JPRS L/8726

22 October 1979

USSR Report

MILITARY AFFAIRS

(FOUO 32/79)

FBIS FOREIGN BROADCAST INFORMATION SERVICE

APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000100100035-1

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

For further information on report content call (703) 351-2938 (economic); 3468 (political, sociological, military); 2726 (life sciences); 2725 (physical sciences).

APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000100100035-1

JPRS L/8726

22 October 1979

USSR REPORT

MILITARY AFFAIRS

(FOUO 32/79)

CONTENTS

SOVIET COMMENTS ON PUNITIVE FUNCTIONS OF U.S. ARMED FORCES

Moscow ZARUBEZHNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79 pp 10-15

/Article by Capt 1st Rank T. Belashchenko: "Punitive Functions of the U.S. Armed Forces"/

/Text/ One of the basic functions of any imperialist government's armed forces in modern times, as before, is the suppression of the working masses protests, of national minority liberation struggle actions, and of national liberation movements in colonial and dependent countries. V.I. Lenin pointed out that in the bourgeois society, the army is always "a weapon of reaction, a servant of capital in the struggle against labor, an executioner of public freedom" (Complete collected works, vol 12, p 113).

The ruling circles of the chief imperialist government in the world, the United States of America, employ troops against the working people particularly widely. Throughout its more than 200 year history, the U.S. armed forces have been an instrument of reaction, one of the main resources in the struggle of monopolistic capital against the working masses.

For modern America, as for any other bourgeois country, characteristic acute society polarization exists, brought to the extreme by the monopoly of the economy by major capital, the notorious "big business", the workers are shamelessly exploited, and are deprived of their economic and political rights. Living conditions deteriorate from year to year for large groups of people, as inflation affects their material position primarily. Over the course of more than a decade, the U.S. has consistently displayed gloomy records in the capitalist world for unemployment, numbers of unfortunate or dis-advantaged, and a general lowering of the standard of living.

A situation such as this exerts considerable influence upon the political climate in the country and upon the prevailing mood there. Labor strike movements grow continuously. At the same,

a sharp increase is noted in the activity of national minorities, particularly of the black segment of the American population, which speaks out against racism and racial discrimination. The economic and national-liberation struggle in the U.S. has in recent times, taken on a political tinge more and more frequently. Laboring masses protest against the growth of militarism in the country and its aggressive foreign political stance, increased authority of the military-industrial complex, and the activization of right-wing forces. Of considerable significance is the fact that anti-government moods continue to make themselves felt, particularly those developing during the struggle of progressive forces in America against the imperialist's war in Indochina.

All this has resulted in a stronger, more than in any other bourgeois country, acute antagonistic conflict between labor and capital, the broad strata of the public on one hand, and the bosses of the military-industrial complex, the reactionary and military-political rulers on the other.

As is known, 35-40 million people participate in stoppages, strikes, meetings, and demonstrations annually in the developed capitalist countries, a considerable share of which occur in the U.S. For just the period 1977-1978 more than 320 major stoppages were recorded in the main industries and several hundred national minority actions were noted, dozens of cities were the sites of mass meetings and demonstrations in defense of civil rights for the American people, in support of numerous political prisoners, thrown behind bars in "democratic" America. The peace movement is ever expanding in the country, its supporters speaking out for further detente, against its opponents from the midst of American ultra-conservative circles.

The political leadership of the U.S. responds to opposition of its internal policies with increased punitive measures and programs against the dissatisfied elements, utilizing all agencies of the governmental machinery, including the armed forces agains the "internal enemy".

Use of the army in the struggle against workers in the U.S. has a long history, with origins in the times when the United States had yet to come into being as an independent government. The ruling circles in America have always viewed the armed forces as the main base of support in the struggle with the masses and national minorities. At the outset of the United States' very existence, peoples uprisings from the poor farming segment under the leadership of Daniel Shays and John Brown were mercilessly put down with soldiers' bayonets, army units were frequently used to suppress industrial worker strikes, participated on the side of racists in reprisals against negroes, indians, and other American outcasts. Armed suppression of public dissent

assumed even broader scale after the U.S. entered the era of imperialism. According to the accounts of the military historian Yu. Metvin, during the period 1900-1960, american troops took part in "more than 500 operations to put down uprisings and excesses".

Growing economic difficulties, continually deteriorating the material situation of the workers, and profound social upheavals experienced by the United States over the past two decades have exacerbated the situation in the country even more. A powerful impetus for strengthening the political struggle, as already noted, was the extremely unpopular war in Vietnam. At the end of the 60's and the beginning of the 70's, there occurred an unprecedented wave of public protests. Troops were called out against people in the streets and weapons were used.

During the years 1967 through 1974, U.S. armed forces were used more than 600 times "to combat internal disorders", and approximately 500,000 soldiers from "national guard" units and regular forces participated in punitive operations. Those operations were carried out with extreme brutality. In Washington alone in April of 1971 during the armed suppression of mass anti-war protests (the entire 82nd Airborne Division and a number of other units participated in punitive actions) 12 people were killed, and more than 1,200 demonstrators were wounded, with more than 13,000 persons being arrested. Troops participated in dispersing operations against demonstrations in Chicago, Detroit, New York, and other cities. According to information from "Army" magazine, during the period of U.S. aggression in Vietnam, just the major operations against "rioters" during which troops were compelled to show their presence, but also to employ arms numbered more than 200.

Serious clashes between the army and the masses have occurred over a period of many years for racial reasons. American troops have many times been employed by the federal government and state authorities to put down "race riots" in the South in the cities of Birmingham, Selma, Pittsburg, Montgomery, and others. The southern states however, are not exceptions. Actual battles lasted almost a week against the civil rights fighters in the black ghetto of Los Angeles--the section of Watts. The command assembled not only rifle units, but also tanks and artillery. Troops and police killed 36 persons and over 1,000 "rioters" were wounded, to include not only blacks but whites as well.

With current conditions of deep instability in the internal situation of the U.S., the country's reactionary circles, its military-political leadership fearing new upheavals, are devoting particular attention to problems involving armed suppression of protests from the dissatisfied masses, the struggle on the

"internal front", and are demonstrating particular concern regarding training and use of troops against the workers. The american administration is allocating considerable effort and resources toward those goals, the army is conduting intensified training, and industry is producing special weaponry and ammunition. Attempts are underway also to legally justify the right of the bourgeois government to employ arms against the people. Special regulations, manuals, and instructions are being developed governing the use of troops against workers, national minorities, and other such "internal enemies", "rioters", etc.

The basic manual or regulating document of the U.S. Army in this area is the manual FM 19-15 "Civil Unrest and Disasters" in which the following questions are examined in a most detailed manner: conducting reconnaissance of area where a potential threat of unrest erupting exists, tactical methods of combat operations against "rebels", the use of arms, methods of "crowd dispersal", and others. "Knowing your enemy on the street," the manual states, "is just as important and knowing your enemy on the battle field". Required reading for officers are such publications as the text, "Riot Suppression", prepared by Gen S. Wood, and the brochure of Col R. Applegate, "Crowd Dispersal and Combat with Rioters". Materials of a similar nature are systematically published by the "Army" magazine, "MarineCorps Gazette", and other military publications.

