

cfrag's

EXPANSION

V1.80 – 20250715 (HOT & COLD)

A DCS dynamic Mission and Sandbox



ABOUT EXPANSION

In Expansion, you are part of Blue's ongoing battle to conquer the region. You are free to choose your own aircraft and mission (be it close air support, CSAR, strike, SEAD/DEAD, combat patrol, troop insertion, ferry or similar), and if you choose to help your side with the current tactical and strategical goals, that can help a lot to change the strategic landscape. Blue's goal is to capture all strategic airfields of the region, while Red do their best to achieve the same. When in doubt what to do, command authority "Dragon Ledge" always tells you what the current strategic and tactical objectives are, so you can focus on helping to fulfil that goal. Blue's AI is in command of all blue non-player-controlled units.

Underlying the mission are some simple economic rules: capturing and holding strategic locations gains funds for your side and denies them to the other. Likewise, destroying enemy units adds funds to your side. Players can use funds to strengthen locations or order supporting flights, strikes, and even capture missions.

The mission starts with Blue side owning one airfield: Nalchik. Holding Red Forces off from capturing Nalchik is likely and routinely accomplished by Blue's AI without your or other player's help. Expanding Blue's reach to hold half of the map requires moderate player skills. Turning the tables on Red and holding three airfields requires focus and dedication. Winning the scenario is possible, and a true achievement. Expect a full play-through to take some 15 to 20 hours (1-2 players), usually a lot more - this is a dynamic mission after all, and the opposing side will become increasingly aggressive when it loses. Expansion supports "persistence" (see notes) to save and resume your campaign later. Expansion supports

(actually: thrives) as multiplayer, so bring your friends (with 4 players, Expansion can be won in 5 hours). Since it's a Sandbox dynamic mission, you can leave it running on a server for anyone to join on their own time. Be advised that if you leave Expansion unattended, Red tends to try and take advantage and recapture some locations

You *can* win Expansion in single-player, and it is a lot more fun in multiplayer.

STRATEGIC GOAL

Expansion's **strategic objective** is to capture all four airfields of the region:

- Nalchik
- Beslan
- Mozdok
- Mineralnye Vody

The mission starts with BLUE side holding only one airfield: Nalchik. Blue's AI Command Authority "Dragon Ledge" assigns tactical objectives as it sees fit and always informs the players of the shifting priorities. The battle progresses around you in real-time *and responds to your actions*. Both sides' AI Admirals task their units dynamically and according to their tactical needs - so plan your own flights with this in mind. And yes, Red **WILL** try and recapture any strategic location that you took. And it *will* succeed if you don't help.

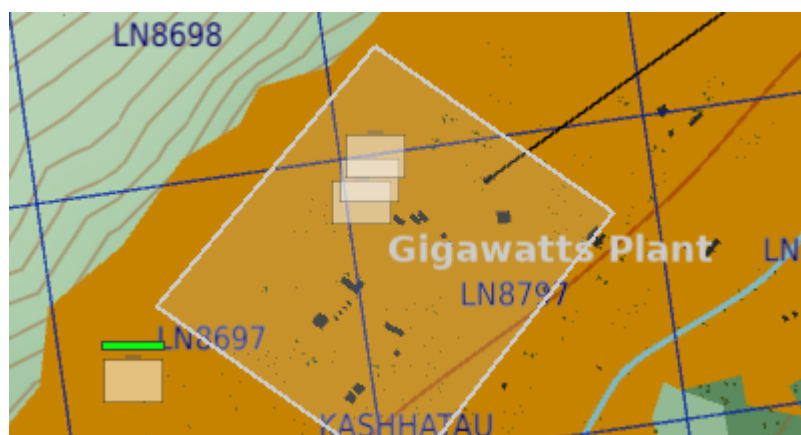
HELPING YOUR SIDE

The overall battle is controlled by AI Admirals for BLUE ("Dragon Ledge") and RED that task their troops. They will direct their forces and assign primary and secondary objectives.

