



The 17th International Scientific Conference
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RESOURCES MANAGEMENT FOR OPERATIONAL TRAINING

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Abstract:

Closing the gap between training, leader development, and battlefield performance has always been the critical challenge for any army. Overcoming this challenge requires achieving the correct balance between training management and training execution. Training management focuses leaders on the science of training in terms of resource efficiencies (such as people, time, right type of training conducted on right place/area with all the necessary resources provided as close as possible to the real operation) measured against tasks and standards. Training execution focuses leaders on the art of leadership to develop trust, will, and teamwork under varying conditions. Leaders integrate this science and art to identify the right tasks, conditions, and standards in training, foster unit will and spirit, and then adapt to the battlefield with the most important goal, to win.

Key words: resources, management, training, leadership, execution

1. Exercise Planning

Training can be as simple as performance oriented training on a soldier's manual task. It can also be as complex as a field training exercise (FTX) using MILES and opposing forces (OPFORs). The training phase requires guidance with appropriate resources based on long-range, short-range, and near-term plans.

Training in units develops and sustains those individual and collective skills that soldiers and units (including squads, crews, and sections) need to accomplish their missions. To help soldiers' and leaders learn and sustain their skills, commanders develop training programs that implement the best mix of individual, leader, and collective training.

1.1 Purposes

The diversity of organizations, equipment, and environment inherent in joint battles presents a major challenge to commanders. They must train soldiers and leaders who can effectively integrate the unit's weapon systems and doctrine to defeat an enemy that may be numerically superior. Training exercises are an effective way to build the teamwork necessary to meet this challenge. All training exercises:

- Sustain and reinforce individual and collective skills;
- Develop and sustain command and control skills of commanders and their staffs;
- Support multiechelon training.

1.2 Individual and Collective Skills

Training exercises combine individual skills, leader skills, drills, and weapon systems proficiency. Training exercises reinforce and sustain proficiency in individual and collective skills in units. In addition, exercises provide training on collective tasks and integrate all elements of the combined arms team based on each unit's Mission Essential Task List/METL.



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1.3 Command and Control Skills

Command and control training sustains skill proficiency for leaders, staffs, and individual soldiers. It reinforces common skills and those particular to duty positions. It trains each echelon to respond to the needs of higher, lower, adjacent, and attached combat, combat support (CS), and combat service support (CSS) units. Responding to subordinate units is particularly important. Inexperienced commanders and staffs tend to orient themselves to respond upward and overlook the needs of subordinate units. One of the prime purposes of training exercises is to teach leaders to orient on the needs of subordinate units in a sequence of timely troop-leading steps that allow units to execute the mission properly. Doctrine and training support materials for command and control training include such items as scenarios, simulation models, and recommended task lists. The unit can adapt these materials to address its unique METL assessment. These packages are for each echelon of the command, including combat support and combat service support.

To win the battles, all elements of the combined arms and services team must be integrated and need to function effectively on the battlefield. Commanders must be competent in their command and control tasks. Battle staffs must be proficient in executing staff planning responsibilities to achieve full integration of supporting arms and services.

1.4 Phases

Training exercises contain three phases: preexercise, execution, and postexercise. The preexercise phase covers planning and preparation. It ends with the start of the execution phase (STARTEX). The execution phase begins at STARTEX and concludes with the end of the exercise (ENDEX). During the execution phase, player units participate in the exercise, which is controlled and evaluated according to plans developed during the preexercise. The postexercise phase, beginning at ENDEX, covers reviews and reports. All training events and exercises should conclude with After-Action Reviews/AARs. These reviews provide training as substantive as the activity itself. In AARs, commanders determine accomplishment of exercise objectives based on input from staffs, Observer/Controller-Trainers (OCTs), evaluators, and OPFORs, as appropriate.