Imperialist circles and the higher military leadership of the U.S. consider the operations against the "internal enemy" as one of the important types of military action of forces, and constantly require "the most decisive and relentless actions" from the servicemen. For example instructions issued to the commander of the sub-unit called to suppress "rioters" are provided in article 112 of the FM 19-15 manual: "Army units taking part in the dispersal of rioters always operate with fixed bayonets...The rifle or carbine is located in the "at the ready" position, with the bayonet aimed at the throat of the rioter...in the event arms are employed, it is best to use the deep thrust. The eye is fixed on that place of the rioter's body where the thrust is to be carried out, the rifle is gripped firmly in the hands, and with a thrust of the right foot, an abrupt stabbing motion is executed...If necessary, the stock of the weapon may also be used...".

Another recommendation contained in that same manual needs no comment: "Rifle fire is the most effective form of action against rioters. After the decision is made to open fire, it is necessary to act decisively and relentlessly. In no case should the troops be issued blank ammunition. Blank fire and firing over the heads of the rioters is marginally effective, and is therefore inefficient. It is necessary to fire not to wound, but to kill..."

Conducting armed operations against the workers is reinforced also in the organizational structure of the U.S. military agency, the Pentagon. In 1970, a special authority was created in the armed forces, the directorate to combat civil unrest, as a part of the army staff (ground forces). The directorate is primarily vested with the missions of providing for readiness of forces to participate in combat with "rioters" and the coordination of those actions on a country-wide scale. The army staff places at its disposal up to six infantry and motorized infantry brigades, stationed in various areas of the U.S., and thoroughly trained in action against "rioting crowds". Action of this sort, it goes without saying, is not limited to the specially allocated units. Foreign specialists note that in 1968 the training of troops in methods and tactics to "suppress civil disorders" was introduced as a required discipline in the military training system for army and marine corps units.

To undergo the so-called "higher course" of training for participating in punitive actions servicemen are sent in small groups to army training centers at Fort Sheridan, Fort Belvoir, Fort McNair (near Washington), and also Fort Gulik (transliterated from the original) in the Panama Canal Zone. The primary training mission of the servicemen, in the words of the magazine, "U.S. News and World Report" is to train them for conducting "operations to suppress riots and rebellions organized now on large scales by the communists and their allies". Characteristically, concurrently with american troops, large contingents of troops from other countries undergo training at these training centers "for combatting the internal enemy", including Chile, Paraguay, Haiti, and Nicaragua, where anti-popular juntas and regimes are maintained only through force of arms and the armed suppression of workers' protests.

According to information of the "Army Times", the basic training course in such training centers, specifically at Ft. Gulik, i designed for 30-40 weeks. It includes study of tactics for conducting punitive actions in populated areas and counter-insurgency operations in U.S.-dependent countries and colonies, methods and techniques for conducting combat in suppressing "riots", actions in mountainous, wooded, and swampy areas, and also the use of various types of weapons (rifle, artillery, chemical) against "rioting crowds", and the use of helicopters and armored personnel carriers.

Command constantly strives to intensify the training process, to make it more easily understood, more graphic. For this, in the centers where the training of the punitive units is conducted, special training centers are set up, called "Riotville" (from the English word riot). They constitute, as noted in the "Army" magazine, "a typical American populated area", in which the

trainees receive object lessons: how to best act in the dispersal of "a rioting crowd", which methods are used to identify "instigators and agitators", how to use weapons, etc.

Particular attention is given combat action tactical training. The exercise here is conducted bilaterally. The "rioting crowd" is formed from specially trained servicemen from organic training center teams, dressed "for persuasiveness" in civilian garb and made up as "women", "juveniles", and "agitators". During such exercises, loudspeakers broadcast various noises (roar of the excited crowd, screams of women, children crying, etc.). Soldiers and officers are required "to be decisive and relentless in any and all situations", "not to yield to any subterfuge of the rioters".

"At times," one of the training aids for the suppression of internal disorders states,"women and even children may precede the crowd. This must not confuse the troops. In every situation, the troops must act decisively, remembering that they are facing enemy elements which must be neutralized at all costs".

The struggle of the laboring masses, of national minorities in the U.S. for their rights, and national-liberation movements in colonial and dependent countries compel the ruling circles of America, the punitive organs of the American bourgeois society, and the defense department to ever more actively prepare for new clashes with working people, and for the armed security of its own rear area. The Pentagon developed and introduced a number of special instructions to augment the manual FM 19-15, specifically "Use of chemical agents in operations against rioters", and "Peculiarities of conducting operations for the suppression of riots in populated areas". Considerable attention is paid to improving the effectiveness of existing and building new types of weapons, ammunition, and technology for use in operations against the civilian populace.

Scientific research and design work in the above area is conducted chiefly in a special laboratory of one of the U.S. Department of Defense research centers. "We must," one of the directors of this center, J. Matthews, wrote in the pages of the magazine, "U.S. News and World Report", "develop more widely the technology for combatting rioters and use them wherever possible, otherwise the army in a very short time will be facing most serious difficulties".

Currently U.S. armed forces are equipped with various weaponry and combat equipment designed specially for combatting "civil disorders". In addition to various models of special rifle weapons (carbines, close battle automatics, pneumatic rubber bullet firing rifles, etc.), they possess "anti-insurgent" armored personnel carriers with side shields-grids (high voltage), armored vehicles with powerful hydropumps and foam cannons, various engineering equipment (machines for laying wire obstacles

in streets, armored bulldozers for destroying barricades, clearing barriers, and others).

Chemical weapons occupy a special place among agents to suppress the "internal enemy".

"Until recently," as is noted in R. Applegate's brochure, "civil disorders in our country were put down with rifles only. Today, such means are augmented by chemical agents. They allow troops to rapidly and effectively, without incurring material damage, to paralyze the actions of the rioting crowd. True, at times protests are voiced against the use of chemicals during the suppression of disorders which arise as the result of labor conflicts and racial frictions. But this must be answered as follows: a riot is a riot, and to suppress it, it is necessary to act in the most decisive manner".

Intensifying the training of its troops for combat with the workers, the American military leadership devotes considerable attention to moral-psychological training of personnel for the unseemly role of punisher and executioner in its own government as well as in colonial and dependent countries. Military propagandists and all agencies for ideologically processing the people and army and navy personnel utilize as widely as possible the bugbear of the "red danger", the notorious, thoroughly fallacious myth of "communist penetration", "the hand of Moscow", etc. The fantansy of the "communist soviet fifth column" is used, to which reactionary forces in bourgeois countries resort to, including the U.S. to fan psychosis, to intimidate inhabitants, and to widely employ "witch hunts", of organized reactions for reprisals against progressive forces. American media systematically publishes falsifications about "soviet spies", of allegedly recruited "simple-minded duffers", o "secret submarines", which deliver "subversive elements" to the U.S., Kremlin directives, large sums of money (in the summer of 1977, a number of american papers published accounts that "somewhere on a Florida beach," a "soviet ruble" was picked up by someone, and others. Speculating on such conjectures, reaction pulls through anti-people, anti-worker laws, attempting to convince the inhabitants that all the many conflicts in american industry, racially motivated clashes, and the anti-war movement along with other protests from the public "are inspired by Moscow" "are brought in by communists", and therefore, it is said, force is not to be spared, and no measure is to be rejected, even the most extreme measures, to relentlessly suppress those protests.

