Agusta Bell AB-47G
of Hellenic Army Aviation for FS2K2


GENERAL

Designed in 1943 as a light multi-purpose-helicopter the Bell 47 became the most popular helicopter of the 50ties. During the Korean war it became famous by its role in rescue missions. The "47" was very popular up to the late 70ies. Well known as "the mosquito" because its bubble shaped canopy, was the very first helicopter which entered in Hellenic Armed Forces service, back in the 60ies. These helicopters used to operate as liasons, or as forward artilery observers and also as trainers. They were painted with the olive drab standard NATO pattern or even blackcoloured. This repaint version has been specifically created as an honor to the 23rd Company of 3rd Battalion of Hellenic Army Aviation based in the historical airport of Sedes near Thessaloniki, Greece with an utility role.

Many thanks to Jean Marie Mermaz for giving me the permission to repaint his wonderful Agusta Bell AB-47G2 original model. Thank you too, for downloading this helicopter repaint.

CREDITS

- Original GMAX model & primary panel desigh, by **Jean Marie Mermaz** jm_mmz@wanadoo.fr
- Hellenic Army Aviation repaint, panel modification, flight / instalation manual & screenshots by repainter **Nick Karatzides** Nick_Karatzides@hotmail.com **OR** Pathfinder@mail.gr.
- Aircraft infos & data by Bell and Hellenic Air Force museum.

INSTALATION

- Create a folder into C:\Program Files\Microsoft Games\FS2002\Aircraft and name it "Agusta Bell AB-47G 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-47G Hellenic Army Aviation.

Anyway, after a successfull 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.

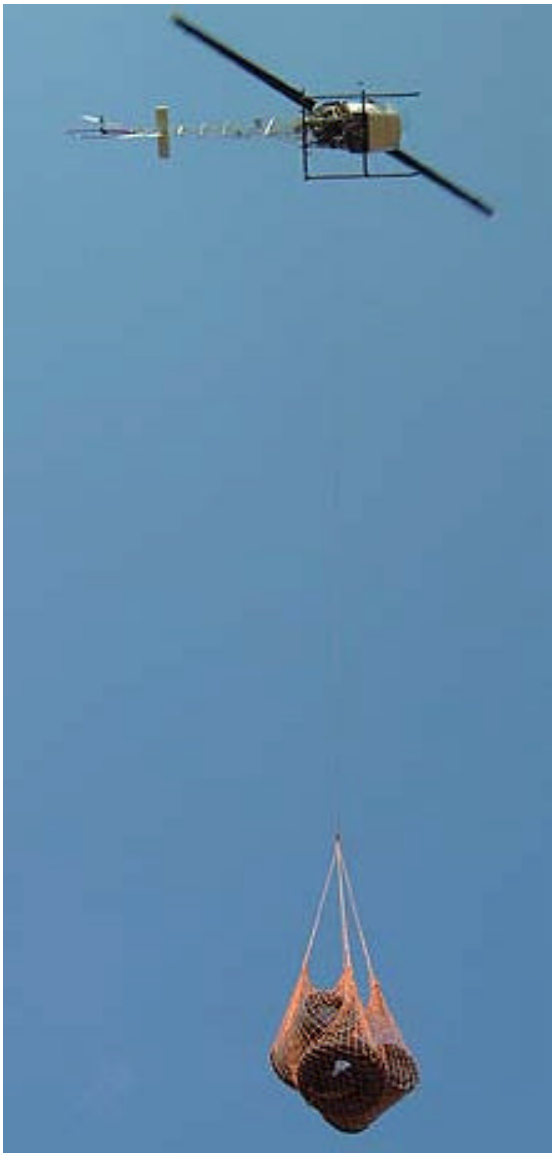
RELATED LINKS

http://www.army.gr/html/GR_Army/dieuthinseis/Das/index.html
http://www.bell47helicopterassociation.org/
http://www.bell47asap.com/
http://www.luftfahrtmuseum.com/htmi/itf/be47.htm
http://cellmath.med.utoronto.ca/B47/Bell_47.html
http://www.eexi.gr/spa/hafmuseum/ekthemata.htm