Participants should be encouraged to discuss what happened and why. They should be encouraged to suggest solutions and offer recommendations. To overcome shortcomings, exercise participants can make a valuable contribution to training evaluation efforts by gathering information and analyzing the critical lessons learned. These lessons become essential elements of information (EEI) for commanders and trainers in the ongoing training management process. AARs must be conducted periodically during the exercise to gain maximum training benefit. AARs should be used at every echelon, and they should occur as often as necessary to ensure that participants learn from the training conducted. If the exercise divides into deployment, attack, and defense, for example, an AAR should be conducted after each phase. If significant events, such as a movement to initial positions and a deliberate river crossing, occur in a phase, an AAR should likewise be held after each significant training event.

As soon after ENDEX as possible and prior to leaving the exercise area, OCTs or evaluators conduct an exit briefing for those players with whom they were closely associated during the execution phase. As soon after ENDEX as possible, the exercise director (EXDIR) prepares a formal after-action report for the unit commander. This report, which is distributed through the chain of command, is based on input from OCTs and/or evaluators. These reports and the AARs that precede them summarize the exercise. Commanders use them both to observe and evaluate staffs, leaders, and soldiers and to plan future training. The best use of these evaluations is to apply lessons learned to training within the near term, rather than to file for review prior to the execution of the next major exercise.

The planning phase must recognize the value of flexibility and the necessity for being thorough. Planners must plan for alternate types of exercises in case weather, lack of resources or



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Braşov, October 28th-29th 2021



other constraints prohibit the originally scheduled exercise. For example, if a brigade needs an Field Training Exercise (FTX) but there is a chance of funds being reduced or the possibility of excessive maneuver damage, contingency plans for a Command field exercise (CFX) or Command post exercise (CPX) should be prepared concurrently. Exercises must be flexible. They should allow subordinate commanders the freedom to innovate within the framework of new or existing doctrine, tactics, techniques, and operating procedures. They should not follow rigid timetables that inhibit training and learning. Instead, they should establish schedules that provide sufficient time to correct mistakes and ensure learning and AARs at all levels.

1.5 Resources

Once a headquarters decides to conduct a training exercise, the needed resources must be identified and procedures begun to obtain them. The general steps below must be taken before beginning detailed work. They indicate whether the exercise can meet the training objectives. If any area appears inadequate, the commander must decide whether to proceed or consider an alternate training activity.

1.5.1 Facilities and Land

Planners must consider the environment for the exercise and the impact of weather. If inadequate land or facilities will seriously degrade training, planners may have to alter the exercises. For example, if an FTX has been selected but the available training areas are not large enough to allow unit tactics to be realistically played, the planners may reduce the number of units in the exercise. Use a Map Exercise (MAPEX), a Command Post Exercise (CPX) or a Computer Assisted Exercise (CAX) in place of an FTX. Conduct the exercise at a lower echelon. Range facilities usually limit Live Fire Exercises (LFXs) to company team level. The exception is the Joint National Training Center (JNTC) at Cincu. At the JNTC, resources and distances permit LFXs at battalion task force level. Except for scaled range training, range limitations also restrict Fire Coordination Exercises (FCXs) to small units. Battle staff training during FCXs is generally limited to Fire support coordination or Fire control.

1.5.2 Support

Training exercises require support. Some exercises consume large quantities of allocated resources such as fuel, spare parts, flying hours, and maneuver area time. The planners must ensure that the exercises can be conducted within the resource levels and that the training received justifies the resources expended. Commanders and staffs ensure that internal and external support equipment is sufficient. For example, communications assets and transportation for players, OCTs, and evaluators must be adequate. Player units, including HQs, should use only organic transportation, communications, and equipment. Doing so teaches them to employ the full capabilities of the unit. They should not rely on outside assistance to replace systems that are not mission capable or to beef up the authorized strength of the staff. OCTs and evaluator's equipment must not come from player units.

1.5.3 Time

The time allocated for each exercise must permit appropriate troop-leading steps to be exercised, as well as develop tactical situations that lead to logical and sound tactical employment of player units. The time should also be allocated for conducting complete logistical support of tactical operations, as well as for appropriate AARs.

1.5.4 Participants

Planners must consider whether or not units or groups of individuals to be trained are of the proper size or strength to benefit from the type of exercise selected. For example, the soldiers of a tank platoon consisting of two-man tank crews can be expected to gain very little from an LFX. Personnel shortages might also cause commanders to conduct CFXs rather than FTXs.