Such ideas are intensively implanted even amog american soldiers and sailors through the use of various media resources. Molding of servicemen is facilitated by the fact that the U.S. Armed Forces are professional hired forces, the personnel of which,

although the majority is drawn from the working strata of the population, nevertheless are separated for extended periods from their class, are corrupted by graft and bribery, relentlessly suppressed by all means of disciplinary action, and as a result, are, as a rule, prepared to carry out all orders of the bourgeoisie as in the conducting of the aggresive wars and occupational ventures abroad, and in performing the filthy role of their own people's executioner.

The broad training of punitive troops in the U.S., the daily use of armed forces for the suppression of the public protesting against the yoke of the military-industrial complex, the arbitrariness of racists, the increasing growth of militarism and intensification of reaction, increases the anti-people nature of the army and navy of the U.S., dangerous instruments in the hands of american imperialism, a most evil enemy of the workers, a weapon of aggression in foreign policy, and a gendarme-political force in the service of capital inside the country.

8851
CSO: 1801

SOVIET COMMENTS ON NEW U.S. CIVIL DEFENSE PROGRAM

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79 p 26

/Article by Maj V. Goncharov: "New U.S. Civil Defense Program"/

/Text/ At the end of last year, U.S. President Carter approved a new civil defense program for the country for the period to 1985. It is proposed to allocate more than 2 billion dollars for program implementation, which will result in more than a two-fold increase in annual expenditures for CD purposes.

Improvment of U.S. civil defense is planned primarily through the development of effective programs for the evacuation of the population during threat periods from regions of "heightened danger" (400 in all) which, in the estimation of the U.S. command would be primarily subject to nuclear missile attack by the probable enemy. In the opinion of American military specialists, organized evacuation of the population, if the crisis escalates slowly, would provide for the saving of approximately 70 million additional people. Currently, according to foreign press evaluations, plans now developed embrace approximately 15 percent of the population earmarked for evacuation.

The new program envisages operations to identify and pre-equip shelters in the anti-nuclear respect, improve the effectiveness of warning and communications systems during emergency situations, build protective shelters for federal and local authorities, organizing training programs for the population for action during threat periods, and also to conduct scientific research in this sphere. Specifically, a decision was ratified to build a CD dedicated satellite communications system in 1981. It is designed to improve the reliability of alerting federal authorities and state administrative organs during emergency situations, and also for the control of civil defense manpower and resources in the event of a nuclear missile attack upon the territory of the U.S.

It is considered that the program will be based on the operation

of a new federal agency--the Office for Emergency Preparedness (Administration for Emergency Actions). It is to be established in 1979 based upon the Office of Civil Preparedness with a number of attached organizations now participating in various civil defense programs throughout the country.

8851
CSO: 1801

SOVIET COMMENTS ON NATO AIR-SPACE RECONNAISSANCE CAPABILITIES

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79 pp43-46

/Article by Col-Engr L. Safronov (Ret), Candidate, Technical Sciences, Docent: "NATO Overhead Reconnaissance Capabilities"/

/Text/ In the opinion of the NATO aggressive bloc military leadership, overhead reconnaissance is considered the most important way to insure effective use of modern weaponry. The U.S. and other member-countries of the North Atlantic Treaty Organization possess a large arsenal of resources designed for carrying out reconnaissance of the Soviet Union and other socialist states, and also for the broad utilization of those resources during combat actions. Capabilities of those resources, in the estimation of foreign specialists, are determined by the following factors: tactical-flight properties of the platforms--space vehicles and aircraft; specifications of onboard reconnaissance equipment and ground-based equipment for collection and processing of data, and also the training level of service personnel.

American military specialists consider that the primary means for conducting global strategic reconnaissance during peacetime are artificial earth satellites (ISZ). These are assigned the missions of detecting military, industrial, and other types of objectives of the probable enemy, of uninterrupted surveilance of their activities and status, determination of ICBM launches, tracking aircraft flights and ship passages, determining and evaluating natural resources, and forecasting meteorological conditions. Depending upon the specific missions, these ISZ are assigned the necessary orbital parameters and the proper mix of their reconnaissance equipment is determined.

Specifically, the American ISZ, "Big Bird", tasked with scanning and detailed reconnaissance of the territories of the Soviet Union and other socialist states, has the following orbital parameters: inclination 95-97 degrees, perigee 150-180 kilometers, and apogee 270-340 kilometers. According to foreign press information, the

satellites mount cameras with varying focal lengths, radio-electronic, radar, and television reconnaissance equipment.

In building the reconnaissance ISZ and associated equipment, American experts consider that satellite orbital parameters and equipment specifications must provide for receiving images of the earth's surface with a resolution capability enabling ground-based objectives to be detected and identified. In evaluating the requisite resolution capability of equipment for reconnaissance of various objectives, they utilize the values listed in table 1.

The following information was published in the American press concerning the ISZ "Big Bird": certain of the onboard cameras have resolution capabilities to areas 0.3 meters; accuracy of determining height marks by photographs is 0.01 percent, of the center line section--0.33 percent of the photo height, and width of surface area photographed from an altitude of 160 kilometers in a single pass of the satellite is 300 kilometers.

Execution of the aerial reconnaissance mission in the Combat Theater (TVD) in wartime is vested by the NATO command in piloted and unmanned reconnaissance aircraft, as they are highly efficient in obtaining information of sufficient validity. This does not, however, preclude the use of ISZ and manned space platforms.

In onboard reconnaissance equipment packages installed on aircraft, AFA (aerial cameras) have been most widely employed due to their high resolution capabilities. Aerial photography using AFA is carried out to accomplish missions requiring the most detailed, exact, and valid data, and also during locale mapping operations.

In accordance with U.S. and NATO manuals adopted for aerial photography, average typical photo scales of military objectives when conducting scanning reconnaissance are in the range 1:10,000--1:30,000, and during detailed reconnaissance on the order of 1:2,000--1:10,000. According to published foreign press data, the resolution capability of modern aerial cameras obtained under laboratory conditions is 100-160 line pairs per 1 mm, which when photographing objectives with average contrast on a scale of 1:10,000 enables details 0.10--0.06 meters wide to be differentiated in the photographs. As can be seen from table 1, this permits with photointerpretation to recognize the majority of uncamouflaged objectives, and to even determine type of objective. However, work is continuing abroad to further improve existing and build new types of AFA, photography materials, develop methods and techniques of photo interpretation in an effort to improve aerial photography. One of these areas is the development of color and spectrozonal photo materials, the use of which in the opinion of foreign specialists, will detect certain qualitative characteristics of objectives and the earth's surface, specifically the presence of camouflage, humidification of area sectors, type and condition of vegetation, water basin pollution, etc.

