

# Agusta Bell AB-205

## of Hellenic Army Aviation for FS2K2



### GENERAL

The Agusta Bell AB-205 is one of the most popular and effective multi purpose helicopter ever built. This helicopter has served in many countries armed forces and military or police services for many years, setting the performance standards for all helicopters. Since the start of production, over 10000 of these flying “chopper” workhorses have been built. Now days, over 5000 of these reliable Bell products are still flying in more than 45 countries around the world.

First of all I'd like to thank **Jordan Moore & Lynn Rogers** for giving me the permission to repaint his Agusta Bell AB-205 original model. My special thanks to **Alex Amorianos** (real world AB-205 pilot) for his great help on this project. Thank you too, for downloading this “double” helicopter repaint.

This “double” repaint version (camouflaged and olive drab pattern) had been specifically created as an honor to the 2<sup>nd</sup> TEAS (Army Aviation Batalion) of Hellenic Army Aviation based in Megara, Greece with a transport / troop airborne / utility role.

### CREDITS

- Original helicopter model was made by Mr **Jordan Moore** [jordan@hovercontrol.com](mailto:jordan@hovercontrol.com) and Mr **Lynn Rogers** [woodworth@alaskalife.net](mailto:woodworth@alaskalife.net)
- Hellenic Army Aviation “double” repaint, panel design, FS install / flight manual & screenshots by **Nick Karatzides** [Nick\\_Karatzides@hotmail.com](mailto:Nick_Karatzides@hotmail.com) OR [Pathfinder@mail.gr](mailto:Pathfinder@mail.gr).
- Aircraft infos & data by Bell and Hellenic Army.

### INSTALLATION

- Create a folder into C:\Program Files\Microsoft Games\FS2002\Aircraft and name it “Agusta Bell AB-205 Hellenic Army Aviation”
- Open the “Agusta Bell effects” folder, then COPY & PASTE its contents into destination **C:\Program Files\Microsoft Games\FS2002\Effects**. Overwrite any existing FS2K2 “fx” files with the same name if it is needed so. This will **NOT** harm your FS2002 system for other aircrafts! If you do not want to overwrite the existing FS2K2 “fx” files, backup them first.
- Open the “Agusta Bell gauges” folder, then COPY & PASTE its contents into destination **C:\Program Files\Microsoft Games\FS2002\Gauges**. Overwrite any existing FS2K2 “gau” files with the same name if it is needed so. This will **NOT** harm your FS2002 system for other aircrafts! If you do not want to overwrite the existing FS2K2 “gau” files, backup them first.
- Finally, COPY & PASTE all the other folders & files into **C:\Program Files\Microsoft Games\FS2002\Aircraft\ Agusta Bell AB-205 Hellenic Army Aviation**.

Anyway, after a successful installation, you are now OK to start your FS2K2 and go flying. To select this aircraft, you'll find it under the manufacturer's name of “Agusta Bell” into the “Select Aircraft” menu of FS2K2.