KNOWN BUGS

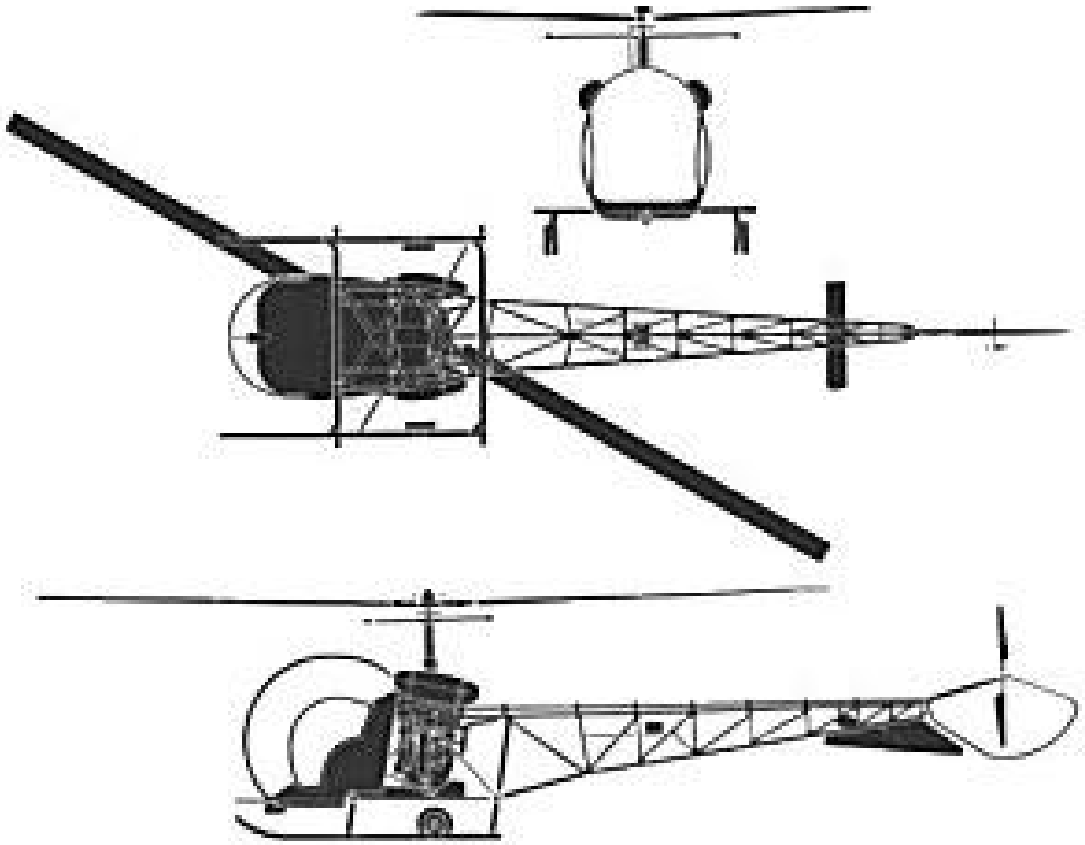
There are not any known “bug” issues with this model, so you can enjoy your flying with no problems.

NOTES



- This Hellenic Army’s Aviation Agusta Bell AB-47G helicopter contained in this AB-47G_HA_v1.zip package is a fully compatible aircraft 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.
- This Hellenic Army’s Aviation helicopter AB-47G repaint archive is a **STRICTLY FREEWARE ONLY!** NO COMMERCIAL GAIN BY ANYONE COULD BE ACCEPTABLE BY ME. The Agusta Bell AB-47G helicopter Hellenic Army’s 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 or comments, bug reports etc, please feel free to send to my e-mail Nick_Karatzides@hotmail.com **OR** Pathfinder@mail.gr.
- This Hellenic Army’s Aviation Agusta Bell AB-47G helicopter repaint (original GMAX model and panel by Jean Marie Mermaz) should **NOT** **be uploaded to ANY InterNet site without the repainter’s written comfirmation**.
- Finaly, this AB-47G_HA_v1.zip package should **NOT** under **ANY** circumstances be uploaded in FSPlanet.com, because this site is **NOT** freeware and the site moderator named Ferdy Serena, makes money and never ask any permision before uploading any file. Please report at me at once if you find this zip file in FSPlanet.com file library.