Table 1

AFA (Aerial Photography) Resolution Capabilites Required For Detection and Identification of Certain Types of Objectives (Resolution capability in area, meters)

Objectives	Detection	General Detection (recognition of type)	Exact Identification (class recognition)	Obtaining Exact or detailed properties (type recognition)
Bridges	6.0	4.5	1.5	0.9
Radar stations	3.0	0.9	0.3	0.15
Warehouses	1.5	0.6	0.3	0.025
Communications facilities	3.0	1.5	0.3	0.15
Military subunits	6.0	2.1	1.2	0.3
Air strips	6.0	4.5	3.0	0.3
Artillery pieces	0.9	0.6	0.15	0.05
Aircraft	4.5	1.5	0.9	0.15
Ground-to-ground and ground-to-air class missile launchers	3.0	1.5	0.6	0.3
Ships	7.5	4.5	0.6	0.3
Armored equipment, motor transport	1.5	0.6	0.3	0.05
Ports, harbors	30.0	15.0	6.0	3.0
Railway warehouses, shops	30.0	15.0	6.0	1.5
Roadways	9.0	6.0	1.8	0.6
Inhabitated areas	60.0	30.0	3.0	3.0
Submarines (on surface)	30.0	6.0	1.5	0.9

Concurrently, the U.S. and other NATO countries are devoting considerable attention to the training of specialists, including photo interpretation specialists. As noted in the foreign press, the U.S. Air Force conducted the following experiment to check the validity of interpreting several objectives in photographs. Ten photo interpretation specialists with five years of experience and 40 novices were shown aerial photos (scale from 1:12,600 to 1:18,000 and resolution capability to areas of 0.6--1.5 meters) which included among the 212 objectives photographed: combat position of a "Nike-Hercules" Air Defense Missile (ZRK), transformer sub-station, an electronic communications facility site, and airfield and construction site. Interpretation was accomplished using a seven power magnifier over a period of 8 hours. It was established that the average validity of interpretation for experienced specialists was 80.5 percent, and 74.1 percent for the novices.

AFA, however, do have a number of shortcomings which considerably reduce reconnaissance aircraft capabilities. The foreign press lists those deficiencies: use of AFA is dependent upon meteorological conditions and time of day, long time periods from the time of photographing until receipt of information.

Unfavorable weather conditions impose extensive limits upon the use of AFA and frequently preclude conducting AFA-assisted aerial reconnaissance (poor visibility, low cloud cover, etc.). Use of AFA at night even with good air transmittance is possible only with illumination of targets with special photographic bombs or powerful strobes. The long time period from photography to obtaining information is determined by time expenditure required for the aircraft to the airfield, for removal and processing of film and photo interpretation. In the opinion of many military specialists, the average period required to obtain data from aerial photography from the time the aircraft lands is approximately 1 hour, and 3 hours when a photo mosaic must be constructed.

Therefore, NATO country air forces are increasing the use of aerial reconnaissance resources which are either less dependent or totally independent of time of day, meteorological conditions in the target area, for example: television, infrared and laser equipment, and side-looking reconnaissance radar (RLS BO).

According to data published in the foreign press, the resolution capability of certain modern television reconnaissance receivers is 400 lines per horizontal line, which enables the detection of individual tanks, armored personnel carriers, and motor vehicles from a distance of 2,500--3,000 meters and recognize their type from 500--1,000 meters.

With manned aircraft, the television systems are used chiefly to obtain information in near real time frames. For example, the first photograph of the videotape made at the ground receiving station can be received less than 1 minute after the reconnaissance aircraft observes the objectives. However, the distance of the television transmission, as noted in the foreign press, is limited by line-of-sight, and the image quality is dependent to a significant degree upon the intensity of interference generated by the enemy.

Aircraft reconnaissance equipment frequently includes passive infrared instrumentation operating in the longwave segment of the IR spectrum. These instruments provide for obtaining thermal pictures of a locality and for detection of camouflaged objectives (aircraft, tanks, motor vehicles, missile launchers) through differentiating the temperature of their surface or engine exhaust gases from the temperature of the surrounding area. The resolution capabilities of certain such instruments: for temperatures 0.15--0.3 degrees C, linear 1--1.5 mrad (approximately 0.001--0.015 of observation distance), with angle of field of vision up to 120 degrees.

The most favorable time of day for conducting infrared photography in the opinion of foreign specialists, is at night (particularly during pre-dawn hours) as distortion of the overall area picture due to uneven solar heating of objectives and to pronounced shadows is considered minimal.

Under adverse weather conditions, when the use of the above listed optical systems is limited or totally impossible, RLS BO* is used to conduct aerial scanning reconnaissance.

As noted in the foreign media, recently the U.S. is focusing considerable attention upon the development and perfection of new types of reconnaissance systems--the so-called alarm system detection sensors, which are sensitive elements capable of reacting to the presence and movement of personnel or combat equipment in their areas.

Compact and rather lightweight (5--10 kg), a sensor of this type, dropped from an airplane or helicopter, transmits signals via a coupled radio receiver to the data receiving point (directly or via a relay-aircraft) on the presence or movement of personnel or equipment of the enemy in the area of the sensors.

Types of several existing foreign sensors and their capabilities are listed in Table 2.

In the opinion of western military specialists, modern aerial-space reconnaissance resources now part of NATO armies' arsenals enable them to conduct systematic monitoring of the enemy, his

Table 2

Capabilities of Certain Types of Signal Detection Sensors

Type of Sensor (principle of operation)	Reacts to:	Detection Distance, meters	
		Man	Military Equipment
Accoustical	Noises in the audio and superaudio ranges	50--100	1,000
Seismic	Soil vibrations (during moving)	50--100	300--500
Magnetic	Variations in magnetic field due to ferro-magnetic material objects		200--300
Thermal	Rapid temperature changes of environment	300	700

military and industrial facilities over large expanses during both peacetime and war. However, many consider that artificial and natural camouflage of objectives and the carrying out by the enemy of various deception programs (use of military equipment mock-ups, diversionary actions, frequent shift of military positions, etc.) are capable significantly reducing the effectiveness of aerial-space reconnaissance.

*For details of the RLS BO, see "Zarubezhnoye voyennoye obozreniye", 1978, No 12, pp 62--69. Editors

8851
CSO: 1801

SOVIET COMMENTS ON NEW U.S. NUCLEAR BOMBS

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79 pp 53-54

/Article by Col-Engineer V. Mar'in, Candidate, Technical Sciences, "Building New Nuclear Aerial Bombs in the U.S."/

/Text/ Military leadership in the U.S., inflating the myth of the "soviet military threat", is working intensively to expand its arsenal of weapons of mass destruction. The Congress of the U.S. every year increases allocations for the development and production of new nuclear munitions, including aerial bombs.