The 17th International Scientific Conference
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IN THE 21st CENTURY”**
Braşov, October 28th-29th 2021



1.6 Battle Simulations

Battle simulations, both manual and computer-assisted, provide effective training in many battle staff skills. Battle simulations can be used with virtually any scenario. They are readily adapted to specific local conditions and unit missions. Simulations will not correct all command and control training problems or substitute for field training. If properly used, they can provide a readily acceptable means for exercising significant elements of the command and control system. Battle simulations have the following characteristics:

- a) They are relatively inexpensive;
- b) They do not require large training areas;
- c) They save training time;
- d) They reduce preexercise and postexercise requirements;
- e) They are flexible and easily tailored to unique training objectives;
- f) They can present situations (nuclear, chemical, tactical air) that cannot be reproduced in other training environments because of safety or expense;
- g) Battle simulations encourage multiechelon training. Higher and lower echelons can be exercised simultaneously with a minimum expenditure of valuable training resources;
- h) Simulations can portray joint service operations involving the Air Force, Navy, and Special Operations Forces, as well as the combined elements of other nations. Battle simulations can also portray various equipment mixes or degraded operations, allowing commanders and staffs to exercise back-up systems and procedures;
- i) Battle simulations provide realistic cues and feedback to the command as a result of decisions made by higher, lower, and adjacent units. Each command group executes and subsequently modifies its plans, based on the situation. Simulations force command groups to adjust plans, organizations, assets, and firepower to cope with changing battlefield situations. They may also force adjustments in command post configurations and procedures to deal effectively with unforeseen situations.

Battle simulations can create unique mixtures of organizations, equipment, missions, and operational situations. They do this while realistically portraying the unit METL.

Tactical engagement simulations such as Multiple Integrated Laser Engagement System (MILES) add significant realism to field exercises. They do so by confronting leaders and soldiers with realistic simulations of direct fire weapon systems in a training environment. Only units that have demonstrated high levels of proficiency during battle drill and situational training exercises (STX) should use MILES for training. Because MILES is the most realistic training sort of actual combat, it should be approached with detailed planning that keeps the training objectives clearly in mind.

1.7 Resource planning

Developed early in the process, resource requirements will ensure full and timely completion of the planning effort and resource allocation. Exercises require extra planning and preparation time but also necessary resources to be fielded in accordance with the training and exercise objectives.

2. Combat Training Center Program

A Combat Training Center (CTC) represents a structure that ensures training quality progress and training evaluation, for military structures and headquarters, as well as for the military personnel participating in individual missions, using real-time, constructive, virtual and integrated simulation technology, by creating an operational environment close to the realities of the modern battlefield, and, last but not least, by making existing facilities and capabilities available for training.

The goal of a CTC is to provide rotational units a realistic, relevant, and stressful environment where the unit can effectively employ their systems as they intend to when deployed.



The 17th International Scientific Conference
**“DEFENSE RESOURCES MANAGEMENT
IN THE 21st CENTURY”**
Braşov, October 28th-29th 2021



The object of instruction in CTC consists of training leaders/commanders, HQs and force structures in planning, preparing, leadership, as well as evaluation/analysis of military actions in a joint, combined, multinational and inter-institutional operational environments.

A mission statement for a CTC will for sure include at least:

- Provide tough, realistic, battle focused, combined arms training to improve readiness, security and war fighting capabilities;
- Provide simulated combat training exercises for task organized units across the full spectrum of operations;
- Focus training on improving readiness by developing soldiers, leaders and units;
- Plan, coordinate, and execute exercises to prepare units for full spectrum operations;
- Achieve and sustain leader development and unit readiness using a combination of live, virtual, constructive, and gaming (LVCG) training domains.