Initially, you should focus on supporting your side's secondary objectives, as they help your side to expand control over the battlefield, and allow your side to secure a steady income that you (the players) then can spend on tactical support.

INCOME

When your side captures strategic locations (for example: the "**Gigawatts Power Plant**" south of Nalchik), these generate income for your side. The more locations that your side holds, the greater your income.



Another source of income is direct enemy attrition: for every enemy unit that a player destroys, your side gains some income - provided that the pilot can land their plane at a player-controlled airfield or FARP.

A third source of income is rescuing downed pilots and returning them to a player-controlled airbase or FARP.

A fourth is successfully inserting troops into enemy locations to capture them.

Your side's income is regularly gathered and added to your side's available funds. Funds are available to all players on the same side. And funds are meant to be spent - "funds are only valuable as long as they are used". Use them wisely.

SPENDING FUNDS

Players spend funds in various ways:

- repair and/or upgrade a specific location's defenses. For this *you must land inside that location and come to a full stop*. At that point you can access the menu to repair or upgrade local defenses. Note that **all defenses must be repaired before you can upgrade**. The cost for upgrades and repairs varies by location.
- order strategic upgrades / repairs. This transfers funds to Blue's control authority and Dragon Ledge decides how they are invested. The drawback is that you don't know where the funds will be invested. The advantage is that you don't have to be on-location to invest the funds.
- order support in the form of SEAD, CAP or CAS flights for a region.
- order a strategic insertion force to attempt taking an enemy-held (or neutral) location. Which location to take is a decision made by your command authority.
- order a missile strike on one of the four strategic targets. Note that these missiles (Tomahawk cruise missiles) must travel significant distances to arrive at their target, expect 15-20 minutes traversal time.
- order reconnaissance drones to take station over strategic locations



Remember: there are few things less useful to a pilot than

- altitude above you
- runway behind you
- fuel in the truck
- funds still in the bank

AVAILABILITY OF AIRCRAFT

Blue aircraft are only available on airfields or FARP that belong to BLUE. You cannot 'slot' into an aircraft that sits on an airfield or FARP that doesn't belong to BLUE. This is intentional: a key aspect of Expansion is to capture FARPs and airfields to extend your reach.

Note: this feature is also available in single-player mode.

Expansion supports DCS' "dynamic aircraft" system to allow *any* player-controllable aircraft to be available at any owned airfield. Note that this feature currently requires that Expansion

be run as multiplayer, even if you plan to fight alone. In single-player mode, you only have access to the aircraft that I placed on the tarmac (or that you added yourself in Mission Editor).

HOT AND COLD STARTUP

There are two versions of Expansion available: HOT (default) in which all player aircraft are hot (fully started up) when you enter the cockpit. The alternate version is "Expansion COLD", in which all player aircraft are cold and dark when a player enters the cockpit.

CAPTURING STRATEGIC LOCATIONS (HOW TO WIN)

You win Expansion by capturing strategic locations that increase your income, and then by using that income in smart ways to further your campaign. So, make capturing locations all over the map your goal. The first step is to wear down defenses: SEAD and CAS the location until it's next to helpless. Be wary that enemy AI can (and will) order repairs and reinforcements. If possible, loiter near a defenseless location until it is captured. Once captured, players can spend funds to beef up its defenses to make it more difficult for Red to re-capture the location.

If you have helicopter pilots among your players, the easiest way to capture a location is to make sure that there are no enemy units inside the area (check the F10 map), and then place your own units inside the zone. Some Helicopters (Hind, Hip, Huey, Hook) can request and transport troops (see "Helicopter Troop Transport", below).

If you don't have anyone who can chopper your chopper over a shed, you'll have to tough it out: see which tactical objective the AI is working at, support it, and occasionally transfer funds to order a capture attempt. Eventually the attempt succeeds, and you own that asset as well.