Specifically, as noted in foreign press accounts, since 1974 the nuclear aerial bomb B77 has been under development. It possesses a number of design features which, in the opinion of american specialists, provide for flexible military application and improved safety in accidents involving carrier-aircraft. The bomb may be delivered during execution by the aircraft of any form of maneuver, over a broad range of flight speeds and altitudes, including extremely low altitudes. In addition, its power may be varied from several kilotons to a megaton (this is dependent upon the nature of the target to be hit and is set by the aircraft crew during the flight). The B77 is proposes primarily for use against high-durability objectives, and delivery vehicles cited in the press include the B-52 and FB-111 bombers, tactical fighters F-111, F-16, and F-4, and the A-6 and A-7 ground-attack aircraft.

Safety of the B77 aerial bomb is achieved through the use of a new high-explosive for compression of nuclear materials. Due to the low sensitivity to shock and fire, the explosive will not detonate during a crash of the delivery-aircraft or in the event of an accidental bomb drop. As a result, in the opinion of the aerial bomb builders, such incidents cannot result in the dissapation of nuclear warhead radioactive substances, i.e., to a contamination of the area. Such a conclusion was arrived at based upon a series of laboratory and range tests of the aforementioned

explosive. This feature of the B77 aerial bomb was not emphasized in the U.S. press accidentally. The Pentagon is striving to reassure the public of the ally-countries of the aggressive NATO bloc, and above all those, upon whose territory american nuclear weapons are stationed. However, certain foreign specialists consider that laboratory and range tests cannot fully recreate all actual accident situations and therefore total confidence in the publicized high level of safety for the new munition is impossible.

Considerable attention in the development of the B77 aerial bomb was devoted to providing for its use at minimum altitudes, altitudes at which the probability of enemy anti-aircraft hits upon the delivery-aircraft is considerably reduced. However, in bombing from those same low altitudes, the timeframe from the moment of drop to the moment of detonation is insufficient for withdrawal of the delivery-aircraft from the danger zone for destructive effect of nuclear explosions (particularly with high-power warheads). Therefore, a conceptually new parachute system was developed for the B-77 aerial bomb. The system consists of two parachutes. The first, the lift chute, is designed to lift the bomb to an altitude of approximately 30 meters from the drop level. It is manufactured from individual transverse strips, which, when exposed to the flow of oncoming air at a given angle, creates lift.

A special system exists for stabilizing the aerial bomb after drop and for imparting the required positioning in space. It includes a gas generator, gyroscopes, and a computer. The gas generator produces operating gas, and directs that gas through tubing via controlled valves to eight nozzles (positioned on the circumference of the aerial bomb casing). The gyro-system determines the spatial positioning of the bomb after drop. This information is fed to the computer for data processing and the formulation of commands for the opening or closing of one valve or another, which provides for stabilization of the bomb in a given position and the selection of its altitude with the lift parachute. After attaining maximum altitude, this parachute jetisons, and a second, the braking parachute, deploys to descend with the bomb.

In conjunction with the developmental program for the new aerial bomb, in 1977 a series of mock-up drops was carried out using series-produced delivery-aircraft including the B-52G, the FB-111A and the F-4G, the mock-up being equipped with the aforementioned parachute system. A segment of those drops was conducted to verify bomb-dropping capabilities for the B-52G bomber flying at minimum altitudes (60 meters for this aircraft). Foreign press published the following data on one such flight. The aircraft flew at an altitude of 60 meters with a speed of 690 k.p.h.

After the drop of the mock-up and its stabilization, the lift parachute (diameter-4 meters) deployed, which effected an elevation of the "bomb" to an altitude of 91 meters in 3 seconds, afterwhich the lift chute jetisoned and the braking chute (diameter-11.6 meters opened, providing for a descent of the mock-up in the vertical position. Total time from the moment of "bomb" drop to impact was approximately 10 seconds, and ground impact speed was 18 m/s. Given this information, american experts consider that the B77 can be dropped by a B-52 even from an altitude of 45 meters, and the delivery-aircraft will be able to depart the danger zone and avoid the effects of nuclear explosion destructive factors.

The FB-111A drop of the B77 mock-up was conducted at a speed of Mach 2.2. The primary goal of this experiment was to verify characteristics of the parachute system with bomb drops at supersonci flight speeds.

Bombing from the F-4G fighter was carried out from an altitude of 60 meters and at a flight speed of the delivery-aircraft of 560 km/hour. Stabilizations of the mock-up were achieved with 0.4 second, beginning of lift chute deployment--0.9 second, and completion within 1.2 seconds after separation from the aircraft. The braking parachute deployed at an altitude of approximately 90 meters. Evaluating the results of the tests, american specialists consider that the equipping of the Air Force with this bomb would improve combat capabilities considerably.

Concurrently with the production of the nuclear B77 aerial bomb, the U.S. is developing the B61 bomb (with modifications B61-3 and B61-4) for tactical aviation delivery-aircraft. Foreign press accounts also note that its design also allows the crew of the aircraft to vary the blast power (equal to 1/3 the power of the B77 bomb) depending upon the nature of the target to be struck. It was noted that bombs of both modifications will be used at even supersonic flight speeds of the delivery-aircraft.

The B61 modifications reviewed are proposed with the employment of a braking parachute made of the new highly durable material Kevlar. The first stage range testing of this parachute employed a special two-stage rocket sled, capable of developing speeds of Mach 0.5--1.3.

The next test phase of the parachute is to be conducted with drops of bomb mock-ups for both modifications from tactical fighters F-111A and F-4D, and from the A-7D ground attack aircraft.

8851
CSO: 1801

SOVIET COMMENTS ON U.S. EXPERIMENTAL PILOTLESS AIRCRAFT

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79 pp 54-56

/Article by Lt Col Yu. Kolesnikov: "Experimental Pilotless Aircraft"/

(At the request of our readers. Many readers of our magazine have asked that we publish materials on the building of an experimental pilotless aircraft in the U.S. We are fulfilling their requests.)

/Text/ Concurrent with the development and manufacture of modern combat aircraft, the Pentagon is allocating considerable resources for conducting scientific research and design work (NIOKR) to construct next generation aviation technology. A considerable part of this research embraces the so-called concept of "experimental pilotless highly-maneuverable aircraft", which is being carried out under the the HiMAT (Highly Maneuverable Aircraft Technology) program.

The primary goal of the program is to build an experimental flying platform qualitatively different from existing aircraft which is intended for flight testing of various engineering solutions, particularly in the field of aerodynamics for future fighter aircraft. This, in the opinion of American experts, will enable them to reduce the time period between laboratory and flight testing of actual aircraft.

As reported in the foreign press, in March, 1978, the American firm, "Rockwell International" completed the construction of the first experimental aircraft prototype under the aforementioned program. That prototype was executed according to an integral aerodynamic layout, and has a variable sweep wing equipped with ailerons and flaps. The forward horizontal empennage has a large transverse V. Launch weight of the pilotless aircraft is 1550 kilograms, fuselage length is 6.85 meters, wing aspect span is 4.87 meters. The aircraft is equipped with one J85-GE-21

turbojet engine manufactured by the "General Electric" company with a thrust of 2,270 kilograms in the afterburner mode.

