Appendix 7: New Features in Version 3.4B

Here is a brief listing of some of the features new in Version 3.4B:

Accuracy:

Several refinements to the performance calculations have been made. We have also added a Preference "Use v3.4B Performance Calculations" where you can choose to use these new calculations, or revert back to the calculations very similar to used in v3.4A.

The program has added Direct Injection option for Combustion Chamber design

The program now more realistically simulates cam profiles for OHC valve trains.

The program has about 100 more example Complete Engine files.

The program has hundreds more example components, like Heads and Camshafts. GM LS Cams and Heads are now a separate category.

The program now shows "Peak Int. Sec. Tune RPM" in the Special Calculations section so you can see if the program is simulating Secondary Intake Tuning Effects.

New Roots type superchargers have been added similar to those in Engine Analyzer Pro: Modern Screw Type and Modern 2000+ Screw Type.

When reading Engine Analyzer Pro files, the program now better determines the individual port flow efficiencies when the file has a full flow curve.

The program has updated the Piston Speed recommendations in the Analyze Performance reports. AnalysisReport.txt is now done in Notepad for easier reading, printing, editing, copying, etc for the user. The Analysis Report also has an improved header for printouts.

Operation:

The program will now more reliably open your default internet browser to accessing the internet.

Fixed bug where canceling from printing to a PDF printer could cause program to stop.

The Preview when opening a Saved File now includes more info about the engine.

The method for displaying a PDF file (like the User Manual) has been updated to be more compatible with more operating systems.

The method for opening a file or page on the internet has been updated to be more compatible with more operating systems.

The program has eliminated repeating error messages, or repetitive questions about printing in landscape vs portrait orientation.

The program now keeps the Case (upper and lower) of the Graph Titles from History Log. This way what you enter will be displayed correctly on graphs.

The Graph menu items of Background Color, Grid Style, and labels for valve lift graphs to include TDC, BDC, are now properly marked with check marks for the current setting.

There is a new Preference "Use Larger Fonts on Output Grid" that lets you increase font size for calculations output data table. The Special Calculations section font has been changed to Courier New to allow for changing font size.

Many Help screens are now shown in Notepad so you can save or print them. Prior to this, they would be displayed on 1 or more separate screens without any options like printing.

Files and folders you delete are now actually sent to the Recycle Bin so they can be recovered later if you want.

Features have been added so input screens can be resized and the size and location is remembered for next time the screen is open.

You can now stop displaying the Opening Warning screen when you start the program with a check box for "Don't show this again".

Several screens have been increased in size to allow for longer file names, and to accommodate higher screen resolutions.

The program can now open newer versions of Engine Analyzer Pro files.

The program will now display all columns in History Log. Prior to this the columns of "Graph?" and "Graph Title" were sometimes hidden.

The program now allows Graph File Names up to 30 characters long.

A bug was fixed where the software would check for reasonable lash settings even if the cam was Hydraulic prior to calculations.

Now the list of Example components is not updated if the criteria box for searching is blank. For example, if you have requested to look for Duration less than some amount, but the text box for the amount is blank, the example list is not updated. This can make the process of searching for examples more efficient and quicker.

The program now explains why you can not open very old files from Engine Analyzer Pro, rather than just not opening them.

The Program now checks the configuration file after it is written and makes a backup copy. If a problem is sensed in the configuration file the next time the program starts, the backup configuration file is used.

The program has a bug fixed which avoids problems opening History Log on VERY high resolution screens.

Changed Preference "Main Screen Enlarged to Fill Screen" to "Main Screen Fonts Increase w Screen Size". Now you can also resize and reposition the main screen and it is remembered the next time you start the program. If you set this Preference to No, then the fonts will stay the original size, but the picture area will be large. If you set this Preference to Yes, then the fonts will grow in size, but the picture area will stay relatively small.