HELICOPTER TROOP TRANSPORT

Pilots that control a helicopter capable of troop-transport (Huey, Hip, Hind, Hook) can quickly move infantry to tactical positions to capture or defend, or to provide laser-targeting of enemy ground forces. This can also be used to rescue downed friendly pilots (see "Rescuing downed Pilots", later)

At airfields and FARPs (usually at, or close to, the spawning locations of player helicopters), players can request ("spawn in") infantry that they then can transport to other locations on the map.

REQUESTING INFANTRY

To request infantry, move the troop-transport capable helicopter close to the infantry spawn location of the airfield/FARP (usually close to the player-controlled helicopter spawn location), and choose

Communication→Other→Airlift Troops.. and then choose one of the available “Request <xxx>” options available there to spawn a squad of that type. If there are no troops to request, you are too far away from an infantry request point.

Note:

Be sure to choose “Airlift Troops” from the “Other” menu tree. Note that this option is only available for helicopters that can transport troops.

Once you have requested a squad, it appears and is ready to embark on your helicopter.



LOADING INFANTRY INTO YOUR HELICOPTER

Player-controlled troop transport-capable helicopters can load and deploy infantry anywhere on the map. To do so, players land the helicopter close to the infantry, and choose

Communications→Other→Airlift Troops.. and choose the option “Load <group name>”. The group embarks on the player’s helicopter. Note that the player does not have to be in special embarkation zones; players can pick up friendly infantry anywhere on the map, and drop them anywhere on the map.

Again, this is only available for player-controlled troop-transport helicopters.

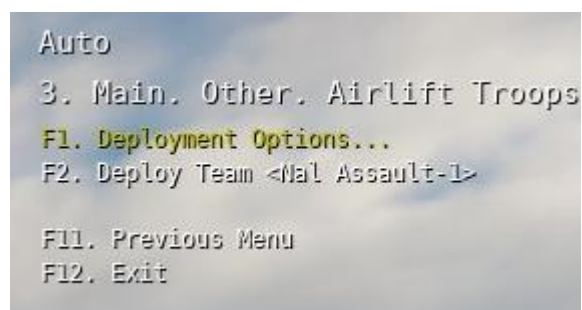
Note that options are available for players to automatically load and deploy troops when the helicopter touches down to greatly simplify and accelerate the process of embarking and disembarking infantry.

DEPLOYING/DISEMBARKING TROOPS

When a player-controlled helicopter is transporting infantry, they can land anywhere and have the troops disembark. To have the troops disembark, the player chooses

Communication→Other→Airlift Troops and chooses “Deploy Team <name>”.

The latter can come in very handy when attacking enemy convoys. To transport infantry, players request a squad at the heliport of any airfield or FARP and then load them into the helicopter using the communications→Other→Airlift Troops menu. They can then fly to any point on the map, land, and deploy the troops they have on board.



Note that players can pick up infantry and deploy them at anytime, anywhere on the map.

RESCUING DOWNED PILOTS

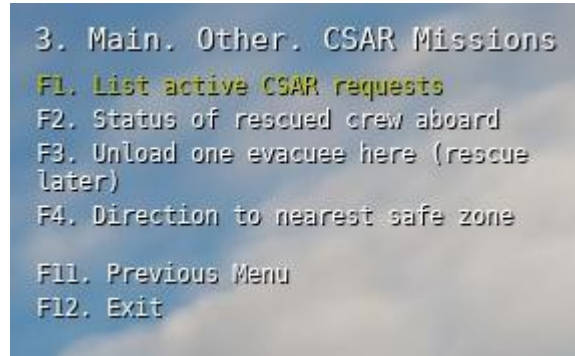
Soon after the mission starts, the map is littered with pilots requesting extraction. Some player-controlled helicopters (Hip, Huey, Hind, Hook, Gazelle and Kiowa) are equipped for CSAR missions – missions to rescue downed pilots. Doing so is simple:

Find evacuees:

Expansion provides a convenient list of all evacuees requesting extraction for you, complete with their status and frequencies (should you want to home in on their signal). Go to communications→Other→CSAR Missions and choose “List active CSAR requests” to get a list of the ten (at most) closest downed pilots that request extraction.

