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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

12 October 1976

MEMORANDUM FOR: The Director of Central Intelligence

FROM : William W. Wells
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Air Support
of Ground Forces and Control of Combat
Actions of Front Aviation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. This article is an attempt to define air support as joint actions with missile units primarily for the purpose of destroying enemy missile/nuclear means. The authors stress the close relationship of air support to the tasks of ground troops, its intensity as troops go over to the offensive, centralized employment of front aviation, and closer cooperation with missile units as the distinctive features of air support under present conditions. Emphasis also is placed on the problems of controlling aircraft under modern combat conditions and the need for new communications and control post equipment as well as reorganization of the control structure. This article appeared in Issue No. 5 (66) for 1962.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned

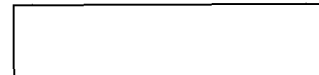
WILLIAM W. WELLS

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Intelligence Information Special Report

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COUNTRY USSR



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SUBJECT


MILITARY THOUGHT (USSR): Air Support of Ground Forces and Control of Combat Actions of Front Aviation

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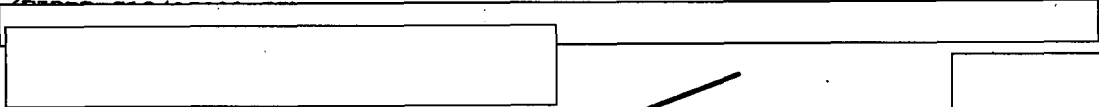
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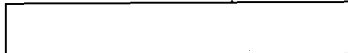
The following report is a translation from Russian of an article which appeared in Issue No. 5 (66) for 1962 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. The authors of this article are General-Leytenant of Aviation I. Pstygo, General-Mayor N. Ganichev and Lieutenant Colonel N. Reshetnikov. This article is an attempt to define air support as joint actions with missile units primarily for the purpose of destroying enemy missile/nuclear means, using fighter-bombers and the "free hunting" or "reconnaissance in force" method. The authors stress the close relationship of air support to the tasks of ground troops, its intensity as troops go over to the offensive, centralized employment of front aviation, and closer cooperation with missile units as the distinctive features of air support under present conditions. Emphasis also is placed on the problems of controlling aircraft under modern combat conditions and the need for new communications and control post equipment as well as reorganization of the control structure.

End of Summary

 Comment:

Marshal of Aviation Ivan Ivanovich Pstygo has been identified as a Deputy Commander of the Air Forces since August 1969. Colonel N. Reshetnikov also wrote "Overcoming Enemy Air Defense Countermeasures by Military Transport Aviation" in Issue No. 1 (89) for 1970





Air Support of Ground Forces and Control
of Combat Actions of Front Aviation

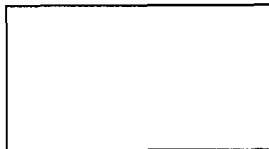
by

Guards General-Leytenant of Aviation I. Pstygo
General-Mayor N. Ganichev
Lieutenant Colonel N. Reshetnikov

The organization and implementation of air support of the troops of a front and the control of the combat actions of the aviation in the course of this support are urgent and, at the same time, extremely complex problems. This is occasioned above all by the fact that the make-up of air support is undergoing important changes. In our opinion, there is still much that is unclear and confused in the definition of the very concept of air support, while the practical situation in the control of aviation, especially fighter-bomber aviation, in the course of air support may be said to recall that very unenviable situation which ground-attack aviation was in during the first period of the Great Patriotic War. Proceeding from the experience of operational-tactical and combat training, as well as from certain established theoretical views on this question, we shall try to give a definition of the concept of air support, identify its specific characteristics, and set forth our point of view on the control of the combat actions of aviation in the course of support.