A feature of the pilotless aircraft is its modular construction priniciple, i.e., it has the following interchangeable modules: engine air intake and nozzle, wing (outer wing) assembly, forward horizontal empennages, engine afterburner chambers, etc. Use of quick-change ailerons, elevons, air brakes, rudders, and landing gear struts is envisaged.

Aerodynamic properties of the aircraft, in the opinion of company specialists, are considerably better than corresponding features of current generation aircraft, particularly of the new F-16 fighter. This relates to maneuvering properties primarily. As expected, the aircraft will be capable of performing a sustained turn with 8 G loading at Mach 0.9 at an altitude of 10,000 meters. At the same altitude and speed, the F-16 and F-4 fighter aircraft are capable of similar turns with only 4.5 and 2.5 G's, respectively. Cruise speed of the experimental aircraft is Mach 0.6, with estimated maximum flight duration of 30 minutes. It is capable of reaching Mach 1.4 at an altitude of 12,000 meters in 3 minutes.

As noted frequently in the foreign media, the pilotless aircraft has attained new maneuver properties through the installation of direct controls for lift and lateral forces. It is considered that at an altitude of 9,000 meters and a speed of Mach 0.9, the aircraft can, with the aid of direct aerodynamic force controls, execute a plane-parallel movement in the vertical plane with normal 1-G loading and plane-parallel movements or plane turns in the horizontal plane with a lateral load of 3 G's.

The foreign press notes that previously in aircraft construction attempts were made only to practically use component materials in aircraft designs of differing roles or utilization, which resulted chiefly in the replacement of metal assemblies with lighter and less-expensive assemblies. However, in the aircraft built under the HiMAT program, these materials are widely utilized. Their weight constitutes approximately 33 percent of the design weight.

One of the innovations to be researched on the pilotless aircraft is the engine axially asymmetric nozzle providing, in company specialists' opinion, for changing the directing of thrust vectors in order to increase lift and improve aircraft longitudinal control. Additionally, it is considered the use of the two-dimensional nozzle will enable the aircraft's Infrared (IR) silhouette to be reduced.

With the pilotless aircraft, plans are to test the new aerodynamic wing profile and the forward horizontal empennage having, in the

opinion of American specialists, high-level properties at near speed-of-sound flight speeds.

The flight test program has not yet been worked out in all details, but company representatives have announced that even in the first flights, the pilotless aircraft will be flying in modes near the proposed flight limits for the aircraft.

Edwards AFB, California has been selected for the location of the flight tests to be conducted. The pilotless aircraft is to be dropped from a B-52 carrier-aircraft at an altitude of 13,500 meters. Engine ignition and switch-on of onboard equipment is effected from the ground (up until the instant of drop, the engine operates in the idle mode). After drop and acceleration to the assigned speed, the aircraft must perform a series of aerial maneuvers and then a skid-assisted landing. Control of the flight is planned through a ground-based complex, the relay being provided by a remote-control system installed on the TF-104 escort aircraft. If communications are lost from the ground station, for safety considerations regarding the escort aircraft (for example, if in the execution by the pilotless aircraft of a series of highly-active maneuvers, when the escort aircraft is close to the pilotless aircraft), an emergency back-up control method is employed temporarily. In this case, the on-board automatic control system of the pilotless aircraft brings the aircraft out of the next sequential maneuver and places it in a horizontal flight, which continues until contact with the airborne or ground control station is re-established.

The program also provides for the development of skid-assisted landings after routine flights. For this, a homing Radar is to be used to bring the aircraft in the landing approach zone, where the ground control station operator will accomplish the landing, using a television screen displaying the image transmitted from the onboard television camera.

Operational results obtained under the HiMAT program, as the foreign press attests, will find broad application in the construction of future fighter aircraft. To evaluate the feasibility of realizing one idea or another which has been checked with the pilotless aircraft, it is proposed to utilize the NASA Research Center Trainer at Langley, which will enable the modeling of aerial combat between design aircraft and any existing aircraft.

The HiMAT program is scheduled for two years, during the course of which 20-25 flights will take place. It will, however, in the opinion of Americal experts, be expanded relative to flight tests results obtained and processed. Verification using the pilotless aircraft of future discoveries in aerodynamics is projected to conclude in 1980 in order to employ results obtained in the designing of fighters during the latter half of the 1980's.

8851
CSO: 1801

SOVIET COMMENTS ON U.S. NUCLEAR ACCIDENT TRAINING EXERCISE

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 6, Jun 79 signed to press 6 Jun 79

/Article by Col-Engineer V. Kirsanov: "NUACS Exercise"/

/Text/ The Pentagon, in preparation for undertaking nuclear warfare, has several times been involved in crashes and accidents involving American aircraft carrying nuclear munitions on board. This has compelled the American command to adopt measures to prevent and eliminate the consequences of such accidents, those measures including the conducting of special exercises.

As reported by the American press, on 6 April 1979, the Pentagon conducted a comprehensive exercise termed NUACS--Nuclear Accidents ("Nuclear Incidents"), the primary mission of which was to verify the effectiveness of command organs, of new radiation detection methods and means, and also to test the capability of newly formed subunits (podrazdeleniye) to fulfill their assigned missions under simulated conditions approximating real situations to the maximum extent possible. The exercise, which lasted 7 days, involved more than 500 specialists and a considerable amount of equipment. Vice-Admiral R. Monroe, Director, Nuclear Munitions Agency, DOD, was assigned as the exercise manager.

The exercise began with the receipt by the Pentagon Main Command Center of the following urgent message: during a flight of a C-141 military transport aircraft with six nuclear bombs on board, several of the aircraft's systems failed, and the crew attempted an emergency landing in a remote area of Nevada. It was later learned that as a result of the unsuccessful landing attempt, fire had erupted and one of the fuel tank groups had exploded.

According to exercise scenario, three bombs were "ruptured" by the fire, conventional explosives contained in the nuclear warhead detonation system then "exploded", which resulted in the "dissapation" of radio active elements over a rather large area about the

the aircraft, and a resulting radioactive dust cloud was drifting toward a neighboring state. To simulate such a situation, a liquid containing radioactive isotopes (radium-233 with a half-life of 11 days) was atomized in sufficient quantities in the area of the "accident" for instruments to operate, but in the estimation of American specialists practically safe for the health of personnel involved. According to exercise conditions, three other nuclear bombs were also "damaged" and became sources of radioactive radiation, and crew members sustained critical injuries and were subjected to varying doses of radiation.

8851
CSO: 1801

TRAINING MANUAL FOR ENGINEER NCOS

Moscow METODIKA TAKTIKO-SPETSIAL'NOY PODGOTOVKI SERZHANTOV INZHERNYKH VOYSK (Methods for Tactical-Special Training of Engineer Troops' NCOs) in Russian 1977 signed to press 26 Oct 76 pp 1, 2, 2-3, 122

[Annotation, Table of Contents, Foreword, Chapter I, and recommended reading list from book by V.S. Yermakov and A. F. Gontarev, Voyenizdat, 16,000 copies, 123 pages]

[Text] This booklet discusses the principles underlying the organization and conduct of tactical-special classes for NCOs in the subunits of Engineer Troops and presents versions of methodological work-ups for conducting classes to train sergeants to perform as detachment (or platoon) commanders for organizing the performance of tasks involved in combat engineer support. The substance of the classes is given as applicable to the recommended themes for the tactical-special training of NCOs in the Engineer Troops and take into account the corresponding classes conducted for the subunits.