The bearing and distance is always to your aircraft, and take note of their status (e.g.

‘alive’): evacuees succumb to their injuries after some three hours unless they are picked up and stabilized by a player helicopter.



To perform an evacuation, land your CSAR-capable helicopter next to a downed pilot (or hover close to them) to pick them up. Once picked up, return the evacuee to one of your airbases/FARPs medevac zones by landing close to the medevac tents.

Medevac zones are always **marked by** blue or orange **smoke**, and are visible from far away. They usually are also adorned by some tents that house the medical staff. In case you don't know where to deliver your evacuee(s) (you can carry more than one evacuee in your helicopter), simply go to communication→Other→CSAR Missions and choose 'Direction to nearest safe zone'

Rescuing downed pilots gives a substantial boost to your side's available funds.

Warning:

Downed pilots are on the clock! They are injured and must be rescued lest they succumb to

their injuries. Players have some three hours from the time that a pilot ejects until the evacuee succumbs. You can get an evacuee's status from the CSAR mission board.

LONG RANGE FLIGHTS ("SWABBIES")

Due to popular demand, CVN 73 "George Washington" is cruising up and down the Caucasus coast, with F/A-18 and F-15B standing at the ready for people who *really* dig long ingress (and, should you survive, egress).

These aircraft also have access to a special "Request New Tanker" radio menu (available under "Other...") that spawns a new tanker whenever chosen. The tanker spawns north of Honi (roughly between Senaki and Kutaisi) and heads northwest on a racetrack pattern towards Sukhumi-Babushara. The tanker's TACAN is 11X and can be contacted at 255 MHz.

CONTROLLING GROUND FORCES

Expansion supports the Combined Arms module, allowing up to three players to control ground forces. Unlike aircraft, any score accumulated while occupying a ground unit is added immediately to their faction.

Using the CA module, players can also task AI air units.

FREQUENCIES (optional, easy communications are enabled)

FARP April – 132.5 MHz "London", 14X

FARP May – 137.5 MHz "Dallas", 15X

FARP June – 142 MHz "Paris", 16X

FARP October – 145 MHz "Berlin", 20X

FARP December – 155.5 MHz "Rome", 22X

AWACS – 251 MHz "Overlord"

George Washington – 254.5 MHz, TACAN 73X, ICLS 1, Link 331

Shell – 255 MHz, 11X

A NOTE ON ENEMY AI

Initially, enemy strategy AI is almost docile - it is content with holding most of the territory and killing you in a vaguely unfriendly way. This changes with the number of strategic locations that you capture. Once you start closing in on it, Red AI becomes aggressive, and at some point, positively vicious. So, enjoy the time when it just tries to crush you.

Enemy AI is moderated by the 'difficulty' attribute: setting difficulty to less than 1 makes the enemies more manageable, while setting it to 2 or above gives them an additional edge.

A NOTE ON PERSISTENCE (SAVING THE MISSION)

Expansion automatically saves the state of the mission every 5 minutes, so should you wish

to end and later continue the mission, the maximum you lose are 5 minutes. All typical restrictions to DCS mission saving apply:

- your (server's) DCS installation must be '*de-sanitized*'
- upon reload, the day's date and time is reset to mission starting time (06:30 local)
- ground units reset to full health
- all airborne units are wiped (including AWACS and tankers)
- all currently open missions reset

To enable persistence, you must 'de-sanitize' DCS. Edit "\Scripts\MissionScripting.lua" in your main DCS installation folder:

Look for:

```
do
    sanitizeModule('os')
    sanitizeModule('io')
    sanitizeModule('lfs')
    _G['require'] = nil
    _G['loadlib'] = nil
    _G['package'] = nil
end
```

and change it to:

```
do
    sanitizeModule('os')
    --sanitizeModule('io')
    --sanitizeModule('lfs')
    _G['require'] = nil
    _G['loadlib'] = nil
    _G['package'] = nil
end
```

(put **double dashes** in front of the two that contain "sanitizeModule('io')" and "sanitizeModule('lfs')"), then save the file. If you are ham-fisted like me, make a backup first.