The program has a new Preference "Allow Input Screens to be Resized" to let you resize and reposition the component screens, like Short Block, Heads, etc. The size and position is remembered each time you open a screen, and the next time you start the program. Set this to No (the default) and the screens stay relatively small, stay in their default positions, and can be faster loading.

The default Font Size on the main screen is now larger to show up better on higher resolution screens, even without changing any Preferences.

The program has removed 2 Preferences: "Beginner User" setting and the option to not "Show Open/Close Events in Cam Specs". Most users wanted Experienced User features and the program to show the Cam Events.

There is now a "Make Microsoft Excel File" option for creating ASCII files from the calculated results.

Optimize Feature, Plus Version Only:

Several changes to the Optimize feature have been made, so that more accurate answers can be found for more possible combinations. For example, the program now assumes the optimum cam durations are larger if the RPM range for the calculations is high.

An Optimize option of "Only Check Cam Specs close to the original Specs" has been added. If the program's standard "Optimize" feature can not find optimum Cam Specs, turn on this option and the program may better find them.

When Optimizing, a display of "Valve Toss" or "Lifter Pump Up" for the combinations found has been added. This can help explain why an Optimum combination could not be found.

When Optimizing both Cam Duration and Lift, the lifts have been reduced some to be more realistic for typical cams.

If Optimize can not find better performance than the engine's original settings, the info message gives suggestions for changes to be made for it to work better at optimizing.

gure B.01 Four (4) New Preferences in v3.4B
Engine Analyzer Plus v3.4 B - Performance Trends [2011 Ford 5.4L Shelby]
le (engine) Calc HP Preferences Help Reg To: Kevin Gert
Click on Preferences to obtain screen below.
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Use Larger Fonts in Output Grid Larger



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e Analyzer Plus v3.4 II - Performance Trends -1.20	Itt Fund 5.4L Shelliv 1						— Set to	o No	1.12
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own special in this menu or to Prick an Example as to special strain of the special of the special sp	Valve Diameter, in Flow Efficiency, 2	1.22 Use Table 49.3 Ctd	ed: Single Plenum-	EFI manifold ttle Body(s)				-G'a	JU -
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Figure B.05 New "Modern" Supercharger Des	signs
Supercharger Specs	
Design R. Notes TVS 2.3L Type Roots Supercharger	Roots Supercharger Type Use Specs Below Design Modern 2000+ Screw Type w Average Seal Volume/F Screw Type w Average Seals Screw Type w Tight Seals Modern Screw Type w Leaky Seals
Turbocharger Type Use Specs Below Peak Efficiency 75% Very Good CEM at Peak Efficiency	Belt Ratio Modern Screw Type w Average Seals Intercoole Modern Screw Type w Tight Seals Modern 2000+ Screw Type w Leaky Seals Modern 2000+ Screw Type w Average Seals Modern 2000+ Screw Type w Average Seals Modern 2000+ Screw Type w Tight Seals Modern 2000+ Screw Type w Tight Seals Centrifugal Supercharger

-Igure B.06 New Chevy LS Categories for Exa Catagories of Cam Examples for Picking	ample Components
Categories (groups) of Performance Trends' Examples Typical Cams American Motors 6 Cyl American Motors V-8 Buick V-6 Buick V-8 Buick - Other Engines Cadillac Small Block Chevy Comp Cams Small Block Chevy (2003 catalog) Crane Small Block Chevy (2003 catalog) Big Block Chevy Comp Cams Big Block Chevy (2003 catalog) Crane Big Block Chevy (2003 catalog) Crane Big Block Chevy (2003 catalog) Crane Big Block Chevy (2003 catalog) Chevy 4 Cyl Chevy V-6 Other Chevy V-8s Chevy Corvair Chevy Small Block V-8 LS Comp Cams All Monar (2003 catalog)	Categories (groups) of Examples Added by User dennis Kevin DynoSim ROVER DynoSim Buick ramp kevin2 kevin2Plus std fix New Category Name
	Add New Category Name to List
Use Category Cancel	Rename Chosen Category
Tip: Click on a catagory in either section to highlight it, then lick on the "lice Catagory" butten, or just Dauble Slick on the	Delete Chosen Category
catagory to pick in one step. (Catagories are groups of	See page 118 in manual for details.
examples, like a group of Chevy heads, not individual examples.)	Use Category Cancel