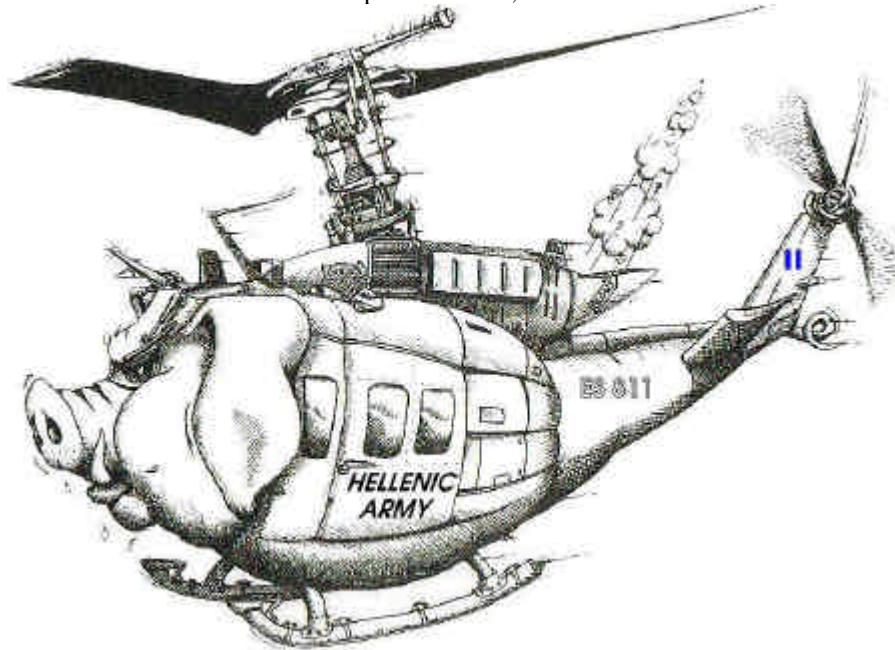
## RELATED LINKS

[http://www.army.gr/html/GR\\_Army/dieuthinseis/Das/index.html](http://www.army.gr/html/GR_Army/dieuthinseis/Das/index.html)  
<http://www.futura-dtp.dk/Flysiden/Fly/Italien/AB205.htm>  
<http://koti.welho.com/msolanak/ab205sar.html>  
<http://www.futura-dtp.dk/Flysiden/Fly/Italien/AB205gr.htm>  
<http://www.bellhelicopter.textron.com>

## KNOWN BUGS

There are known “bug” issues with this model, and I’ll explain them to you, as best I can:

- Sorry, but the only way to open the side sliding doors, is to fully shut down the engine. So, if you want to have a look in the helicopter’s interior, land the heli first and shut down the engine.



## NOTES

- This Hellenic Army’s Aviation Agusta Bell AB-205 multi purpose helicopter contained in this [AB-205\\_HA\\_v1.zip](#) package is a fully compatible helicopter with FS2K2.
- This helicopter package for FS is not meant to be artistically brilliant, but to give a faithful as possible rendition of what it is like to fly this helicopter. It is also frame rate friendly.
- Hellenic Army’s Aviation Agusta Bell AB-205 repaint archive is a **STRICTLY FREWARE ONLY!** NO COMMERCIAL GAIN BY ANYONE COULD BE ACCEPTABLE BY ME. The Agusta Bell AB-205 helicopter “double” repaint package should **NOT** UNDER ANY CIRCUMSTANCES be uploaded or displayed on payware FS sites or **ANY** of its associated subsidiaries. If it is, or available on any website offering this archive in return for money, any appropriate legal action will be undertaken using all the appropriate International copyright laws.
- The repainter of this package is in no way liable for any damage it may cause from incorrect use (however unlikely that it may be).
- If you have any questions & comments, bug reports etc, please feel free to send to my E-mail address [Nick\\_Karatzides@hotmail.com](mailto:Nick_Karatzides@hotmail.com) OR [Pathfinder@mail.gr](mailto:Pathfinder@mail.gr).
- This “double” Hellenic Army Aviation Agusta Bell AB-205 repaint (original model and paint by Jordan Moore and Lynn Rogers) should **NOT** be uploaded to **ANY** InterNet site without the repainter’s written confirmation.
- Finally, this [AB-205\\_HA\\_v1.zip](#) package should **NOT** under **ANY** circumstances be uploaded in [FSPlanet.com](http://FSPlanet.com), because this site is **NOT** freeware and the site moderator named Ferdy Serena, **makes money** and **NEVER** ask any permission before uploading any file. Please report at me at once if you find this zip file in [FSPlanet.com](http://FSPlanet.com) file library.

## HELICOPTER DATA & SPECIFICATIONS



### **Agusta Bell AB-205 specifications**

Role:	Troop airborne transport / utility helicopter
Manufacturer:	Aeronautiche Giovanni Agusta under license from the Bell helicopter company
Engine:	1 x Lycoming T-53-L-13 single turbine
Power:	1400 shp
Propeller:	2 blade constant speed diameter 48 ft 3 in
Length:	41 ft 5 in / 12.61 m
Height:	13 ft 7 in / 4.15 m
Weight:	5082 lbs / 2305 kg empty 5500 lbs / 2495 kg with engine oil without fuel 9500 lbs / 4309 kg maximum gross TOW 8500 lbs / 3856 kg (long range mode)
Fuel weight:	224 US gal / 1523 lbs / 691 kg (main tanks) 300 US gal / 2040 lbs / 925 kg (auxiliary tanks)
Maximum useful load weight:	4418 lbs / 2004 kg
Maximum indicated airspeed:	124 KIAS / 230 km/h
Approach airspeed:	65 KIAS / 120 km/h
Average cruise true airspeed:	110 KIAS / 204 km/h
Maximum range:	300 nm / 556 km
Endurance:	3.5 hrs with internal aux tanks
Maximum climb ratio:	2500 ft/min / 12.7 m/sec
Service ceiling:	15000 ft / 4572 m
Hover ceiling:	10900 ft / 3322 m
Armament:	Provision for hardpoints under doors
Crew:	2 pilots and 1 flying engineer / gunner
G limits:	+1.5 Gs positive / -0.5 Gs negative