2.1 The role of CTC in the collective training of HQs and military units

CTC provides the training capabilities necessary to develop/maintain the capacity to plan, prepare, lead and evaluate the actions of the military structures for mission accomplishment as well as troop generation/regeneration. The role of CTC covers two fields. Thus, the exercises conducted within CTC will ensure optimal conditions to perfect the skills of the military personnel when conducting the operation planning and coordination process, which commences upon OPLAN/OPORD/FRAGO/WARNO issuance by the unit instructed by the structure leading the exercises. Subsequently, accessing the Tactical Orientation Program (POT) developed by CTC, will provide the elements necessary to develop a complete and complex picture of the operation, which is necessary to various continuous, integrated and complementary planning processes that contribute to improve the skills of the staff personnel as well as of the unit commanders in planning, preparing and conducting operations.

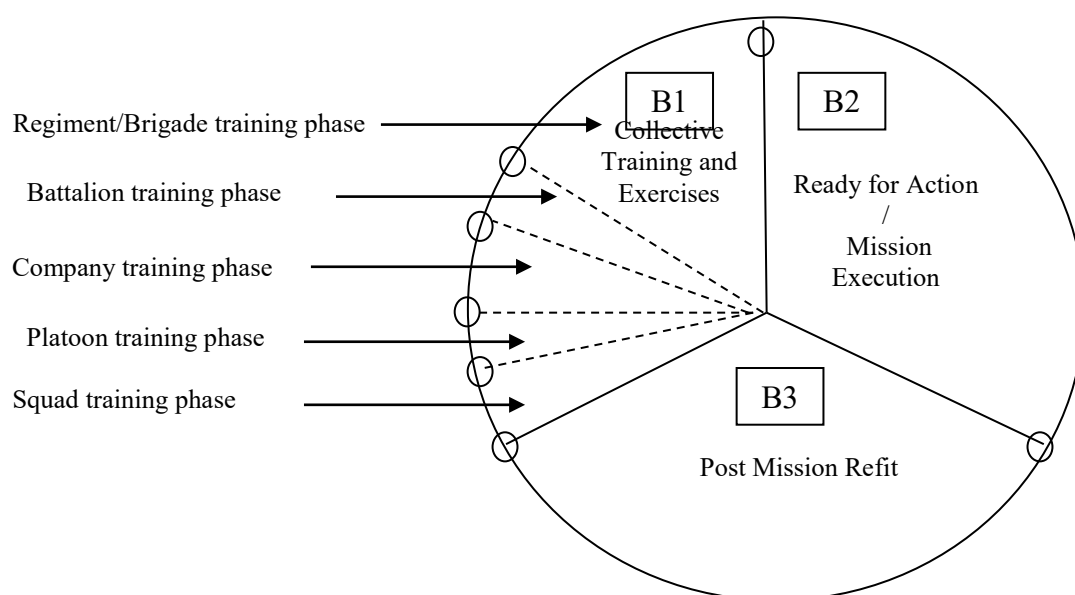


Fig. 1 – Armed Forces Training Phases



The 17th International Scientific Conference
**“DEFENSE RESOURCES MANAGEMENT
IN THE 21st CENTURY”**
Braşov, October 28th-29th 2021



CTC is involved in the force training process during collective training by conducting various specific programs addressed to HQs as well as the forces themselves. CTC supports the training process of the units upon orders from the higher echelons or upon requests from the beneficiary units. Individual training is the attribute of the rotational training unit (RTU) commander, the role of CTC being only to establish how the provided resources are used and to provide training capabilities that are not available in the RTU facilities.

The exercises conducted in CTC represent the culminating event in the training process of the military units. CTC provides the units participating in simulation training activities with modern technology, as well as capabilities that ensure interconnectivity with the national simulation network (ROU NAT SIM NET) and/or similar training centers in Europe, NATO member states or partner countries.

So, having an operational training capability like a CTC, the quality of training for the units is certainly increased. This is where the Army should be headed, to a fully integrated training environment – that combines the goodness of training schools and institutional training organizations, together with the home station training, and with live – virtual – constructive and gaming capabilities of a CTC. This was the main goal of Romanian Land Forces by creating, formerly named the Land Forces Combat Training Center, and after that the Joint National Training Center (JNTC), which is for sure a big achievement in order to ensure that readiness goals are maintained and the combat ready units are fully prepared.

