



What's New in AAA?

Version 3.12.4

January 2008

AAA 3.12 contains various enhancements and revisions to version 3.11 as well as bug fixes. This version has over 280,000 lines of code and over 4,400 unique input/output variables.

Section 1 shows the enhancements and modifications made to AAA. Major enhancements include new modules and calculations. The second section contains bug fixes.

The AAA Manual describes the installation procedure and all modules. The manual is available in pdf format on the installation CD.

1. Enhancements and Modifications

Differences between AAA 3.11 and AAA 3.12 are:

1. More GOTO buttons have been added to variables.
2. More feedback to the user when a problem occurs at startup of AAA.
3. Help expanded.
4. More interim variables are shown in the output.
5. Databases have been cleaned up and can be accessed faster.
6. Installation is simplified.
7. A new module 'Thrust from Drag' has been added to Propulsion.
8. Flying wing calculation have been expanded.
9. Trimmed Lift calculations have been expanded.

2. Bug Fixes

This section lists bugs found in AAA 3.11 and earlier versions which are fixed in AAA 3.12.

2.1 Weight

1. Propeller weight and hence total powerplant weight is not calculated for a ducted fan.

2.2 Aerodynamics

1. Power effects could not be selected for a canard airplane.
2. Drooped aileron pitching moment increase is not calculated.
3. $\Delta\varepsilon_{h\delta_f}$ and $\Delta\varepsilon_{v\delta_f}$ are not calculated for drooped ailerons if working on a new file.
4. $\Delta C_{L0_{h\delta_f}}$ is not calculated for drooped ailerons.
5. C_{D0_n} is incorrectly calculated for nacelles with $t/D > 0.8$, where t = distance from fuselage and D = maximum nacelle diameter.
6. i_c is not shown as an input in the wing downwash gradient due to canard module.

2.3 Performance

No Changes

2.4 Geometry

1. For a new file, fuel center of gravity is not calculated in Class II Fuel Volume.
2. Elevator geometry does not export properly in AeroPack.
3. Scaling of nacelles, tailbooms, stores and floats do not work when only one is selected.
4. Thickness ratio is not calculated for a vertical tail.
5. Fuselage curves are incorrect depending on coordinate system chosen.
6. Class II Trailing Edge Drag show variables along with drooped aileron variables even if flaps are not defined.
7. Class II Gear drag shows only one main gear row header even if there are two main gears defined for retractable and fixed gear combination together.
8. $X_{ac_{py}}$ is not calculated if inputs are entered in a new file.
9. $Z_{ac_{py}}$ is incorrectly calculated for pylons with +/- 90 degree dihedral angle.
10. Elevon parameters are not shown if ' C_m given α ' module is selected for a flying wing.

2.5 Propulsion

No Changes

2.6 Stability and Control

1. For a new file the rolling moment due to roll rate is not calculated for a twin vertical tail configuration.
2. Take-off rotation does not apply to flying wings.
3. Trimmed lift for flying wings gives an empty error message.
4. Trimmed Lift is not enabled for flying wing configurations.

2.7 Dynamics

No Changes

2.8 Loads

$C_{L_{\max(-)}}$ does not accept positive values.

2.9 Structures

No Changes

2.10 Cost

No Changes

2.11 General

1. Missing variable labels are added.
2. Node locked WIBU-BOX gives error messages, for WIBU-BOXes with serial numbers starting with 11-.