## COCKPIT PANEL & CONSOLES

This [AB-205\\_HA\\_v1.zip](#) package you've downloaded from the InterNet, also contains a panel which had been modified by photos and diagrams of the real one. Some of the FS2K2 virtual pilot's actions on this panel, effects on this Agusta Bell AB-205 helicopter model in FS2K2, just like as real pilot's actions on the real aviation. The panel consists by three (3) screens. To activate / de-activate each one of the following screens you must press **Shift + 2** or **Shift + 3** or **Shift + 4**. Additionally you can use one of the following buttons on the panel to activate / de-activate each one of the screens.

Button A



Button B



Button C



- The **Main** contains the main panel with most of the flight instruments,
- The **Collective** (FS default) switch ON / OFF by pressing **Shift + 2** or by pressing the button **A**
- The **GPS** (FS default) switch ON / OFF by pressing **Shift + 3** or by pressing the button **B**
- The **Radio stack** contains the communication & navigation frequency panel, seen by pressing **Shift + 4** or by pressing the button **C**.

## PANEL INDEX

Please read very carefully the following index in order to understand the panel's functions.



- |  |   |
|--|---|
| 01) Magnetic compass                   | 16) Analog vertical speed indicator         |
| 02) OMI marker indicator lamp          | 17) Clock                                   |
| 03) Engine ang fuel tank indications   | 18) Master BAT & light switches             |
| 04) Fuel shut switch                   | 19) Magnetic compass                        |
| 05) Dual tachometer                    | 20) COM1 display frequencies                |
| 06) Transmission oil temp indicator    | 21) COM2 display frequencies                |
| 07) Gas producer temperature indicator | 22) ADF digital display frequencies         |
| 08) Exhaust gas temperature indicator  | 23) Transponder digital display frequencies |
| 09) Analog airspeed indicator          | 24) NAV1 display frequencies                |
| 10) Analog DME indicator               | 25) NAV2 display frequencies                |
| 11) Analog Turn & side slip indicator  | 26) DME digital display indications         |
| 12) Attitude direction indicator       | 27) Main lights switches on collective      |
| 13) Analog radio magnetic indicator    | 28) Governor switch                         |
| 14) Analog localizer & range indicator | 29) Throttle ring                           |
| 15) Analog altimeter indicator         | 30) GPS main display                        |

## TAKE OFF

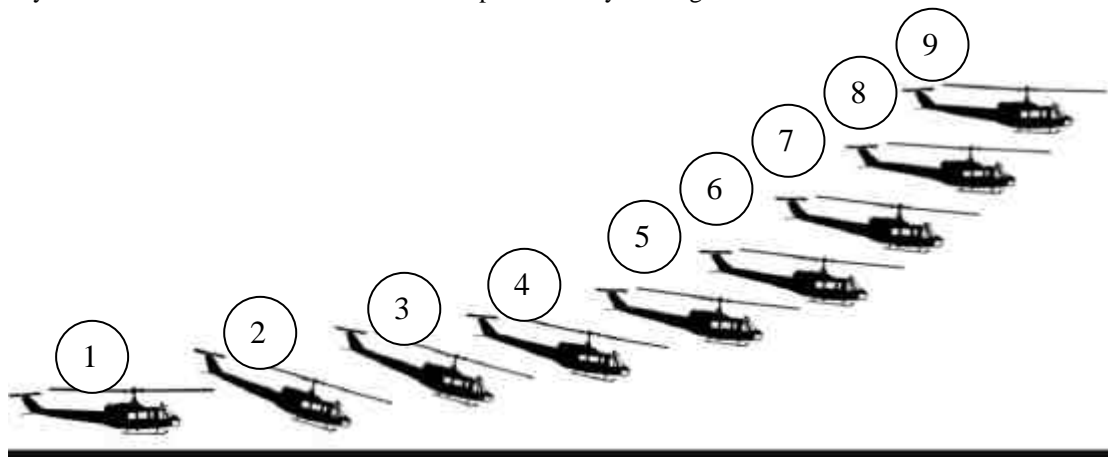
To complete a succesfull take off is not an easy job. You'll need much "training" which means that you are gonna crash your heli in FS too many times before start acting like a heli pilot!!! Helicopter flying has nothing to do with aircraft's principles of flight. As much you crash your helicopter in your FS, the more stable flight you'll be able to complete in the future.