The booklet is intended as a methodological aid to be used by subunit commanders in the Engineer Troops and for sergeants and students of training subunits for preparing for classes.

Contents

Foreword

The Soviet people, lead by the Communist Party, are successfully working to accomplish the tasks involved in creating the material-technical base for communism, building up the power of our nation and the other socialist commonwealth nations and improving the worker's welfare.

Our Party, its Leninist Central Committee and the Soviet Government are making an enormous effort, a truly titanic effort, to insure a foreign policy situation conducive to the building of communism in the USSR and

to the strengthening of peace over the entire planet. This noble work has greatly weakened the position of the proponents of war and has produced major advances in the normalization of relations among states with different social structures.

At the same time, there is still tension in the world, and the danger of military conflicts. In this situation, the Party regards the task of strengthening the nation's defense capabilities and improving the combat readiness of the troops as one of our most important tasks. The successes of the socialist economy and the outstanding achievements of science and technology, which have made it possible to outfit our Armed Forces with the latest weapons and combat equipment, have produced fundamental transformations in the organizational structure of the forces, in the methods employed in the conduct of combat operations and throughout the system of training and indoctrination of the personnel.

Units and subunits of the Engineer Troops are now equipped with diverse, high-performance equipment, which requires a high level of professional skill, solid special and technical knowledge, and good physical conditioning. The modern Soviet fighting man of any arm of troops possesses all of these qualities, along with profound ideological conviction as to the correctness of our Party's policy and unshakable devotion to the socialist homeland.

The fighing men who have completely mastered the modern equipment and are trained to perform precisely and smoothly as a member of a team, crew or detachment determine to a considerable degree the success achieved by the subunits on the battlefield. "The development of a fighting man does not take place automatically, however. It is the result of persistent work on the part of commanders at all levels, including the junior command element."[1] The huge role played by the sergeants in the training and indoctrination of the fighting men is primarily due to the fact that they form "ellipses... the largest group of command personnel, closely linked with the daily life, everyday affairs and training of the soldiers and sailors."[2]

In a battle, sergeants of the Engineer Troops frequently have to organize the work of detachments and crews, and sometimes, separate teams isolated from their units and subunits, interacting closely with units and subunits of the different arms of troops. They must be ready at any time to replace an officer put out of action or to assume command of teams (or crews) with related specialties.

1. A. A. Grechko, "Vooruzhennyye Sily Sovetskogo gosudarstvo" [The Armed Forces of the Soviet State], Moscow, 1974, p. 223.
2. Ibid, p. 222.

It is perfectly clear that sergeants of the Engineer Troops can only achieve a high level of tactical-special training and good professional competence and can only develop their organizing abilities through systematic, purposive and methodologically correct work on the part of the officers training and indoctrinating them.

The authors believe that this training aid presented to the reader can help officers of the Engineer Troops accomplish this important task.

The training aid describes the organization and the procedure for preparing and conducting tactical-special classes for sergeants. Methodological plans for preparing for classes are presented for the most important subjects in the tactical-special training of sergeants as specified by the Combat Training Program for subunits of the Engineer Troops.

Chapter I. ORGANIZATION AND CONDUCT OF TACTICAL-SPECIAL CLASSES FOR SERGEANTS

The tactical-special training of sergeants---one of the basic and foremost areas of training---is ordinarily conducted in classes for commanders and classes on instructional methods and at training methods assemblies, and is perfected in tactical-special classes and exercises for subunits, as well as in combined-arms tactical exercises.

It focuses upon improving the sergeants' field training and upon developing their practical skills in commanding a detachment (a team or crew) in the performance of engineer support tasks. Tactical-special classes, in which the sergeants perform as platoon commanders, are conducted to improve their knowledge and to prepare them to assume the duties of an officer.

The tactical-special training classes develop in the sergeants good moral-combat qualities, initiative and boldness, the ability to make well-based decisions rapidly and precision in the assigning of the tasks, and improve their skills in firmly controlling the actions of their subordinates.

The following may be the main types of tactical-special classes for sergeants:

practical classes:
demonstration classes;
classes on instructional methods.

Practical tactical-special classes have the main role in the training of sergeants. They are ordinarily conducted in the form of group exercises and the practical performance of the duties involved in the sergeants' positions.

In the group exercises all sergeants perform the duties of one of the individuals in charge (a detachment or platoon commander).

During the practical performance of the tasks, one of the sergeants functions as the detachment (or platoon) commander, while the others perform the role of soldiers (or sergeants and soldiers).

In demonstration tactical-special classes the sergeants are shown an exemplary performance for which a detachment commander must strive when organizing the performance of engineer support tasks. Careful preparation should be made for the demonstration tactical-special classes. One of the squadrons, the commander of which has a good level of methodological and tactical-special training, is drawn upon for the conduct of such classes.

Classes on instructional methods for sergeants are conducted in order to establish a unified approach to the organization and conduct of impending tactical-special training classes for the subunits. These classes provide instructions on the sequence for studying the training subjects and present a practical demonstration of methodological techniques for working on the most difficult ones. These classes are conducted with the sergeants undergoing training.

One or two classes may be conducted on each tactical-special training theme. The length of a class is determined by the training objectives set, by the number of training subjects to be covered and by the sergeants' training level.

It is beneficial to conduct the tactical-training classes for sergeants in the field, in unfamiliar terrain, wherever possible, which makes it possible to create a complex tactical and engineering situation forcing the sergeants to make decisions rapidly and to continuously control the actions of their subordinates while they are performing the engineer support tasks.

Now, let us discuss preparations for the tactical-special classes. The successful conduct of tactical-special classes for sergeants depends greatly upon the preparations made for these classes. It is therefore an extremely important task of the instructor carefully to prepare for each tactical-special class, including preparation of the instructor himself and of the sergeants, and preparation of the materiel and of the area in which the forthcoming classes are to be conducted.

The instructor's preparations include establishing the initial data required, studying the proper references, working out the tactical situation and the decision of the superior commander, selecting and reconnoitering the area in which the classes will be conducted, and compiling a methodological plan (an outline) for conducting the class.

The initial data required to set up a tactical-special class consists of the theme, the training subjects, the substance of the training subjects and the time and place of the class.

The instructor's preparations are begun by clarifying the theme and establishing the training objectives, the training subjects and the time to be spent on each.

As he clarifies the theme of the tactical-special class, the instructor must determine the type of combat operations (an offensive, a defense, a meeting battle, a march, and so forth) and the place and role of the subunit of Engineer Troops in the execution of the combined-arms subunit's tasks, as well as their mode of operation during the performance of the assigned task.

The instructor must base his determination of the training objectives on the theme of the classes, the sergeants' training level and the tasks facing them with respect to training their subordinates under the same theme. The training objectives must have concrete substance.