From that point on, Expansion saves its current state every 5 minutes into a folder called "Expansion (data)" that resides inside your DCS missions folder.

STARTING A NEW MISSION (with persistence active)

If you want Expansion to start from the beginning, **delete the folder "Expansion (data)" before starting Expansion.**

PERFORMANCE NOTES / CUSTOMIZATION -- Requires Mission Editor

ADDING YOUR OWN PLAYER AIRCRAFT

Expansion supports *all* DCS aircraft, yet it comes pre-configured with only a limited set. If “your” aircraft isn't amongst them, simply add them in Mission Editor. Make sure to remember to add them to all airfields. **DO NOT** add them onto a **numbered parking slot**, place them with **"FROM GROUND" instead** (hot or cold, your call).

EYE CANDY

Expansion comes pre-configured to use ['StopGap'](#), a little utility that fills empty player slots with static stand-ins. This makes airfields look *much* cooler and contributes little else but using up performance close to these airfields. See below how to enable / disable this feature should it crush your PC's performance.

DIFFICULTY

Expansion runs on difficulty 1 (“Normal”) by default. You can change it to other values to better fit your requirements, and be advised that this value can be a fraction (e.g. “1.5”). Ramping up difficulty means that your side starts with fewer funds, and RED is allowed to more might to crush you. I'm a wuss, and I prefer difficulty 1.

HOW DIFFICULTY AFFECTS THE MISSION

Note that a value of 1 is Expansion's default, I designed it for this difficulty because I'm a wuss.

General difficulty settings:

The ‘difficulty’ value affects the likelihood of enemy flights, convoys and capture attempts appearing on the map. Red AI becomes less reluctant to throw their pilots at blue, and has more funds to waste on blue, the higher the difficulty value. Likewise, blue starts with less funds the higher the difficulty. Difficulty values beyond 3 have diminishing returns.

Other factors:

- If difficulty is lower than 1, enemy pilots are much less capable than normally, and red no longer performs repairs to their installations.
- If difficulty is larger than 1, enemy pilots can be more capable than normally. Blue starts with less funds
- If difficulty is 2 or larger, red can perform multiple repairs at the same time. Blue starts with nearly zero funds

AUTO-SCALING DIFFICULTY






Expansion's enemy AI Admiral's aggression scales with the number of players slotted in. The more players participate, the more enemies Red can throw against Blue.

HOW TO CUSTOMIZE EXPANSION

Everything in Expansion is controlled with trigger zone attributes, there is not a single line of code to change. The first step to customize Expansion is always this: click on the "view trigger zone list" (three interlocking rings). Then find the trigger zone described below.


Changing Difficulty

Open the trigger zone "expansionConfig". Look for the name 'difficulty' and change its value. Default is 1. This value can be a fraction (e.g. 1.5). Values smaller than 0 are set to 0.

Name	Value	
verbose	no	
redAI	yes	
blueAI	no	
interval	1200	
difficulty	1	

Turning Eye Candy ("StopGap") on/off





Open the trigger zone "stopGapConfig". Look for the value "onStart". Change it to "yes" or "no". Default is "yes" (eye candy is enabled)

Name	Value	
onStart	yes	

WARNING: [stopGap](#) for multiplayer *requires* that the server (and **only** server, it automatically sleeps on a client) has the small 'stopGapGUI' script running. This works around a DCS bug and facilitate client synchronization. If your planes crash and burn you enter their cockpit, your server usually needs to install stopGapGUI.

