Abstract: The paper is an examination of thinking about harmonizing of air and land warfare at brigade level. The author gives general picture of doctrinal (knowledge) and organizational bases of the air/land integration. The theoretical base of the air/land integration is provided by the national and alliance doctrines and other warfare publications such as supporting air operations doctrines and counter land operations doctrines included close air support and air interdiction publications. The knowledge and practice of staff officers basically determined the level of harmonizing of the air and ground capabilities and activities.

Key words: military operation, air/land integration, operations at brigade level, air liaison officer, air forces.

INTRODUCTION

The wars of the modern age evidenced it that the wartime success (victory) only with suitable aerial warfare can be reached. This means it even more precisely that the victory or the success is equal to harmonized employment of all resources of the armed forces organized in different services (the Army, the Navy and the Air Forces).

Figure 1
CAS and AI in linear (traditional) battlefield (resources: AFDD 2-1.3.)

The main condition of the success is the execution of military operations planned with a joint approach.

I believe it with these thoughts I responded to the next question: Why necessary to know the most fundamental theoretical and practical questions of the air/land integration for the armed forces' officers?

In this article I would like to show some basics determining elements of system of the air/land integration (ALI) at brigade level.
1. SHORT SUMMARY OF DOCTRINAL (KNOWLEDGE) BASE OF THE AIR/LAND INTEGRATION

The theoretical base of the air/land integration is provided by the national and alliance doctrines and other warfare publications such as supporting air operations and counter land (CL) operations included close air support (CAS) and air interdiction (AI).

In the process of air/land cooperation the air forces can support land forces with wide range of air operations. In addition, mainly in the framework of peace support operations, the air forces can support brigades of the land forces within named air roles:
- Enforcement of the no-fly zone, air presence (AP).
- Supporting air operations including reconnaissance (Recce), airborne command and control, tactical air transport (TAT) and PR (Personnel Recovery)/MEDEVAC.

CAS and AI in non-linear battlefield (resources: AFDD 2-1.3.)

Close air support is an important element of joint fire support. According to definition it is air action by fixed-wing and rotary-wing aircraft against enemy targets that are in close proximity to own forces, and requires detailed integration of each tasked mission with the fire and maneuver of supported forces. The aim of air presence and close air support operations is to deter and, if necessary, neutralize threats to friendly forces. CAS must be coordinated closely with the activities of land forces and civilian organizations. Consequently, all CAS missions will be under positive control.

CAS requests, including immediate requests, will be determined by G3 Air. The ALO will determine if the target is suitable for aircraft or for land resources such as attack helicopters. If the target is suitable, the request is sent to the AOCC. Pre-planned CAS is conducted in 2 categories, scheduled and on-call CAS.

Scheduled CAS puts the CAS assets over the area of the battlefield where they are needed most at a pre-planned Time on Target (TOT) and where a need for CAS has been established in advance. Scheduled missions are more likely to have good intelligence on the expected type of target resulting in better weapons to target match. On call CAS involves putting aircraft on ground/deck (GCAS) or airborne alert (XCAS) during a period when the
need for CAS is foreseen. Immediate CAS usually results from unanticipated needs on the battlefield, often of an emergency nature, that require diverting or rescheduling aircraft from other missions.

Air interdiction are actions to divert, disrupt, delay, or destroy an enemy’s surface military and other relevant resources before they can be used efficiently against own forces. It involves air strikes that tend to affect operations of land forces in some hours (maybe days) as opposed to close air support which has an immediate advantage for friendly forces in direct contact with the hostilities.

Operations of enforcement of the no-fly zone are the same the counter air operations like offensive counter air (OCA) actions.¹

Air reconnaissance operations are the use of aircraft (UAV’s, helicopters) to obtain information of terrain, weather, and the position, composition, movement, installations, lines of communications, electronic and communication emissions of enemy forces. In addition it also included are artillery gunfire adjustment and systematic and random observation of battlefield, targets, and/or areas of airspace. Air reconnaissance information should be interpreted, evaluated and disseminated in near-real time to all commanders who may benefit from it. Air Recce requests will be coordinated by G2 and ALO within the MNB. G2 then forwards requests to the AOCC.