The content of the training subjects and the sequence for covering them must conform to the training goals set and insure their achievement.

Enough time must be allocated for the training subjects to make it possible to cover all of the material thoroughly and well.

After the initial data are understood, the instructor selects the necessary literature on the given subject, studies it and begins working out the tactical and engineering situation, and adopts the decision for the commander of that subunit of Engineer Troops one level above the subunit whose performance is to be covered in the class. The tactical situation and the decision of the commander of the higher subunit of Engineer Troops are spelled out in textual form or are depicted graphically on a map (or diagram) with a legend. They are then refined on the terrain during reconnoitering of the area of the forthcoming class.

The methodological plan or outline constitute the basic document for conducting classes. It must define the theme, the training objectives, the make-up of the group of trainees, the time and place for conducting the class, material support and the procedure for conducting the class.

The explanation of the procedure for conducting a class indicates the training subjects, the time allocated for them and the actions of the instructor and the trainees.

The section explaining the instructor's functions describes the tactical situation and the decision made for the higher commander, and contains hypothetical situations, of which the trainees are informed, and the specific actions to be taken by the instructor in one or another tactical situation. When necessary, the information is illustrated with drawings.

The trainees' functions are indicated for each training subject. In addition, the instructor works out the most practical versions of decisions by the trainees for all of the mean training subjects.

Preparation of the area and of the materiel for conducting tactical-special classes for sergeants plays an important role in the achievement of the assigned training objectives and is carried out in accordance with a methodological plan or outline.

Measures are taken in advance in the area of the classes, according to the theme and the training subjects to be covered, measures which help to create the required tactical and engineering situation. The basic measures carried out to prepare an area for the conduct of tactical-special classes may include the following:

fortification of the positions of one's own troops and those of the "enemy";

the laying of obstacles to be reconnoitered and to which the trainees will make (or widen) passages;

the setting up of the necessary obstacles to be overcome, if such do not exist on the terrain;

simulation of destruction, enemy fire points, areas of radioactive contamination and other elements of situations required for covering the training subjects well.

The nature and the extent of these measures may vary and are established separately for each specific class. In some cases already equipped training fields and engineer training facilities may be used in order to reduce the amount of work involved in preparing the area for classes. Preparation of the area may sometimes be carried out in the form of classes giving the subunits of Engineer Troops practice in the training subjects covered under a theme.

Material support for tactical-special classes for sergeants may include the preparation of engineer, motor transport and other equipment, standard sectional structures or structures prepared by personnel of the unit (or subunit), training equipment, expendable materials, topographic maps and various drafting and drawing supplies. Mileage for the motorized equipment is computed in accordance with a plan, within the norms established for combat training. Standard and nonstandard structures and equipment are used according to the unit (or subunit) plan. Expendable materials and office supplies are obtained from the depot under the procedure established in the unit.

When the tactical-special classes are conducted, each tactical-special training class should begin with a topographic and tactical orientation conducted by the trainees themselves, with the instructor's assistance.

Following the trainees' orientation at the site, the instructor introduces them to the new tactical and engineering situation or issues a combat order (or instruction), performing the role of the higher commander. The trainees are then given time to study the assigned task, to appraise the situation and make a decision. When the allocated time has elapsed the trainees report their decisions to the instructor.

If the trainees have made gross errors in their decisions and if those decisions do not insure the accomplishment of the assigned task, the instructor is required to assign additional problems to force the trainees to understand their errors and to arrive at the right decision, that which conforms to the existing situation. In addition, the instructor endeavors to see that the trainees formulate the decision competently and precisely.

The decision adopted by the commander of the detachment (or platoon) of Engineer Troops must include the following:

the aim of the actions (the tasks upon which the main effort should focus, the sequence and method to be followed in performing the assigned engineer support task);
the tasks of the crew (or detachment) numbers;
the organization of interaction and control.

Based on the decision approved by the instructor, the trainees, performing as the detachment (or platoon) commander, assign the tasks to their subordinates (issue a verbal combat order). This training subject requires special attention on the part of the instructor, who must see to it that the trainees issue the verbal combat order for the performance of engineer support tasks concisely and precisely.

The verbal combat order issued by the detachment (or platoon) commander must include the following:

reference points;
a brief summary of information on the enemy;
the higher subunit's task;
the detachment's (or platoon's) task;
the tasks of the crew (or detachment) numbers;
command signals;
the position, rank and name of the second in command.

The functions of the detachment (or platoon) commander for organizing the performance of engineer support tasks are worked out on a practical level, according to one of the verbal combat orders issued to the trainees. The instructor monitors the performance of the trainees, builds up the tactical and engineering situation with hypothetical problems and hears the trainees' decisions on them. Special attention is devoted to the precise organization of the performance of engineer support tasks and the tasks involved in controlling the performance of subordinates.

A critique of the class is conducted after all of the training subjects have been covered, at which time the overall results of the class are given, positive and negative aspects of the trainees' performance are noted, individual evaluations are given for the sergeants, and instructions are issued for eliminating deficiencies revealed in their training.

Recommended Reading

1. A. A. Grechko, "Vooruzhennyye Sily Sovetskogo gosudarstvo" [The Armed Forces of the Soviet State], Moscow, Voyenizdat, 1974.

2. V.K. Kharchenko, "Constant Attention to the Training of Sergeants," VOYENNYY VESTNIK, No. 11, 1974.

3. V.I. Kalayda, "Metodika provedeniya zanyatiy po inzhenernoy podgotovke" [Methods for Conducting Engineer Training Classes], Moscow, Voyenizdat, 1973.

4. V.N. Lutskov, "Metody obucheniya sovetskikh voinov" [Methods for Training Soviet Fighting Men], Moscow, Voyenizdat, 1970.

5. I.F. Lysukhin, "Inzhenernoye obespecheniye forsirovaniya rek" [Engineer Support for the Forcing of Rivers], Moscow, Voyenizdat, 1968.

6. I.F. Lysukhin, "Metodika inzhenerno-takticheskikh rashchetov" [Methods for Making Engineering-Tactical Computations], Moscow, Voyenizdat, 1974.

7. F.I. Ostroukh, "Stroitel'stvo bystrovozvodimykh ubezhishch i protivoradiatsionnykh ukrytiy" [ ], Moscow, Voyenizdat, 1972.

8. V. Ya. Plyaskin, et. al., "Inzhenernoye obespecheniye obshchevoyskovogo boya" [Engineer Support of the Combined-Arms Battle], Moscow, Voyenizdat, 1972.

9. V.S. Chekalin and B.V. Varenyshev, "Fortifikatsionnoye oborudovaniye mestnosti" [Fortification of the Terrain], Moscow, Voyenizdat, 1974.

10. V.K. Shamshurov, "Inzhenernoye obespecheniye boyevykh deystviy noch'yu i v osobykh usloviyakh" [Engineer Support of Combat Operations at Night and in Special Conditions], Moscow, Voyenizdat, 1969.

Other training and methodological literature at the instructor's discretion.

11499
CSO: 1801

END