)	8	Type-in
87	CertDATA_EDV_3_NOx	Number (Double)	8	Type-in
88	CertDATA_EDV_3_HC+NOx	Number (Double)	8	Type-in
89	CertDATA_EDV_3_CO	Number (Double)	8	Type-in
90	Remarks_all	Text	250	Type-in
91	Date_issued	Date/Time	8	Type-in
92	Date_revision	Date/Time	8	Type-in
93	STD_CERT_HC	Text	4	Dropdown
94	STD_CERT_CO	Text	4	Dropdown
95	STD_CERT_HC+NOx	Text	4	Dropdown
96	sys_date	Date/Time	8	Type-in