In spite of a lot of attention being devoted in theoretical works, textbooks, and articles in military periodicals to air support of ground forces, we still have no unanimity of views on the very essence of air support. Thus, for instance, in the works of the Red Banner Military Air Academy are encountered opinions that air support is a method of utilizing aviation; in works of the Military Academy i/n M. V. Frunze it is indicated that air support is a period of combat actions; and in some works of the General Staff Academy they consider air support the tasks of front aviation. The opinion also exists that all the combat actions of front aviation constitute air support, for these actions supposedly assist troops one way or another in fulfilling their tasks. One cannot agree with such opinions.

In the years of the Great Patriotic War, the combat actions of aviation in support of ground troops were conducted predominantly in the area of the battlefield, the territory of which was determined by the range



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of fire of the means of the infantry and artillery. The basic make-up of air support was continuous aviation accompaniment of advancing troops in the most intense periods of battle by successive destruction and neutralization, in conjunction with the artillery, of strong points, individual centers of resistance and fire means of the enemy which directly impeded the advance of the ground troops.

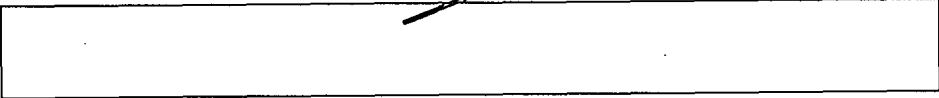
Now with the entry of different types of missiles into service, the zone of ground forces actions has increased considerably; in it the troops can, with their own forces and means, hit a much greater quantity of targets than formerly. Together with this, the appearance of means of mass destruction has caused an increase in the depth of the operational disposition of troops and made it necessary to deploy them for an offensive from march columns with the delivery of strikes from the march. All this considerably broadens the sphere for the employment of the aviation carrying out air support, which may, in our opinion, now embrace a strip of terrain on the enemy side 100 to 150 kilometers and more in depth.

Under these conditions the basic make-up of air support consists of actions of the aviation not only and not so much jointly with the artillery for the purpose of destroying the enemy targets directly impeding the advance of troops (although such actions at certain moments will not be excluded) as jointly with the tactical and army missile units and large units for continuous search and immediate destruction of enemy missile/nuclear means and also for destruction of his deeper targets -- the corps and immediate army reserves. Also entering into air support will be actions to isolate the field of engagement from the approach of fresh enemy forces at the most crucial periods of the conduct of an offensive operation. However, it should be noted that the basic purpose of air support, in our opinion, will always be to destroy the enemy missile/nuclear means, and the demand for its continuity is occasioned by this very factor.

At the present time, the basic means of air support has already been determined -- this is fighter-bomber aviation, a new type of aviation specially established to accomplish particular tasks, chiefly air support. The front cruise missiles, as well as the fighter and the bomber aviation, can supplement the efforts of the fighter-bombers in support of attacking troops during certain periods.

Organizing and carrying out air support today involve a whole series of specific characteristics. One of the features is the fact that the actions of the aviation will be carried out according to the plan for the

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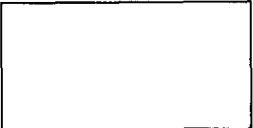


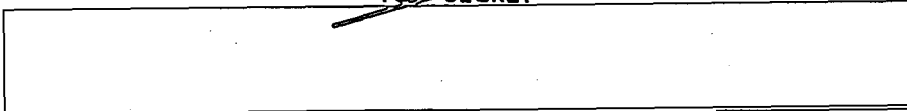
combat employment of all types of aviation to support meeting engagements, commitment to action of the second echelons of armies and the front, assault crossing of large water obstacles, and repelling of enemy counterattacks. In other words, air support will be closely tied in with the basic tasks of the troops in the operation and its objective comes down to assisting with the swiftest conclusion of the defeat of the opposing enemy, whose destruction the command of the front plans beforehand. It is characteristic of the initial operation that air support on the whole must be planned in peacetime.