Changing time limits on CSAR missions

CSAR missions are automatically limited to 3 hours, after which the pilot expires. You can change this with the **csarManagerConfig** zone: Look for the attribute named "timeLimit". It's set to 180, meaning 180 minutes until a pilot dies after ejecting. You can either delete the attribute entirely (by clicking on the trash can), which disables time limits entirely, or set it to a ridiculous value like '99999' (which some 70 days playing time)

Name	Value	
troopCarriers	Mi-8MT, UH*, Mi-24P, SA342*	
verbose	no	
timeLimit	180	
lostSound	taps.ogg	

Changing helicopter CSAR types

By default the Hip, Huey, Hind, Gazelle, Hook and Kiowa can perform CSAR missions. This is controlled with the 'troopCarriers' entry in the csarManagerConfig zone (see above). The value defaults to

Mi-8MT, UH*, Mi-24P, SA342*, CH*, OH*



meaning that the Mi-8MT, Mi-24P, any helicopter type starting with UH, CH or OH and any helicopter type starting with SA342 can perform CSAR missions. Note that this, by default, also includes the UH-60 (if such a mod is added to Expansion) or OH-6 (these are currently not standard DCS modules, but should you add them to the mission, they are automatically supported as CSAR-capable).

You can change this value to anything that you like. For example, adding Ka* will also allow the Black Shark (all variants) to perform CSAR missions

Turning off Reaper Drone Support

To some players (especially those who are envious of the A-10C's APWKS and Laser Mavs), the availability of drones that are lasing targets makes Expansion

too easy (for others). The entire reaper drone mechanics can be disabled by a simple switch in the **reaperDroneConfig** zone: change the value from “yes” to “no” (or “false”), and the UI to interface with drones disappears from the game. Players can no longer launch drones and use their lasers for easy fodder.

Name	Value	
UI	yes	
actionSound	UI_SCI-FI_Tone_Bright_Dry_2!	

Hot/Cold starting

Expansion comes in two versions: with most aircraft set to HOT START. Some people prefer cold starts (especially more seasoned players, who find some of the more unusual “hot”-started settings questionable). For them there is now the “COLD” version of Expansion, provided by DCS Web Editor (<https://www.patreon.com/DcsWebEditor>) automatic conversion ability.



I convert to COLD with [DCS Web Editor](https://www.patreon.com/DcsWebEditor), a phenomenal tool that puts to shame the Mission Editor that comes with DCS. DCS Web Editor's built-in 'Macro' function converts all roughly 200 player aircraft to “cold” within a second. I strongly encourage everyone to look at this project.

Adding the Blackhawk or Cayuse

If you want to add the Blackhawk or Cayuse helicopter (player-controlled MODs) the mission by default automatically supports its use in CSAR missions (see above). Simply add it to wherever you prefer with Mission Editor. Expansion already recognizes it for CSAR and Troop Transport missions.

MODIFY, BUT PLEASE DO NOT PUBLISH

You are free to modify Expansion to your heart's content. I ask you to not, however, post your version of Expansion (modified or otherwise) on-line. Running your own version of Expansion as a mission on a multiplayer server is fine, though – and decidedly encouraged by me – I'd love to see how and what you make of Expansion.

ACKNOWLEDGEMENTS

Expansion would have been impossible without the kind support and deep bow to:

- "Expansion" is inspired by **Dzsekeb's** phenomenal "Foothold" and "Pretense" missions. Expansion represents my re-imagination of Dzsekeb's game ideas, and I'm humbled by his implementation.
- My thanks to the kind people at **61st Griffins** and **bitboy** for stress-testing Expansion
- Voice Acting by **Elevenlabs**
- Mission created with DML by cfrag

COMING ATTRACTIONS (?)

Expansion is a truly complex mission, and yet there already is a (growing) list of things that I may want to add if feedback warrants it:

- Tie TACAN availability to an upgrade per location
- Some devilish AI tricks like
 - 'revenge strikes' for captured locations
 - Stronger target prioritization (that May FARP is just "precious")
- Bombing missions (purchasable from both sides)
- More/better audio effects

FEEDBACK WANTED

Expansion wouldn't be what it is today without all the feedback that I've received. Keep it coming, and please keep it constructive. Naming your first-born after me is entirely optional. Please add your feedback in this thread:

<https://forum.dcs.world/topic/348126-sp-co-op-mp-expansion-a-dynamic-mission-and-sandbox-all-aircraft/>