Set the collective lever as required and let the engine to reply. Approaching **95%** RPM (when fully fuel loaded ) or about **88%** RPM (when the minimum fuel capacity is installed) is the right time to feel the helicopter "raising" up to take off attitude. Try to hover at very low altitute before proceeding further. While hovering you'll feel the helicopter turning right, so you'll need to correct this rotation by pushing the left rudder as inside as it is needed.

After that, lower the nose **SMOOTHLY** down to start gaining velocity. Maintain this attitude and allow the helicopter to fly off the ground, which will normally will happen by increasing the power on throttle. Set the aircraft's nose up, as low as it is neccesary to establish and maintain a possitive climb rate and an increasing forward heading velocity. The best angle to succed that is between **-5** and **-10** degrees. When your airspeed reaches high enough, pitch the nose as high as needed to maintaint the desireable flight. You can control your vertical speed by both pitching and seting the throttle as it is needed as well. At the following screenshot there are two different methods to help you take off.

- **First take off method**

Try to understand this take off method and operate it on your Flight Simulator.

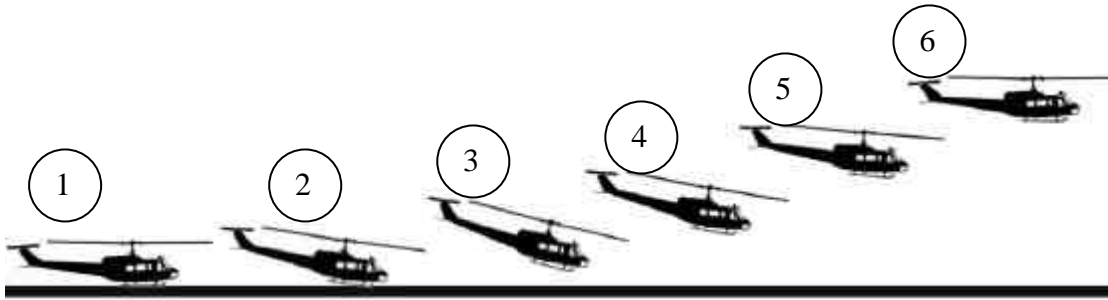


- (1) Hover at normal hovering altitute.
- (2), (3) & (4) Ease cyclic forward increase collective pitch to prevent settling.
- (5), (6) & (7) As airspeed approaches normal climbspeed, raise nose to climbing attitute.
- (8) & (9) Continue climb at normal climb speed.



- **Second take off method**

Try to understand this take off method and operate it on your Flight Simulator.



- (1) & (2) Adjust power less than hovering power. Cyclic slightly forward of hovering position for gradual acceleration.
- (3), At transition lift, ease cyclic back slightly to become airborne.
- (4), Maintain altitude at 10 feet or less to build to climb airspeed.
- (5) & (6) Adjust to climb altitude.

## CLIMBING

Power settings between **95%** and **100%** RPM will provide a comfortable climb rates at **90 KIAS** to **100 KIAS** for intermediate altitude level-offs. If condition require a maximum thrust climb, maintain a climb indication until approaching the recommended climb airspeed and then adjust pitch to maintain climb schedule. The best recommended climb rate (**1600 ft / min**) is succeeded when maintain a **-5 degree** climb and **85 KIAS** to **95 KIAS** speed.

## LANDING

Completing a successful and safe landing is a very hard thing to do if you are still a rookie heli pilot. You'll need much "training" which means that you'll crash your heli in FS too many times before your first safe landing. Helicopter landing methods has nothing to do with aircraft's way. As much you crash your helicopter in your FS while trying to land, the more stable, safe and completed landings you'll be able to operate in the future. So, don't be disappointed each time you crash on the ground.