HELICOPTER DATA & SPECIFICATIONS



Agusta Bell AB-47G specifications

Role:	Utility multy purpose military helicopter
Manufacturer:	Agusta under license from the Bell USA
Engine:	1 x Lycoming VO-435-F1A, flat 6 pistoned
Power:	250 Hp
Propeller:	2 blade constant speed diameter 11.32 m
Main rotor disc area:	100.8 sq m
Fuselage length:	30 ft 5 in / 9.63 m
Overal length:	43 ft 6 in / 13.30 m
Height:	9 ft 3 in / 2.83 m
Weight:	1892 lbs / 858 kg empty
	2954 lbs / 1340 kg maximum gross TOW
Fuel weight:	91 US gal / 619 lbs / 281 kg
Maximum indicated airspeed:	130 KIAS / 241 km/h
Approach airspeed:	65 KIAS / 120 km/h
Average cruise true airspeed:	110 KIAS / 204 km/h
Maximum range:	274 nm / 507 km
Endurance:	2.6 hrs aprox
Maximum climb ratio:	2850 ft/min / 14.5 m/sec
Service ceiling:	19000 ft / 5791 m
Hover ceiling:	12700 ft / 3871 m
Armament:	None
Crew:	1 pilot + 2 passengers (max weight 565 lbs)
G limits:	+2.2 Gs possitive / -0.8 Gs negative

COCKPIT PANEL & CONSOLES

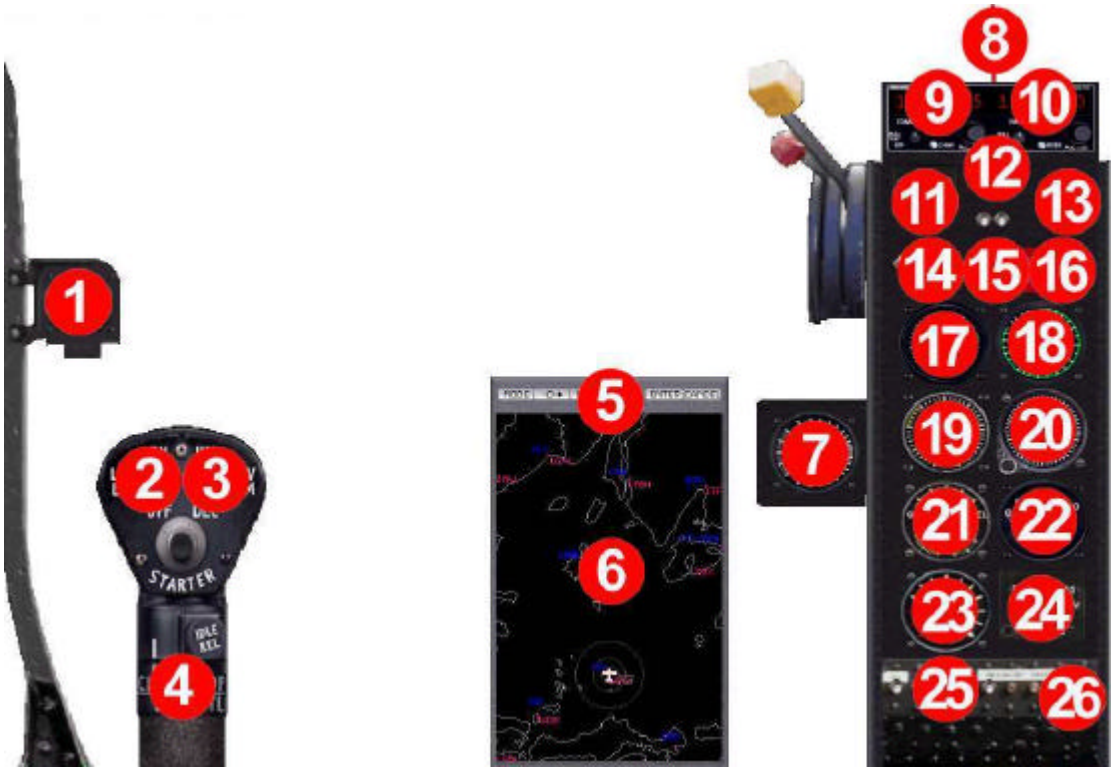
This AB-47G_HA_v1.zip package you've downloaded from the InterNet, also contains a panel whitch had been modified by photos and diagrams of the real one. Some of the FS2K2 virtual pilot's actions on this panel, effects on this Agusta Bell AB-47G helicopter model in FS2K2, just like as real pilot's actions on the real aviation. The panel consists by three (3) screens. To activate / de-activate each one of the follo-wing screens you must press Shift + 2 or Shift + 3 or Shift + 4. Additionaly you can use one of the following buttons on the panel to activate / de-activate some of these screens.