Personnel recovery is the combination of military, civil, and political efforts to obtain the release or recovery of personnel from uncertain or hostile environments and denied areas whether they are captured, missing, or isolated. MEDEVAC is the evacuation of injured persons from forward areas to the nearest hospital or base.


Helicopters needed for MEDEVAC will be tasked by G3 Ops, in cooperation with G3 Air and the Medical Officer. NATO Standard MEDEVAC procedures are as follows:
- The Senior Medical Officer, or officer/non-commissioned officer if no medical officer is available, on site will decide to request MEDEVAC
- A suitable helicopter landing site will be selected, cleared, secured and if necessary lit.
- A MEDEVAC request will be passed to MNB TOC using the standard nine-line format found in Part 5 of this MNB HB. The TOC will inform the Medical Officer but the TOC/G3 Ops will task the Aviation Unit to launch the stand-by MEDEVAC helicopter.
- If/when MEDEVAC is approved:
  ▪ FWFs will be informed of the flight.
  ▪ Direct comms should be established between the landing site and aviation unit HQ.
  ▪ The Medical Officer should inform the receiving hospital of the status of the patient.
- When the helicopter arrives, load patient(s), ensuring that weapons are unloaded and necessary medical immobilization precautions have been taken.

¹ OCA aim at against surface targets which contribute to the enemy's air power capabilities. The objective of OCA operations is to prevent the hostile employment of aircraft and missile forces by attacking targets such as missile launch sites, airbases, naval vessels, command and control points, storages, and other different supporting infrastructure. Attack operations may be performed by fixed- or rotary-wing aircraft, surface-to-surface weapons, special operations forces, or land forces.
2. ORGANIZATIONAL BASE OF THE AIR/LAND INTEGRATION  
(Staff elements and assignments (functions) at brigade level concerning ALI)

The key persons are working the air force’s resources and the army's aerial warfare abilities harmonizing in the staff.

The **G3 Air** responsible to G3 for air planning, specifically:
- Planning and requesting of all air operations in area of brigade.
- He/She is the air member of operational planning group of brigade.
- He/She acts as air desk officer in Tactical Operation Centre (TOC) of brigade.
- He/She liaises with tactical air control party (TACP), joint terminal air controllers (JTAC), aviation chief and Air Operations Coordination Centre (AOCC),
- He/She coordinates operations of organic air defence and ground based air defence (GBAD) with AOCC.
- He/She coordinates air defence plan and use of airspace.

The **G3 Air Defence** responsible for:
- Producing GBAD plan.
- Maintaining GBAD overlay.
- Coordinating MNB GBAD plan and airspace with G3 Air.
- Participating in operational planning group of brigade as necessary.
- Participating in targeting process.
- Disseminating air tasking order (ATO) and air space order (ACO) to air defence subunits.

![Diagram showing the organization chart of air and land integration](image.png)

Figure 3  
Key persons concerning ALI (by author)
The **Air Liaison Officer** (under BGD OPCON) responsible for:
- Advising commander and battle staff on air operations.
- Co-ordinating requests for air support with AOCC.
- Co-ordinating air space management between the brigade and AOCC.

The **Aviation Chief** responsible for:
- Advising the commander and staff on the use of organic aviation assets (mainly helicopters).
- Coordinating the use of organic aviation assets.
- Liaising with ALOs about airspace management.
- Liaising with G3 Air.

**CONCLUSION**

The air/land integration is one of the most complicated and important topic related to planning and carrying the tactical employment of brigades out. I think in the framework of this study I put pen (keyboard) to paper a summary of doctrinal (knowledge) and organizational bases of air/land integration.

According to my opinion knowledge and practice of staff officers basically determined the level of harmonizing of the “blue and green” capabilities. The ALO is “the Air Force” in staff of brigade with other words he/she is the representative of the Air Force and responsible for advising commander and battle staff on topics of air operations, coordinating requests for air support with AOCC and air space management between the brigade and AOCC.

The G3 Air is in “green uniform” he/she the first person among the officers of air cell and he/she stand for interests of commander of the brigade. The G3 have disposal of all potential air resources of BGD.
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