

# Desert Combat Helicopter Flight Manual

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## **Sir Isac Newtons laws and choppers in DC**

"OBJECTS AT REST STAY AT REST UNLESS A FORCE IS APPLIED, OBJECTS IN MOTION STAY IN MOTION UNLESS A FORCE IS APPLIED"

When performing a maneuver in a helicopter you must apply equal and opposite force to stop the maneuver. This is because there is a lack of friction in low speed air maneuvers. Remember this and Piloting the Helicopters in Desert Combat will be a lot easier for you.

## ***Flight Basics***

### **KEEP IT LOW**

A good helicopter pilot will remain within 25-75 feet AGL (above ground level), and travel at half speed or faster, maintaining good control of your aircraft. When there is no direct threat to your aircraft, rapid control input should be avoided. This type of flying is hard at first (practice in single player please) but once mastered it is very effective (Flying below Shilka angle of attack). This flying method has its dangers to the uneducated pilot though. Low speed makes you susceptible to hits from tank main guns and RPG fire. This can be easily avoided with what we cover in the advanced section. If you make contact with an enemy tank or mobile AA, make sure you start to take evasive action and seek a masked position. Then evaluate the situation and plan your attack. Never fly head on at mobile AA or a tank. They'll pluck you out of the sky if they have any skill. Keep your movements side to side and never stop moving until you are sure that they can't hit you.

### **STOPPING**

Surprisingly enough most people have trouble with this. Here is how its done: pull back on the stick to bring the nose up. This will make the chopper climb (bad) so drop the throttle (collective) to compensate> Then push the stick back forward after sufficient speed is bled off and then come to a hover or continue on

### **HOVERING**

Hovering is not an easy thing to do ("like balancing a brick on a pin head") but is essential to things in the advanced section. A simple medium speed to hover maneuver is done as follows: pull back on the stick, this will make the chopper gain altitude (Bad) so drop the collective (throttle) to compensate (DC physics note: don't go into reverse by accident). Then push the nose back to level and raise the collective to around 70-80% (NOTE: sweet spot is hard to find its is easily done by

constant adjustment though) also it may be needed to drop altitude for safety. Also direction change with the tail rotor can be done very quickly from a hover.

### **FLYING BACKWARDS**

This is fairly simple but confusing to due lack of view, just stop and keep the stick back and angle the nose up at a 40-55 degree angle. the important thing is to not be losing altitude while doing this for a backwards tail first ground strike is very bad. (but funny to watch)

### **FLYING SIDEWAYS**

Sideway flight can be a little tricky. You can achieve sideways flight from a hover or on the move. From a hover pitch the stick gently to the side until the helicopter is at a 45 degree angle (sideways). This will make the helicopter want to turn in the direction of pitch so rudder (tail rotor) must be applied in the opposite direction to counter act the turn. You may also need to pull back on the stick as well because if the nose is even slightly below the horizon line the helicopter will move in a odd diagonal way potentially leading to terrain collision. To transition from flying straight forward to flying sideways in the same direction, apply tail rotor in the opposite direction that you wish the aircraft to point. When you do this, make sure you rotate the main rotor pitch so that it's maintaining the same direction that it was when you were flying forward. So when done, you will still be traveling the same direction that you were when you were going forward, only now you are going sideways.

### **SHARPER TURNING**

If you start a turn and want to snap it around a little quicker than just laying on constant pressure, you can kick the throttle (collective) when you start the turn. This will snap the nose around quicker. You can also use the reverse of this to slow a turn down, or apply rudder in the opposite direction of the turn.

## ***Flight Techniques***

### **MASKING**

Masking is the single most important thing for combat helicopter survival. Masking involves putting a piece of terrain or large object in-between you and the threat either for stealthy attack or cover from fire. This is done by hovering behind something. Also a very effective thing is moving in a masked state. This is relatively map dependant but is done for example by flying in the river just above the water in Bocage (I mean like a foot off the water) and flying close to the beach and below ground level just above the ocean in wake island this effectively makes you invisible to the enemy as you gain ground on them, very sneaky, very deadly.