Normal helicopter landing procedures should be used to land the Agusta Bell AB-205 in FS2K2 environment too. After you'll be established at the main heading line towards the desirable runway or spot, maintain a descend glide path. Keep your airspeed between **60 KIAS** and **70 KIAS** while attempting to "enter" at the landing procedure. To increase / decrease the aircraft's airspeed, set your helicopter's nose (pitching) as required. Do not over-react by pulling the stick back too much, because control stick "kicks" may effect control losing. You can increase / decrease the aircraft's sink rate by setting the throttle and collective at the "right place" so you can "drag" your helicopter velocity on the Y axis.

To complete a safe landing attempt you'll have to touch the ground with **as low sink rate as possible** and with **as low airspeed as possible**. Maximum landing sink rate for a loaded helicopter is **800 ft/min** (red line on the VSI gauge as shown at the right screenshot) for normal landings and **600 ft/min** for crosswind landings. The maximum landing speed is **10 KIAS**. Try to touch the ground with **0 KIAS** (zero) so you will not damage your landing skids. At the following page there are two different screenshots showing landing methods to help you understand how to land your helicopter. Personally, I prefer the second method.

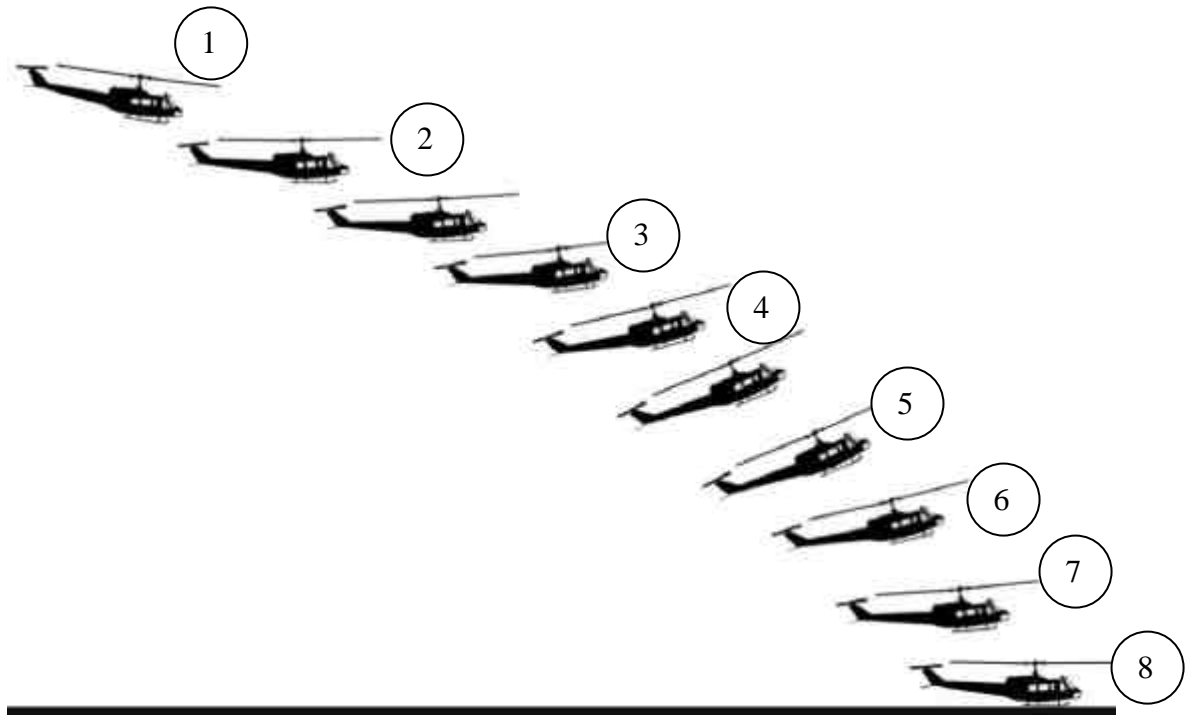


### WARNING

You will **NEVER – NEVER – NEVER** make a safe landing if you try to touchdown when your sinkrate is more than **-800 ft/min** or your airspeed is above **10 KIAS**.