At the same time, we need to be aware that this type of operational training capability must be well maintained, resourced, and developed, as necessary. In times of crisis, “capabilities, the solution to providing the required capabilities cannot be the increase spending, as the economic outlook for the coming year is not very optimistic and an increase in the defense expenditures is not realistic. A possible solution would be a better specialization and focus of the scarce funds on key areas, increase the focus on interoperability, flexibility, cooperation and pooling of resources”[1].

2.2. DOTMLPFI way:

2.2.1 Doctrine

Several doctrines were developed over the years to settle the activities conducted by JNTC. At the moment the last version of „Order relating the activities conducted in JNTC” is issued towards the Land Forces Commander for the official approval. In addition with the „Army’s Concept of using simulation systems in training”, „Land Forces’s Concept of using simulation systems in training”, JNTC’s „Exercise Procedures/EXPRO”, JNTC’s „Administrative procedures/PROADMIN”, „AAR Guide”, and some other official implemented documents, the necessary doctrinal framework is set.

It is worth mentioning that the „Order relating the activities conducted in JNTC” probably should be officially implemented through necessary orders issued by Chief of Defense, taking into account the joint multinational level of exercises. Also, for the multinational exercises, a set of tactical Standing Operating Procedures for the Higher Control (HICON) still need to be developed.

2.2.2. Organisation

Probably there is all the time something that may be improved in the organisational chart, but all the necessary things are there: (i.e. Exercise Planning sections, OCTs sections, technical service and support for simulation, research and doctrine experimentation and validation section, OPFOR structure, training support structure, administrative and logistic support, etc.). Even more, in case of necessary, this organisational chart may be quite easily adapted in order to transform this training center into a Regional Training Center as NATO asked for the member nations to come with some proposals for. And JNTC is a very valuable proposal for that, but a final decision from NATO was not yet gotten.



The 17th International Scientific Conference
**“DEFENSE RESOURCES MANAGEMENT
IN THE 21st CENTURY”**
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2.2.3. Training

The personnel involved in planning, preparing and conducting of the specific activities is generally very well trained, experienced and dedicated. Very particular in this field is that their job is very specific and unique, with no any other corresponding positions in the Romanian Army. That is the reason, is very difficult to rapidly integrate the new commers. Continuous effort should be done in order to mantain the level of profficiency of the personnel.

The training activities conducted by the beneficiaries / military units, are more and more complex, various and require a lot of resources, including augmentees for the JNTC specialized personnel. Even if there are all the necessary training programs for the specialized positions already developed, there should be clear enough that the augmentees will never be able to conduct their specific activities at the required level of proficiency, like the permanent parties of JNTC specialized personnel. For example, an US OCT team from Joint Multinational Readiness Center/Hohenfels/Germany having more than 40% augmentees inside the team, will declare that they cannot be effective. JNTC should reach the level of workforce during the exercises paying also attention to not exceed the same percentage of augmentees for the specialized personnel.

The level of exercises conducted in JNTC is continuously rising. Even more, the number and level of multinational headquarters fielded in Romania by NATO increased (i.e. Multinational Corp South-East), so they are going to conduct training activities using, for sure, the simulation systems. This will require the necessary trained personnel to cover all the planning, preparing and executing tasks for the exercise process.

2.2.4. Materiel

JNTC is fielded with a lot of the necessary tools to conduct a realistic and challenging training, using the simulation systems. But the licenses for the operating systems and for the specialised software still require a lot of money. Also, upgrades for the computers or to replace these, the operation & maintenance costs for the real simulation systems and to increase the number and type of these is very high. The level of exercises should be planned taking into account the availability of these pieces of equipment and also necessary other consumables like batteries, generators, blank ammunition, pyro means, spare parts, etc.

2.2.5. Leadership development

Leader development is not something best left to chance. Successful commanders plan, execute, and assess leader development as similar for training process. In this respect, the JNTC Commander or Deputy commander for training determines how the planning and preparation process for the exercise was conducted. He conducts pre-execution checks for training to ensure equipment is present and serviceable, simulation systems are set and ready to use, trainers are prepared, and training resources, such as training areas, facilities and mission-specific equipment and ammunition, are resourced. It is also the time to ensure risk management worksheets have been prepared and reviewed. Once training is completed, internal after action reviews (AAR) are also conducted to find what shortcomings need to be addressed in future training events, and strengths that can be capitalized upon.