A second characteristic of the organization and carrying out of air support will be its high degree of intensity as the troops of the front go over to the offensive. Incidentally, there exist two opinions on this subject. Some consider that, as a result of conducting the initial missile/nuclear strike, the overwhelming number of important enemy targets will be destroyed and that, by going over to the offensive, the ground troops will be able to neutralize the remaining targets themselves, therefore the conduct of air support with large forces is not necessary. The others consider that precisely when the troops of the front go over to the offensive, all the previously undetected and undestroyed missile/nuclear and other fire means of the enemy can deliver an important strike against our attacking forces, who may, in this period, for a great number of reasons, not be offered substantial assistance, neither by tactical, nor by army, nor by front missiles. In this time the first-echelon troops can count on the striking power of only an insignificant number of the missile means on alert (in reserve). Therefore, in a great number of cases, only the aviation carrying out air support on a broad scale will be able to carry on effective combat with newly detected enemy missile/nuclear means and assist the offensive of the troops of the front at high speeds. In a certain sense, it can be said that the combat actions of the air large units in the course of air support in the areas of search and destruction of newly detected enemy missile/nuclear means are a direct continuation of the combat begun with the initial strike.

The latter point of view is, in our opinion, more correct. It is necessary to be ready, as the troops of the front go over to the offensive, to support them with the maximum air strength. Fighter-bomber aviation (SU-7B aircraft) and bomber aviation (YAK-28 aircraft) can handle this task successfully.

The third feature of the organization and carrying out of air support consists in the fact that performance of the tasks of support requires





strict centralization of the combat employment of all the front aviation.

At the present time, the strength of an air army does not permit allocating air units to support each army of the front for a definite period, as was done before. The experience of exercises convincingly shows that under conditions of sudden and rapid changes in the situation, highly maneuverable and fluid battles, meeting engagements, and actions of ground troops on disconnected axes, the aviation has to be in constant readiness to concentrate its main efforts on those axes of front troop actions where the success of the operation is being decided. Therefore, not only bomber aviation, but also fighter-bomber aviation, having now become capable of employing nuclear weapons, must be utilized in accordance with the decision of the commander of the front without preliminary allocation of part of the flight resources to provide support of all the combined-arms (tank) armies.

And, finally, the last feature of air support is the closer cooperation of aviation not so much with the artillery as with the subunits and units of tactical, army, and front missiles. The cooperation of the aviation with the rocket troops may be carried out by allocating targets for actions, coordinating strikes as to time and place, coordinating the types and altitudes of the bursts of nuclear warheads being employed by aviation and missiles, providing missile units and large units with reconnaissance data and information on target coordinates, determining safety measures for the aviation in flights near missile launching sites and targets to be hit by them, and, finally, exploitation by the aviation of the results of missile strikes for the successful negotiation of enemy air defense. If one considers that a large number of missiles and aircraft may be operating simultaneously in the zone of a front, while nuclear weapons may be employed quite extensively in the zone of each army, then the importance of the questions of their cooperation becomes rather obvious.

We should especially dwell on the destruction and neutralization of enemy missile/nuclear means in the course of air support. The experience of exercises shows that the organization of combat against missile/nuclear means is not at all as simple a matter as some picture it.

The change in the make-up of air support, which now mainly amounts to continuous search for enemy missile/nuclear means and immediate destruction of them, has given rise to the necessity for the air large units to carve up the areas of responsibility for search and destruction of newly detected missile/nuclear means. In the interests of guaranteeing dependable search, the carved-out division areas of responsibility should in turn be broken





down into zones, and the zones into sectors. It is advisable to assign the appropriate forces to each sector. Research and the practice of exercises show that carving out small sectors and assigning permanent crews to them, although it entails increasing the detail of forces, has a positive effect on the results of combat. True, for this all crews must be properly trained to search out targets quickly and visually, to move in accurately on strike targets, and deliver strikes on the move.

