

cfrag's

EXPANSION

V1.52 – 20240912 (HOT & COLD)

A DCS dynamic Mission and Sandbox



ABOUT EXPANSION

In Expansion, you are part of an ongoing larger battle to conquer the region. You are free to choose your own aircraft and mission (be it close air support, CSAR, combat patrol or similar), and if you choose to help your side's current tactical and strategical goals, that helps a lot. Holding off Red Forces from capturing Nalchik is likely and routinely accomplished by Blue's AI without your 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, 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. Since it's a Sandbox dynamic mission, you can leave it running on a server for anyone to join on their own time.

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

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. AI will assign tactical objectives as it sees fit. The battle progresses around you in real-time and responds to your actions. Both side's AI Admirals task their units dynamically and according to their tactical needs - so plan your own flights accordingly. And yes, Red **WILL** try and re-capture any strategic location that you took. And it *will* succeed if you don't help.

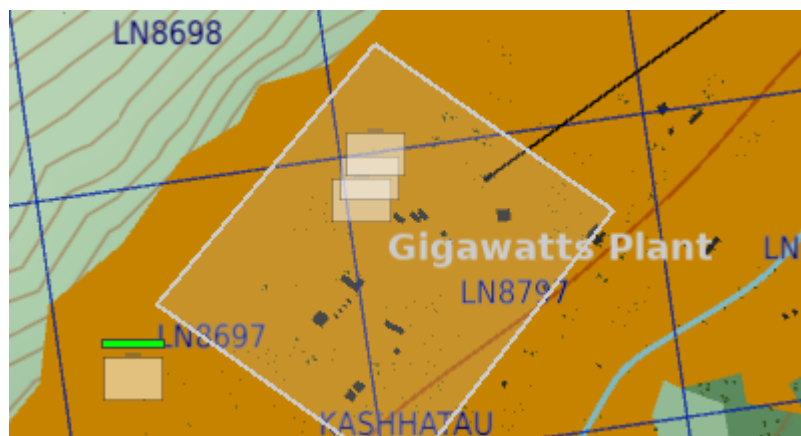
HELPING YOUR SIDE

The overall battle is controlled by AI Admirals for BLUE 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

You spend your side's funds in various ways:

- to 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.

- to order strategic upgrades / repairs. This transfers funds to your control authority and the AI decides where these funds 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 order support in the form of SEAD, CAP or CAS flights for a region.
- to 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.
- to order a missile strike on one of the four strategic targets. Note that these missiles (Tomahawk cruise missiles) have to traverse significant distance to arrive at their target, expect 15-20 minutes.
- Order reconnaissance drones to take station over strategic locations



And 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 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: one key aspect of Expansion is to capture more FARPs and airfields to extend your reach.

As of version 1.2 of Expansion, this feature is available also for single-player.

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.



The conversion to COLD is done with and provided by [DCS Web Editor](#), 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 take a look at this project.

CAPTURING STRATEGIC LOCATIONS

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, so if possible, loiter near a defenseless location until it's really captured. Once captured, spend funds to beef it up.

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 spawn and transport troops (check Other->Airlift Troops).

If you don't have anyone who can chopper a chopper over the 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.

RESCUING DOWNED PILOTS

Quickly, the map will be littered with pilots requesting extraction. Some helicopters (Hip, Huey, Hind, Hook, Gazelle and Kiowa) are equipped for CSAR. Land next to the downed pilot (or hover close to them), and then return the pilot to one of your airbases/FARPs. Doing so will give a substantial boost to your available funds.

Downed pilots are on the clock! They are injured and must be rescued lest they expire from their injuries. Pilots have some three hours from the time that a pilot ejects until the evacuee succumbs. You can get the pilot'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.

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.

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. If you want Expansion to start from the beginning, **delete that folder before starting Expansion**.

NOTES FOR SINGLE PLAYER

CHANGE NOTICE:

Earlier versions of Expansion did not support single-player slot blocking. As of Expansion Version 1.2, single-player and multi-player slot blocking is supported.

NOTES FOR MULTI-PLAYER

CHANGE NOTICE:

Earlier versions of Expansion required "[SSB](#)" be installed on the server to support dynamic slot blocking. As of version 1.2 of Expansion, this is *merely recommended for a better user experience*. If SSB is not running on the server, Expansion now supplies its own lightweight mission-based (instead of server-based) SSB-service.