Also when making high speed dashes from cover to cover remember that your going to have to spend some time stopping as to not over shoot your destination.

### **BOB-UP**

This is a very effective attack. It is done from a masked hover and the point is to rise up over your cover and bring weapons on target then re-mask and move on. It is fairly simple just increase the throttle to ascend over the terrain, identify and destroy your targets and then descend back in to cover. They will never know what hit 'em.

### **BOB-SIDEWAYS**

The same as bob-up but you fly sideways out from you cover instead of popping over it

### **HIGH SPEED LOW ALTITUDE FLIGHT**

This is best used for travel across open areas. It is done by rising in altitude slightly the pitching steeply forward to gain speed the leveling of and costing to you destination. (By raise altitude I mean from 30-45 feet not 30-300 feet)

### **JINKING**

This is the act of making sharp and rapid sideways maneuvers to avoid fire on open ground. Keep cool and don't get out of control.

## ***Combat Control***

### **EVASION OF FIRE**

#### **Evasion vs. Mobile AA**

The best thing to do here is to stay masked and avoid the situation all together but if you are caught in Shilka fire you can do one of two things, get lower than the Shilka or move quickly to a masked position. Don't panic. Make swift but controlled evasive maneuvers until masked.

#### **Evasion vs. RPG**

These aren't much of a threat because it takes a number of shot to down you keep you eyes open because an unseen RPG man is harmful to a hovering chopper. Move to mask or send some rockets his way is all i can say.

### **Evasion vs. infantry**

Not really a threat EXCEPT when they get above you then a good shot can easily shoot you out of the cockpit. Keep your eyes open

### **Evasion vs. tank**

The main gun can pose a problem to a hovering or on coming helicopter though it is easily avoided by moving across it. the top gun does little damage its best to mask and move out of the area.

### **Evasion vs. BDRM**

Similar to the tank top gun strategy but this gun does more damage so be quicker in finding cover.

### **Evasion vs. HMMWV TOW**

Keep your speed up and jink and the missile will have a hard time hitting you.

### **Evasion vs. Fighter**

This is a scary situation. if you even survive its first pass you must move quickly to a good masking position so that your out of site when he comes around again.

### **Evasion vs. Stationary AA**

The best thing is to quickly mask and then move out of range.

## **ATTACKING**

When a helicopter attacks it can be very deadly in the right hands. Hopefully every thing I've said up until now will prepare you for this.

### **Attacking vs. Tank**

Accuracy is key here for you have a limited ammo supply for your hellfire missiles. Attack from low altitude and at low speed, to the rear of the tank if possible. When dealing with multi units bob-up is very effective. If you cannot engage the tank from the rear or by surprise, then you have two other options. Mask and travel to a different spot to attack and hope that the tank doesn't figure out your strat, or get out of range and get some altitude and then come in from above. This will prevent the tanker from taking you out of the sky with the main gun of the tank. Keep in mind though, if you use this tactic, you're wide open for fighters to pluck you from the sky as well. If you come across a skilled tank operator, it's probably best to wait for him to go into terrain that hinders him and offers you plenty of room to mask and attack from safe angles. Otherwise you run the risk of exposing yourself to air attack, let alone the tank on the ground.

### **Attacking vs. Infantry**

The most effective way to deal with these guys is to give them a rocket salvo of 2-6 rockets in a slight sweeping motion. Attack while on the move is easy vs. infantry and bob-up is not really necessary vs. just infantry. also watch for enemy vehicles that could be with them

### **Attacking vs. soft vehicle (HMMWV, BDRM)**

Stabilize in to a slow moving level flight and attack with large rocket salvos. For the BDRM you might want to use a hellfire but only if it's not moving very fast

### **Attacking vs. fighters**

Most helicopter pilots will tell you to forget about it, run and hide. Try to blast them before they take off. But if you really have to shoot down that MIG or F-16...

The first rule for survival in the Apache - TAKE A GUNNER!

If your gunner gets killed - drop what you are doing, and pick up another one.

If you fly alone - you deserve to get taken out.

