

# APP 5.10 Release Notes July 2011



**ALR**  
Aerospace

**DAR**corporation

**RUAG**  
Aerospace Defence Technology

**APP 5 - Aircraft Performance Program**  
***Release Notes July 2011***

---



Information in this document is subject to change without notice. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose without the express written permission of ALR.

© 1995 – 2011

Aerospace Project Development Group, ALR  
All rights reserved

Microsoft is a registered trademark, Windows is a trademark of Microsoft Corporation in the USA and other countries. Other brands and products are trademarked or have registered the trademarks of their respective holders.

The ALR License Agreement included with the product, specifies the permitted and prohibited uses of the product. Any unauthorized reproduction or use of the product or breach of terms and conditions of the License Agreement is forbidden. The ALR License Agreement sets forth the only warranties applicable to the product and the documentation. All warranty disclaimers and exclusions set forth therein apply to the information contained in this document.

- ALR  
Aerospace Project Development Group  
Gotthardstr. 52  
CH-8002 Zürich  
Switzerland  
[www.alr-aerospace.ch](http://www.alr-aerospace.ch)
- DARcorporation  
Design · Analysis · Research  
1140 Wakarusa Drive, Suite 500  
Lawrence, Kansas 66049  
USA  
[www.darcorp.com](http://www.darcorp.com)
- RUAG Aerospace  
Center Aerodynamics  
CH-6032 Emmen  
Switzerland  
[www.ruag.com](http://www.ruag.com)

Printed in 2011

## Content

<b>Content</b> .....	<b>3</b>
<b>1 General Information</b> .....	<b>4</b>
1.1 Overview.....	4
1.1.1 Current Version and Editions .....	4
1.1.2 Releases .....	5
1.2 Support.....	6
1.2.1 Getting additional information .....	6
1.2.2 How to contact us .....	6
1.2.3 Miscellaneous support .....	6
<b>2 Version release notes</b> .....	<b>7</b>
2.1 Fixes, Upgrades, Updates and Work done .....	7
2.2 Known Problems, proposed improvements .....	9

## 1 General Information

### 1.1 Overview

#### 1.1.1 Current Version and Editions

---

The following release notes document the upgrades and changes made to the newest version of the Aircraft Performance Program, APP 5.10.

There are three editions of the current version:

- Professional Edition: Maximum number of functionalities available over a broad range of installation preferences (e.g. stand alone, network)
- Trial Edition: Full calculation functionalities available based on hardwired input data set without the capability to save. It is only available as a stand alone version.
- Light Edition: Downscaled version of the Professional Edition. It has a smaller essential number of functionalities available for use over a broad range of installation preferences (e.g. stand alone, network)

The first release of APP5.10 Professional Edition of has been issued in May 2004. The first APP5.10 Trial Edition has been released in June 2005. The first APP 5.10 Light Edition has been released in July 2008.

The current release of the Professional Edition is R3.0 and has been issued in July 2011. The current release of the Trial Edition is R2.1 and has been issued in May 2006. The current release of the Light Edition is R2.3 and has been issued in July 2008.

**Release Notes July 2011**

**1.1.2 Releases**

The following release notes document the upgrades and changes made to the newest version of the Aircraft Performance Program, APP software.

<b>Name/Version/Edition</b>	<b>Release Software</b>	<b>Protection</b>	<b>Description</b>	<b>Date</b>
APP 5.10 Professional	1.1	HASP key by Aladdin	Professional edition of the APP5 program	May 2004
APP 5.10 Professional	1.2	HASP key by Aladdin	Professional edition of the APP5 program	October 2004
APP 5.10 Trial	1.2	None	Trial edition of the APP5 program	June 2005
APP 5.10 Professional	2.1	HASP key by Aladdin	Professional edition of the APP5 program	May 2006
APP 5.10 Trial	2.1	None	Trial edition of the APP5 program	May 2006
APP 5.10 Professional	2.2	HASP key by Aladdin	Professional edition of the APP5 program	December 2006
APP 5.10 Professional	2.3	HASP key by Aladdin and WIBUKey by WIBU	Professional edition of the APP5 program	May 2007
APP 5.10 Light	2.3	HASP key by Aladdin and WIBUKey by WIBU	Light edition of the APP5 program	July 2008
APP 5.10 Professional	2.4	WIBUKey by WIBU	Professional edition of the APP5 program	July 2010
APP 5.10 Professional	3.0	WIBUKey by WIBU	Professional edition of the APP5 program	July 2011

## 1.2 Support

### 1.2.1 Getting additional information

---

Either ALR or DARcorporation can help you with any problem you may encounter installing or using the APP5.10 Professional, Light or Trial Edition.

### 1.2.2 How to contact us

---

ALR

Postal Address:

Arbeitsgruppe für Luft- und Raumfahrt

Gotthardstrasse 52

CH-8002 Zurich

Switzerland

Phone: +41 (0)44 202 93 88

Fax: +41 (0)44 202 24 00

Email: [alr@alr-aerospace.ch](mailto:alr@alr-aerospace.ch)

[www.alr-aerospace.ch](http://www.alr-aerospace.ch)

DARcorporation

Postal Address:

DARcorporation

1140 Wakarusa Drive, Suite 500

Lawrence, Kansas 66049

USA

Phone: + (785) 832-0434

Fax: + (785) 832-0524

Email: [info@darcorp.com](mailto:info@darcorp.com)

[www.darcorp.com](http://www.darcorp.com)

### 1.2.3 Miscellaneous support

---

For any additional questions regarding the applied software protection systems the vendors websites are as follows:

HASP Software protection:

[www.aladdin.de](http://www.aladdin.de)

WIBUKey Software protection:

[www.wibu.de](http://www.wibu.de)

Please download any driver update for the software protection keys from these websites.