Button A Button B


- The Main panel contains the front part of the cockpit 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 Wind indicating string showing the wind direction, switch ON / OFF by pressing Shift + 4.

PANEL INDEX

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



01) Magnetic compass
02) Landing lights switch
03) Governor switch
04) Throtle on collective
05) GPS control swiches
06) GPS main screen
07) Vertical speed indicator
08) Wind direction string
09) Communication frequency switches
10) Navigation frequency switches
11) Air temperature indicator
12) Side slip indicator
13) Fuel tank selector
14) Battery & avionics switches
15) Fuel warning indicating lamp
16) Master BAT & light switches
17) Engine RPM indicator
18) Airspeed indicator
19) Manifold pressure indicator
20) Altimeter indicator
21) Engine oil & fuel temperature indicator
22) Engine cylinders temperature indicator
23) Fuel tank content indicator
24) Ampere meter indicator
25) Main lights switches
26) Utility panel activating buttons

TAKE OFF

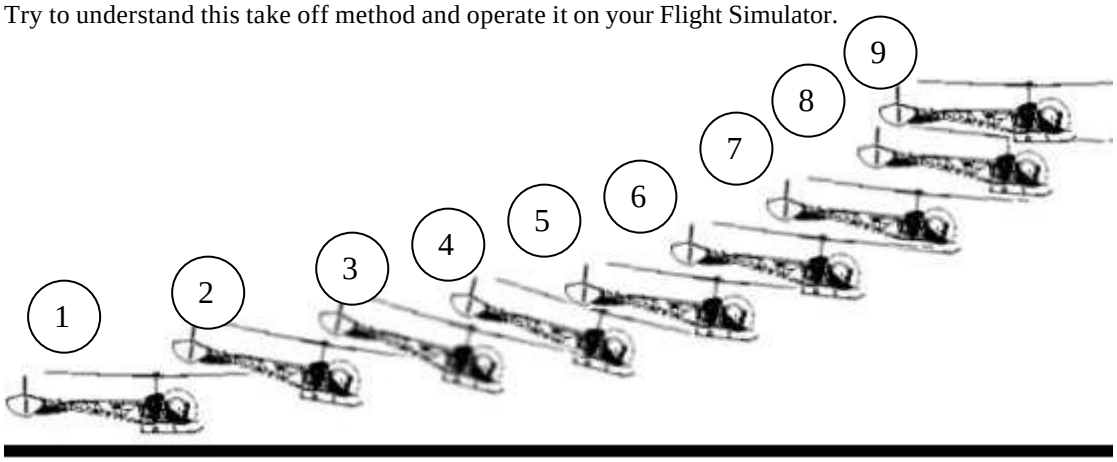
To complete a succesfull take off is not an easy job. You'll need much "training" which means that you are gonna crash your heli in FS too many times before start acting like a heli pilot!!! Helicopter flying has nothing to do with aircraft's principles of flight. As much you crash your helicopter in 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 **84%** 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 proceding 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 neccesery 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**