If you hear an enemy aircraft behind you, or see tracers hit the ground in front of you or passing by you - TAKE AGGRESSIVE EVASIVE ACTION! Pitch left and right, throw appropriate rudder in there. Get low to the ground and try to get into some cover like hills or buildings.

The enemy aircraft will more than likely not be able to get you on the first pass if you take evasive action. When he fly's by, continue facing the direction he went, and when he reappears perfectly lined up for an other pass, you'll be facing him dead on. Be patient, then just as he thinks he has you, let out a volley of rockets. Hopefully your gunner will clue into what you are doing and pick away at the enemy aircraft as well.

Best case scenario, you kill him (takes about 4 rocket hits to do so, so this is unlikely in one pass). Worst case scenario, the rockets screaming past his canopy distracts him enough to screw up his perfect pass to kill you - then when he passes by - do a quick 180 to follow where he went, and repeat the process.

If you can keep a Jet slow and busy like that when there are ground forces near by (AS THERE SHOULD BE - since you are SUPPORTING THEM - right?) the ground forces will also pick away at the easy slow target.

### **Attacking vs. Mobile AA**

Bob-up is essential here. The best thing to do is to pop up firing every thing you have at it and then get down again.

### **Attacking vs. Helicopters**

Here you must get above you opponent because a helicopters weapons don't shoot

up very well so if your shooting down and he's shooting up you have the advantage.

## ***Helicopter Roles***

### **Troop Transport**

Not only does your Blackhawk or HIND helicopter have uses in destroying enemy ground targets, it can also be an invaluable tool for moving troops around the battlefield. In a competitive situation, you can move snipers around the map to different sniping positions. You can also use them to drop a group of troops off at an enemy base to seize control of their assets and hinder them before they get out, or hinder them at the very least. The winner of most matches will be the team that oppresses the other team. If you own the other team's base, you own the game for the most part. Getting troops moved to the enemy base will be easiest in the Blackhawk helicopter for the Allied teams, and the HIND for the Axis teams. These two aircraft must be manned by skilled and cunning pilots, who use the terrain and good flying skills to move troops safely and stealthily around the battlefield.

### **Air to Surface Combat**

In a real world, and Desert Combat situation, helicopters are best suited for Air to Surface combat. You'll mainly target tanks and other vehicles, as well as ground troops. Your job as a pilot is to keep the aircraft alive and destroy as much enemy equipment and personnel as possible. If you encounter fighter planes, your best option is to try to evade the enemy as soon as possible. Fighters will pretty much have their way with helicopters, no matter how good the pilot might be. It's well advised not to take on a fighter when piloting a helicopter. Stick with the ground targets.

## ***Crew Roles***

### **Pilot (Engineer Class)**

The Pilot will probably always want to be an engineer. This way you can keep the aircraft repaired and functional after you've landed in a concealed area.

### **Gunner or Crew Chief (Engineer Class)**

Your job is to help keep the aircraft maintained, and defended. If the pilot lands the aircraft and gets out to start on repairs, then your main area of concern is covering the aircraft from either a crew served weapon onboard, or by using your SAW (the weapon carried by the Engineer class). If the aircraft is damaged to the point that the pilot cannot complete all the necessary repairs, then he should switch with you and cover you while you finish repairing the damages. A good combo of Engineer class pilots and Gunner/Crew Chief can keep a helicopter going for quite a while (unless you run into an A-10).

## **Contributing Authors:**

**SGT Boyd** - Author of the Flight Basics, Flight Techniques, and Combat Control.

**Schteevie** – Author of Attacking vs. Fighters in the Combat Control section.

**Whizzer929** – Provided information on Attack vs Tank in the combat control section, and information on the Keep it Low part of the Flight Basics section.

**JohnniKnoxville** – Created this PDF File. Cleaned up spelling and other errors. Added Transitioning from forward to sideways flight in the section on sideways flight. Added Sharper Turning to the Flight Basics Section. Added Helicopter roles and Crew Roles sections.

Anyone who has valid helpful information that they would like to recommend for addition to this help file, please email [johnniknoxville@marauders.us](mailto:johnniknoxville@marauders.us).