gure B.07 Chevy LS Example	Heads						
New label sl	nowing how man	v exam	oles fit the sea	arch criteria			
Examples: 75 of 75 parts meet your requirements.							
all Block Chevy LS Heads	Chamber	CB	Lavout	Valve Dia	Port Dia	Port CCs	Port Ler
R 210cc LS1 Enforcer Cylinder Head (exh)	Pent Roof		1vlv/1prt 1vlv/1prt	2.02	1.72	209.4	5.5
R 245cc LS1 Cylinder Head	Pent Roof		1vlv/1prt	2.165	1.95	244.7	5
(exh)			1vlv/1prt	1.6			
R 260cc LS3 Cylinder Head	Pent Roof		1vlv/1prt 1vlv/1prt	2.165	2.01	260.0	5
R CHEVY LS3 260 CC	Typ Wedge	11.42	1vlv/1pit	2.165	1.89	260.1	5.6585
(exh)			1vlv/1prt	1.6			
R CHEVY LS3 Rectangle Port Mongoose 260 CC, 69 CC combustion chamber	Typ Wedge	11.42	1vlv/1prt	2.165	1.89	260.1	5.6585
(exn) B CHEVY LSX 1680-245CC LABGE BOBE CNC POBTED	Tun Wedge		1viv/1prt 1viv/1prt	2.165	1.83	243.9	5 6585
(exh)	Typ wodgo		1vlv/1pit	1.6	1.00	240.0	0.0000
R CHEVY LSx Cathedral Port Mongoose 210 CC	Typ Wedge	11.42	1vlv/1prt	2.165	1.70	210.5	5.6585
(exh) D. CLEDALL St. Cathering Data Managers 215, CC	Too Mendoo	11.40	1vlv/1prt	1.6	1.70	21E E	E CEOE
(exh)	Typ wedge	11.42	1vlv/1prt	2.165	1.72	215.5	3,6383
R CHEVY LSx Cathedral Port Mongoose 230 CC Large Bore 62 cc combustion	Typ Wedge	11.42	1vlv/1prt	2.165	1.78	230.7	5.6585
(exh)			1vlv/1prt	1.6			
orefine the list, choose 'Only These' for 'Show' and make your settings to find E R (compression ratio) may be blank or inaccurate	e because it also depen	d on pist	on parameters.				
o refine the list, choose 'Driv these' for 'Show' and make your settings to find E R (compression ration may be blank or inaccurate	Show All Example	d on pist	on parameters.				
o refine the list, choose 'Only these' for 'Show' and make your settings to find E R (compression ration may be blank or inaccurate Examples: 3 of 75 parts meet your requirements.	because it also dependent	d on pist	on parameters.				
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o refine the list, choose 'Only these' for 'Show' and make your settings to find E R (compression rational be blank or inaccurate Examples: 3 of 75 parts meet your requirements. Hall Block Chevy LS Heads	Chamber	d on pist	Layout	Valve Dia	Port Dia	Port CCs	Port Len
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o refine the list, choose 'Only these' for 'Show' and make your settings to find E R (compression rational back or inaccurate Examples: 3 of 75 parts meet your requirements. all Block Chevy LS Heads evrolet 317 6.0L Truck Castings (exh) evrolet 706 5.3L Truck Castings (exh) 1706 5.3L Truck Castings (exh)	Chamber Typ Wedge Typ Wedge Typ Wedge	CR	bn parameters. bn parameters.	2 1.55 1.89 1.55 1.89 1.55 1.89 1.55	Port Dia 1.71 1.60 1.60	Port CCs 199.5 197.7 197.7	5.3 6. 6.
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