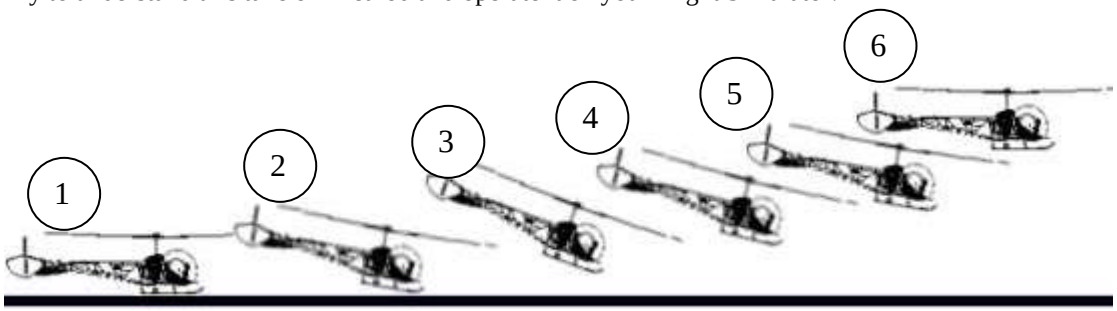
Try to understand this take off method and operate it on your Flight Simulator.



(1) Hover at normal hovering altitute.
(2), **(3)** & **(4)** Ease cyclic forward increase collective pitch to prevent settling.
(5), **(6)** & **(7)** As airspeed aproaches 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 accelaration.
(3), At transition lift, ease cyclic back slightly to become airborne.
(4), Maintain altitute at 10 feet or less to build to climb airspeed.
(5) & **(6)** Adjust to climb altitute.

CLIMBING

Power settings between **95%** and **100%** RPM will provide comfortable climb rate between **80 KIAS** to **90 KIAS** for intermediate altitute level-offs. If condition require a maximum thrust climb, maintain a climb indication untill approaching the recomended climb airspeed and then adjust pitch to maintain climb schedule. The best recomended climb rate (**2100 ft / min**) is succeded when maintain a **-5 degree** climb and **80 KIAS** to **85 KIAS** speed.

LANDING

Completing a succesfull 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 disapointed each time you crash on the ground.

Normal helicopter landing procedures should be used to land your Agusta Bell AB-47G in FS2K2 enviroment 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 **45 KIAS** and **55 KIAS** while attempting to "enter" at the landing procedure. To increase or descrease the helicopter's airspeed, set your helicopter's nose (piching) as required. Do not over-react by pulling the stick back too much, because control stick "kicks" may effect control loosing. You can increase / descrease the helicopter's sink rate by seting the throttle and collective at the "right place" so you can "drag" your helicopter velocity on the Y axis.

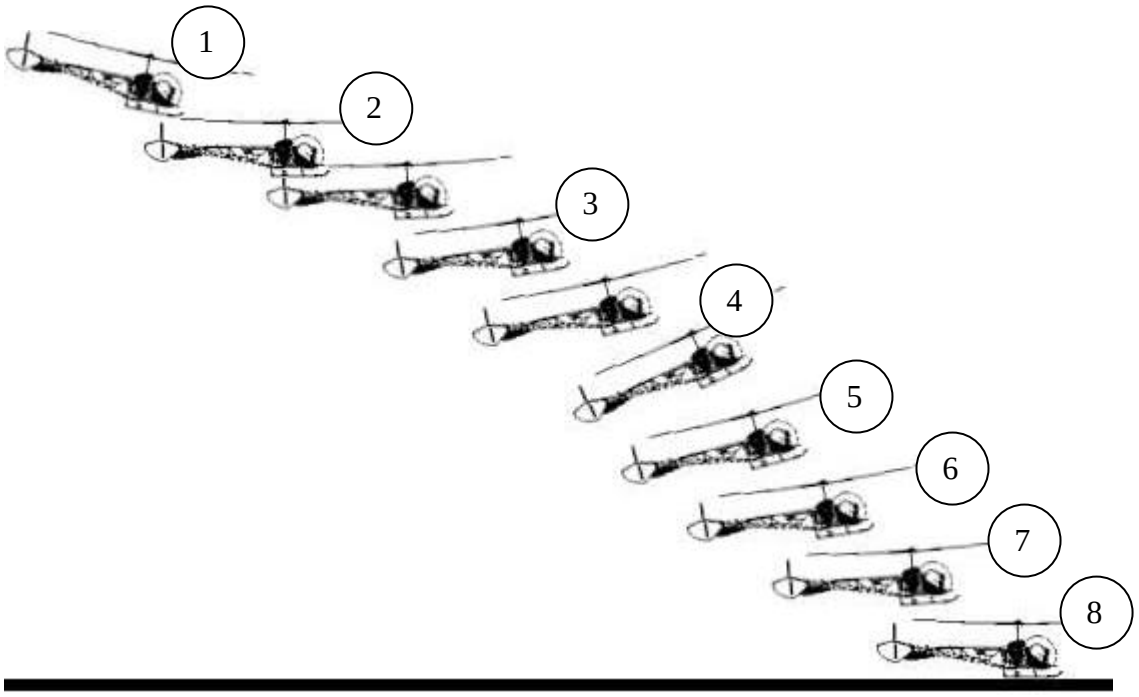
To complete a safe landing attemp you'll have to touch the ground with **as low sink rate as possible** and with **as low airspeed as possible**. Maximum landing sink rate for a loaded helicopter is **800 ft/min** (red line on the VSI gauge as shown at the right screenshot) for normal landings and **600 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**