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 (“Kindergarten”) by default. You can change it to other, “more manly” values (smaller than 1 reverts to 1). 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.

AUTO-SCALING DIFFICULTY






Expansion's enemy AI Admiral's aggression scales with the number of players. 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.

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 to work around a DCS bug and facilitate client synchronization. If your planes crash down to the ground when you enter their cockpit, your server 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	

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

Name	Value	
UI	yes	
actionSound	UI_SCI-FI_Tone_Bright_Dry_2!	

to interface with drones disappears from the game. Players can no longer launch drones and use their lasers for easy fodder.

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

Adding the Blackhawk

If you want to add the Blackhawk helicopter (a player-controlled MOD) the mission automatically supports its use in CSAR missions. 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)
- DONE - AWACS support
- DONE Convoy escort missions
- More/better audio effects
- DONE - Request (purchase) cruise missile strikes on major targets

VERSION HISTORY

Version 1.0 – Initial Release

Version 1.01 – Minor Update

- Turned off stopGap (single-player only) for all FARP helos to work around DCS 'sky falling down' bug
- Activated stopGap's refresh option: once an hour
- AI difficulty > 1 makes AI more likely to do bad things to players
- Better audio f/x for funds and TACAN responses
- Mission restarts automatically after 8 hours runtime (multiplayer only)
- Sweeper verbosity turned off
- milWing verbosity reduced
- milHelo verbosity reduced, impostor spawn corrected
- Changed mission date and time
- Fixed a potential error when spawning AI flights

Version 1.02 – Minor Update

- fixed rather silly and embarrassing TACAN sound bug
- slightly moved all helicopters in FARPS to be immediately within service range of FARP vehicles
- reworked some TACAN descriptions to better fit with existing descriptions

Version 1.10 – “Swabbies & CSAR” Update

- Added George Washington carrier
- Added FA-18 CATOBAR - note 250 nm ingress!
- Added F-14B CATOBAR - note 250 nm ingress!
- Added Shell tanker for swabbie flights
- Added ability to request Shell at will (swabbies only)
- Added ingress and egress routes for swabbie flights
- Provided all FARPs with their own Frequency
- Frequency reference added to manual
- CSAR missions now all have a time limit of 3 hours before they expire
- Persistence status no longer displayed
- Repairing an owned location also repairs all FARP service vehicles for that location
- Soundfx when csar times out / pilot KIA
- Nalchik CAP also can use Eagle
- Nalchik SEAD can also use Tornado
- FARPs now correctly spawn resource vehicles on loading from storage
- Income sound f/x

Version 1.11

- Fixed a persistence (“save game”) bug that affected some units on airfields

Version 1.2

- now supports slot-blocking in single-player
- now supports slot-blocking on servers that aren't running SSB
- fixed a cosmetic bug that appeared after winning the mission
- upgraded Mineralnye's defenders
- added Tomahawk missile capability
- smart tomahawk target res points
- insertions now deduct their price from funds
- Tomahawk strikes can be ordered for all primary objectives
- added some eye candy to the Washington
- completing an objective nets \$1000
- an AWACS is available on-demand, once per hour, free.

Version 1.21

- Fixed a cosmetic bug that could appear during save

Version 1.22

- Added the Phantom to all 4 airfields
- under-the-hood code hardening
- inserted units move at line abreast formation
- inserted troops move to secure the next neutral or enemy-owned zone and then stay there
- made Cruise Missile launches less verbose
- non-SSB slot blocking: now frees illegitimately slotted aircraft for re-slotting
- Insertion troops picked up from Nalchik use a more advanced (experimental) capture strategy

Version 1.30

- Slightly moved AA in Nalchik to avoid debris
- New Reaper Drone ability for providing lasing assistance
- Reapers available for Baksan, April, May, October, December, Kashhatau and Vladikavkaz
- Made some AA/SAM slightly more aggressive
- Added FCR / Lima Hellfires to second Apache on all airfields
- patched an obscure bug that can cause a stack overflow during mission saving (persistence)
- changed the default player A-10C loadout: added APKWS (one 7x tube)
- Added 2 x A-10C (player) to Beslan (with APKWS)
- Added 2 x player Kiowas to all airfields