- **First landing method**

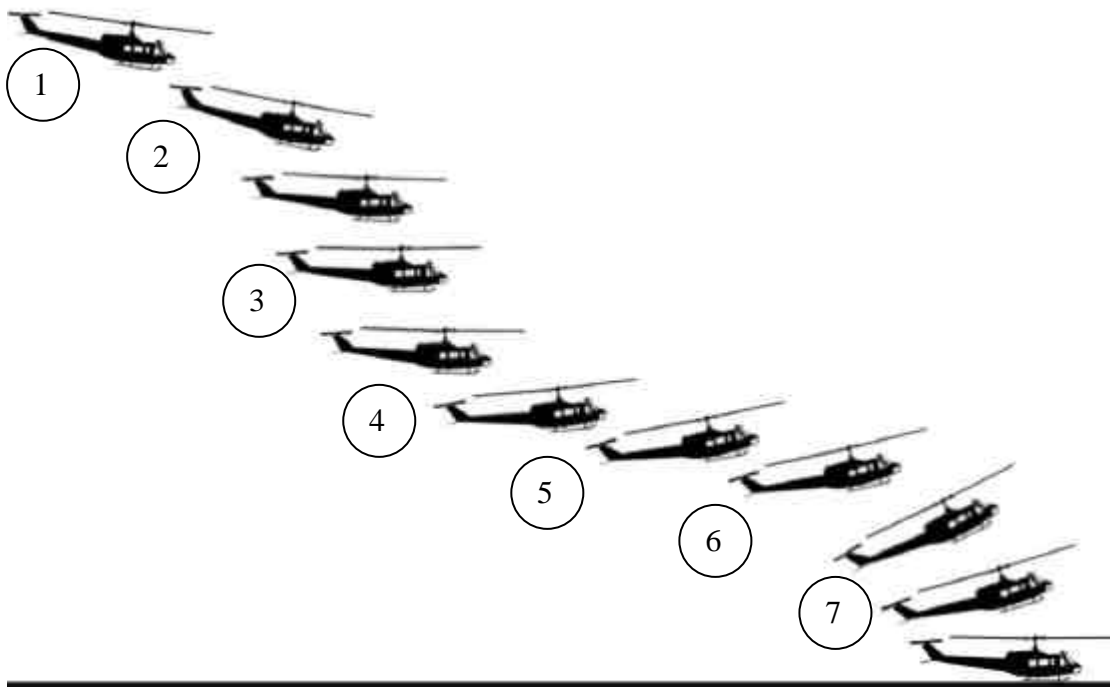
Try to understand this landing method and operate it on your Flight Simulator.



- (1) Cruising airspeed, safe altitude.
- (2) Decrease collective slight back cyclic.
- (3), & (4) Continue down collective and back cyclic to decrease groundspeed.
- (5), & (6) Forward cyclic up collective.
- (7), & (8) Settle to a normal hover and touchdown.

- **First landing method**

Try to understand this landing method and operate it on your Flight Simulator.



- (1), & (2) Bottom collective, close throttle to split kneedles.
- (3), & (4) Maintain autorotation airspeed.
- (5), Flare to slow to desired groundspeed
- (6), & (7) Forward cyclic to level skids, increase collective to slow descent and cushion landing.



### ENGINES SHUT DOWN

After landing to the desired spot on the ground, follow the “Engine shut down” procedure. Retract the **Throttle (29)** on the collective from **OPEN** back to **CLSD** position by clicking your mouse’s left button on it as required, as it is shown at the righ screenshot.

After that, click your mouse’s left button on the **Fuel shut switch (4)** to **UP / OFF**. Now you’ve just “close” engine’s fuel valves and normally the engine’s indications on the panel are “dying” and the rotor is rotating slower and slower. After you hear the engine completely shuts down you must switch the **Master BAT & light swithes (18)** to **OFF** position.



### ENGINES & SYSTEMS LIMITATION

- Maximum speed limit (glide, dive or smooth air): 130 KIAS
- Service ceiling: Helicopter can climb at 17000 ft, but the control is quite difficult above 15000 ft.
- Load factor limit: +1.5 G / -0.5 G
- Landing skid system: The best VSI while landing is 10 ft/min and 0 KIAS. Never exceed 800 ft/min and 10 KIAS when landing.



# Hellenic Army AB-205 photos