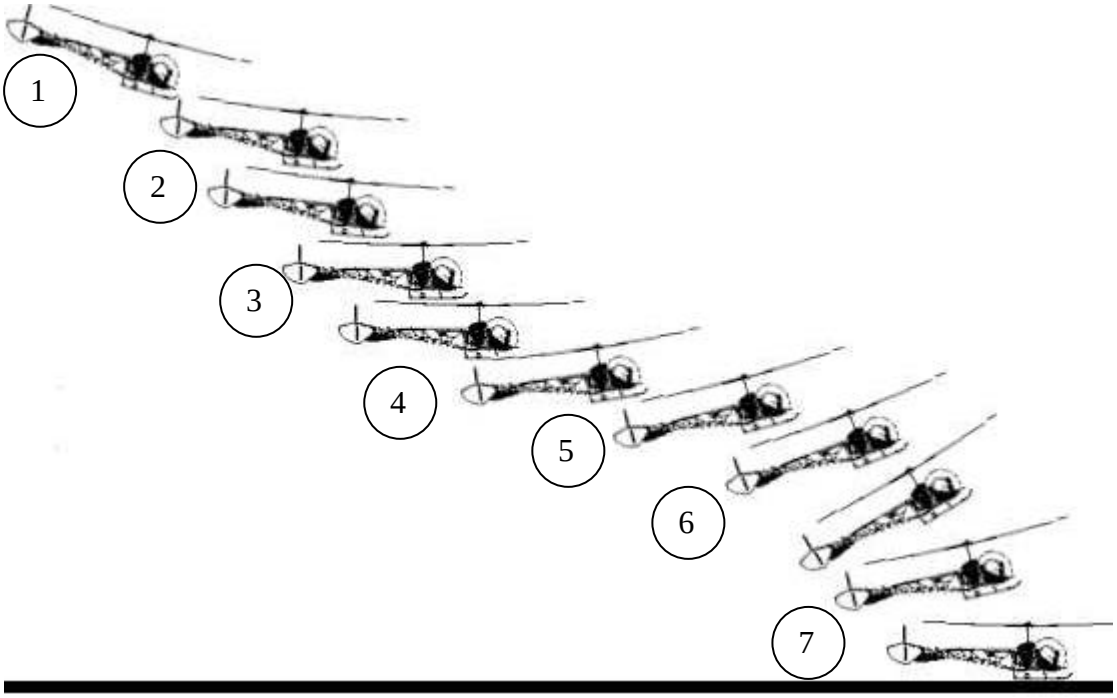
Try to understand this landing method and operate it on your Flight Simulator.



(1) Cruising airspeed, safe altitute.
(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 (4) 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 (15) 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 (14) to OFF position.

ENGINES & SYSTEMS LIMITATION

- Maximum speed limit (glide, dive or smooth air): **130 KIAS**
- Load factor limit: **+2.2 G** / **-0.8 G**
- Landing skid system: The best VSI while landing is 10 ft/min and 0 KIAS. You must never exceed **800 ft/min** or **10 KIAS** when landing.

SPECIAL VISUAL FX

Blowing sand or waving water while landing can be noticed, but you'll be surprised by the pilot's hands, legs and head movement while controling the helicopter. The pilot's door can be fully opened / closed by pressing Shift + E buttons on your keyboard at any time.