All the leaders teach, coach, and mentor through-out the planning, preparing, execution and assessment of the training operation (it includes but is not limited to, leaders, evaluators, observer-controllers-trainers, OPFOR personnel and role players, training support personnel, etc.). The Commander participates and oversees the training and uses information gleaned from after-action reports and his assessment to determine if the training was effective and contributed to the readiness of the unit.

Also, JNTC developed a Leaders training program in order to better prepare the training activities conducted with the use of simulation systems. A continuous attention should be payed to to implement and keep it updated.

2.2.6. Personnel



The 17th International Scientific Conference
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IN THE 21st CENTURY”**
Braşov, October 28th-29th 2021



This is a crucial resource for JNTC. Having in mind the necessity to count on a very specialised personnel in carrying on all the specific activities, the JNTC need to be proper resourced with right persons, on right positions, at the right time, in accordance with the number and level of activities preplanned.

2.2.7. Facilities

Currently, JNTC implemented a lot of training infrastructure projects in accordance with its Master Plan and the work is still in progress. But for sure, there is no any other military training facility in Romania having the same level of development. Even if there is still a lot to do in this field, the big achievement is that a lot of ongoing projects are resourced and the Master Plan is updated yearly. Till now, there were implemented around 50 training infrastructure projects using national and foreign military funds, with a total of almost 35 million dollars (+ 4 mil euro NSIP) for training infrastructure and other about 30 million dollars for simulation systems. A percent of around 35% is national contribution to these. A continuous effort is needed to maintain and to keep these facilities at the right level of serviceability.

2.2.8. Interoperability

JNTC conducted till now a lot of multinational exercises, with a huge number of participants, being connected with many similar training centers across Europe (Germany, Bulgaria, Ukraine, Lithuania, and Slovenia). And more than this, as far as we are tracking, our EXPRO is currently in progress to be adapted and fielded in Turkish and Portuguese Armies, which is a quite big achievement.

Currently, JNTC is in progress to get the official accreditation for the connection to Combined Federated Battle Laboratory Network, which is a Persistent Training Environment, developed for the similar training centers across Europe. This opportunity will allow a larger scale and an increased number of training events but will raise also a lot of challenges like planning teams, technical competence, specialized personnel availability, resources allocation, etc.

3. Conclusions

Understanding “How the Army Trains the Army” to fight is key to successful joint, interagency, multinational, and combined arms operations. Success in battle does not happen by accident; it is a direct result of tough, realistic, and challenging training. The Army exists to deter war, or if deterrence fails, to reestablish peace through victory in combat. To accomplish this, the Army's forces must be able to perform their assigned strategic, operational, and tactical missions. For deterrence to be effective, potential enemies must know with certainty that the Army has the credible, demonstrable capability to mobilize, deploy, fight, sustain, and win. Training is the process that melds human and materiel resources into these required capabilities.

Romanian Joint National Training Center represents a great capability to increase the level of training and is currently considered as being the changing engine for the Army's core competencies and capabilities. We train the way we fight because our historical experiences show the direct correlation between realistic training and success on the operation. Today's leaders must apply the lessons of history in planning training for tomorrow's battles.



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IN THE 21st CENTURY”**
Braşov, October 28th-29th 2021



References

- [1] Constantinescu, Maria, “The Influence of Economic Crises on the Capability Packages Development”, The 17th international scientific conference Knowledge-Based Organization 2011, Land Forces Academy, Sibiu, 2011 Conference proceedings 2 Economic, Social and Administrative Approaches to the Knowledge-Based Organization, ISSN 1843-6722
- [2] THE AZIMUTH, Vol. 9, No.1, January 2012, Foreword from the Chief of Training (ARNG-TR), National Guard Bureau, Colonel Robert J. Howell;
- [3] FM 7-0 (FM 25-100), Training the Force, Headquarters, Department of the Army Washington, DC, 22 October 2002;
- [4] FM 7-1 (FM 25-101), Battle Focused Training, Headquarters, Department of the Army Washington, DC, 15 September 2003.