Version 1.32

- Drones now can cycle their targets
- Drones now work with Kiowa's L2MUM ability (will not yet reflect drone target cycling due to DCS shortcomings)
- complete overhaul of drone control menus
- Added two additional drones (June and Kislovodsk)
- Corrected a bug involving support flight destinations
- Added player Flankers (1x CAS, 1xCAP) to Bes, Min, Moz
- Added Kiowa to all FARPs as well
- Pilots ejecting onto airfields/FARPS can no longer capture them

Version 1.35

- AWACS respawn now pre-wipes existing aircraft
- stopGap stand-ins now are all neutral and no longer attract attacks
- HOT (default) and COLD startup (COLD provided by DCS Web Editor)
<https://www.patreon.com/DcsWebEditor>

Version 1.40 - Major Update

After some intensive coding, prolonged testing, and re-designs, this update brings a number of important changes to Expansion:

Re-balancing

Feedback (thanks everyone!) was that Expansion's ground offensive was a bit too overwhelming, especially for single-player. The new version reduces the number of ground units spawned, and lengthens the interval between new AI tasking by 25%. This should give players more breathing room, especially when they are fewer in numbers. Furthermore, Red is less aggressive when repairing/upgrading its fortification (only on lower difficulties)

New: Convoys

A new central feature are ground convoys that are sent out by both sides. If Blue sends out a convoy (be it to capture or to reinforce), your task is to ensure that it arrives at its destination. If Red sends out a convoy, your task is to find it and then destroy it. Now, convoys are usually protected by helicopters, and red may even mix some mobile SAMs into the mix, so be careful: Convoys have a strong risk/reward ratio. Some of the convoys can be a nasty piece of work.



Destroying red convoys and ensuring that blue convoys reach their destination net your side significant rewards.

Convoys in their current form build the foundation for a development that I'm planning for later that may incorporate warehouses. At this point in time, they do not impact the overall strategic landscape, just the tactical (convoys can and will capture enemy locations).

DCS July-11 2024 update fixes

The latest DCS update brought a number of undocumented changes to the mission scripting environment. This update to Expansion fixes some that I and people in the community have discovered. There may be more, so please report them quickly, and I will try and fix them quickly.

All Changes in Detail

- Hardening of code for WebEd conversion oddity (COLD only)
- Chemical Complex AAA and defenders ownership fixed
- more unit sweeping to clear out debris etc. on all airfields
- sweeper interval set to 15 minutes
- convoy script infrastructure added to mission
- Added convoys:
 - added 3 blue convoys
 - added 3 red convoys
 - added 2 heavy convoys
- DML framework upgrade
- Rebalancing
- increased interval for AI General's 'rounds'
- only repair or upgrade per round for red (on lower difficulties)
- reduced probability of launching new ground attack (Red)
- First integration of convoys into red/blue strategy
- Integrated convoys with tactical objectives
- Blue receives rewards for tac convoy completion

- added Hook stand-ins for imminent Hook release
- slightly tuned financial interval
- patched some DCS 7-11-2024 update incompatibilities

Version 1.50 – Major Update

Well, finally. The Aug-09 release seems to have corrected some issues, left others, and added some new strangeness. This Expansion update attempts to mitigate the worst damage wrought by unannounced and likely unintended changes made by ED with past three updates.

Since those updates also brought some (welcome) new DCS abilities, version 1.5 brings preliminary support for the CH-47 Chinook, dynamic player spawning (only available in multiplayer), all to be tested and confirmed over the next few weeks.

Version 1.50 currently is HOT only, I'll add a cold version as soon as this release settles.

Details:

- massive DCS code hardening (Jul-11, Jul-22, Aug-09 releases)
- support for dynamic player spawns (MP only) on some airfields/FARPS
- QoL: csarMissions provide local info
- delayed check for FARP ownership, 10 seconds after mission start so that airfields captured with exotic methods (e.g. Olympus) still correctly work after mission reload
- massively upgraded convoy code and reporting ability
- added CH-47F Chinook to all airfields
- made Hook a troop carrier
- added cold Hooks
- added Hooks to the CSAR-enabled roster
- did not create a cold version (yet)

Version 1.51

- More code hardening
- Cleaned up group names
- COLD version added

Version 1.52

- Fix for FARP slot accessibility edge case (single/multiplayer)
- Added a single Su-25T (DCS free plane) Frogfoot to Nal, so everyone can start the mission.
- Set all AAA infantry orders to “wait-guard” while all Assault set to “wait-captureAndHold”
- Slightly upgraded the AI Cobra's bite

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/>