## 2 Version release notes

### 2.1 Fixes, Upgrades, Updates and Work done

The releases and the implemented updates, fixes and added features having been generated up to July 2010 are listed in the table below:

Releases/ Fixes/ Updates	Version/ Release	Description
<u>New Edition</u>	5.10 R1.1 Professional	Version 5.10 R1.1 Professional Edition generated and released
<u>Release Upgrade</u>	5.10 R1.2 Professional	Release Version 5.10 R1.2 generated
Driver Update	R1.2	Newest HASP-Software protection key implemented
Fix	R1.2	Problems with the sheets/chart calculations & display solved
Fix	R1.2	Definition/handling bug in the generation and display of sheet and chart elements fixed.
General	R1.2	Addaptation to enhance Stall speed prediction accuracy.
General	R1.2	Addaptation in the numerical und display integration of the used units (SI, imperial). Force and speed units edited.
General	R1.2	Minor GUI –addaptions
Fix	R1.2	Correction of Problems with the Thrust-File-Display caused by data type inconsistencies
General	R1.2	Restucturing of the calculation source code. Calculation routines are now located directly in executable.
<u>New Edition</u>	5.10 R1.2 Trial	Trial Edition for 5.10 R1.2 generated and released
<u>Release Upgrade</u>	5.10 R2.1 Professional	Release Version 5.10 R2.1 generated
General	R2.1	Landing Roll Segment Added
General	R2.1	Restructuring of program structure (executable, libraries)
<u>Release Upgrade</u>	5.10 R2.1 Trial	Trial Edition for 5.10 R2.1 generated and released
<u>Release Upgrade</u>	5.10 R2.2 Professional	Release Version 5.10 R2.2 generated
Driver Update	R2.2	New HASP driver implemented
General	R2.2	Minor code-internal addaptation in the atmosphere calculations and unit conversion.



Release Notes July 2011

<u>Releases/ Fixes/ Updates</u>	<u>Version/ Release</u>	<u>Description</u>
<u>Release Upgrade</u>	5.10 R2.3 Professional	Release 5.10 R2.3 generated and released
Driver Update	R2.3	WIBUKey protection implemented
General	R2.3	'Save as' always active
General	R2.3	Minor code-internal addaptation in the general flight physics calculations as CAS prediction.
General	R2.3	Implementation of function key F5 activation to run calculations.
General	R2.3	Added funtionality in the mission optimizer calcularions to allow to set fuel mass at end of mission instead of fuel percentage at end of mission as the target parameter.
General	R2.3	Minor changes in the GUI regarding window dimensions and resize
General	R2.3	Addaptation in the optimized climb and cruise segments
General	R2.3	Error messages adapted
General	R2.3	CLo label for input of CL values at minimum drag in the drag pollar changed into DCL.
Fix	R2.3	Landing Roll Segment corrected
<u>New Edition</u>	5.10 R2.3 Light	Light Edition for 5.10 R2.3 generated and released
<u>Release Upgrade</u>	5.10 R2.4 Professional	Release 5.10 R2.4 generated and released
General	R2.4	General revision of the code
Fix	R2.4	SEP and G-Envelope chart initialization corrected
General	R2.4	Improvements in the mission calculation logic
General	R2.4	Added help menu items for manual and technical reference pdfs
Fix	R2.4	Corrected output of drag values in mission calculations related to landing gear drag
General	R2.4	"Copy Project from File" now also accepts mission files
<u>Release Upgrade</u>	5.10 R3.0 Professional	Release 5.10 R3.0 generated and released
General	R3.0	"Copy Project from File" shows both mission (*.apm) and project (*.app) files
General	R3.0	New output variables for the components CD0, CDi and CDs of the drag coefficient
General	R3.0	Added output of CO <sub>2</sub> emissions to mission calculation
General	R3.0	Added chart in aerodynamics file that shows the total drag polars
General	R3.0	Improvements in the optimal climb segments
Fix	R3.0	Better error messag for optimal climb segments
General	R3.0	Changed default power setting for the ground operations segment to 0%
General	R3.0	Reduced default time-step for descent segment

**Release Notes July 2011**

**2.2 Known Problems, proposed improvements**

Please feel free to inform us if you encounter any bugs or have an improvement to propose to us.

<b>Proposed Fix or Improvement</b>		<b>Description</b>
<u>New Edition/Improvement</u>		Proposal to release APP as a DLL package to allow to be used by other programs or to allow automated batch-like jobs
<u>Improvements</u>		Proposal to extend point performance functions by adding additional performance parameters and respective diagram calculations
<u>Improvements</u>		Proposal to add detailed take-off and landing performance calculation
<u>Improvements</u>		Proposal to add energy based optimal climb segments, for both subsonic and high performance supersonic climb
<u>Improvements</u>		Support for propeller based propulsion