The most desirable methods of combat actions by fighter-bombers in combating missile/nuclear means, as has been established in exercises, may be "free hunting" (search) and "reconnaissance in force", as well as simultaneous and successive strikes delivered, in accordance with the data from the reconnaissance aircraft, by small groups (pair, flight) flying sorties from a status of "airfield alert" and "airborne alert".

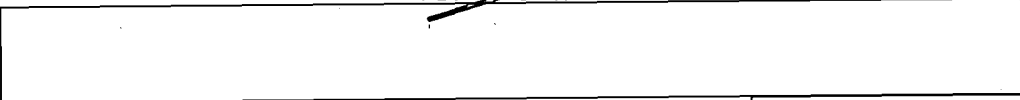
"Free hunting" (search) and "reconnaissance in force" are best employed simultaneously. In areas where air defense is weak and the location of targets unknown, combat actions are necessarily conducted by the search method. If the enemy has a strong air defense, and if the area of the location of the strike targets is precisely known, then it is necessary to employ the "reconnaissance in force" method. Simultaneous and successive strikes by small groups of fighter-bombers, obviously, merely supplement the "free hunting" method.

The change in the make-up of air support makes an increased demand on staffs for timely collection of data on the enemy situated not only in the immediate vicinity in front and on the flanks of the attacking troops, but throughout the air support zone. Special attention must be given to determining the coordinates of targets and establishing the sequence for destroying the targets detected, taking into consideration their degree of importance.

The relatively short range and limited duration of flight of modern fighter-bombers (especially at low altitudes) requires increasing the size of fighter-bomber aviation. In order to satisfy the aviation demands of the troops, it is necessary to have as many fighter-bomber divisions in the T/O of the air army as there are armies operating in the first echelon of the front. In only a few cases can the number of fighter-bomber air divisions in the T/O of an air army be reduced.

New requirements are now being levied on the control of aviation during air support, on the organizational structure of the control organs, and on their equipping with technical means of control.





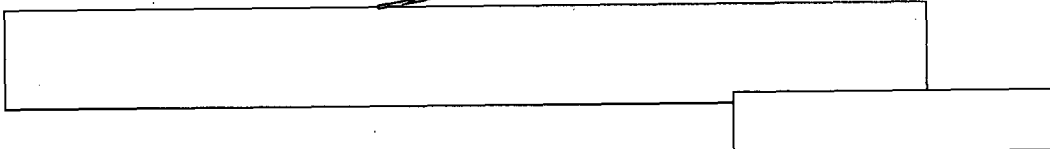
In our opinion, there has long been an acute need to solve a whole series of practical problems connected with the control of the aviation supporting the ground troops. We are referring to guidance and target-indication officers, T/O operations groups of the air army and non-T/O operations groups of the air large units, mobile command posts, and to the actual control of fighter-bomber aviation during air support.

The qualitative changes in air support and the increased fire and striking power of the ground troops have placed foremost not tactical, but operational cooperation of the aviation with the troops of the front. In this connection, in our opinion, the superstructure of guidance and target-indication officers, whose main task in the past has been guiding aircraft visually from the ground to targets in immediate proximity to their own troops and ensuring the safety of their battle formations from the actions of their own aviation, is becoming superfluous in the system of control. Inasmuch as combat actions of the aviation in immediate proximity to our own troops will be a rare occurrence today, and controlling aircraft in the air and guiding them to ground targets "by eyeballing" is excluded under present-day conditions, the need for guidance and target-indication officers is disappearing in principle.

In the practice of exercises, non-T/O operations groups for control of aviation are systematically allocated to formations of ground troops from air divisions and even from air regiments. However, the establishment of non-T/O operations groups is far from the best solution to the problem of controlling supporting aviation. First of all, the allocation of a considerable number of personnel and means of communications to the operations group significantly reduces the capabilities of the division level for controlling the air large unit; in the second place, no non-T/O operations group of an air large unit, without special training, can with equal merit and success solve the problems of organizing and implementing cooperation with the ground, rocket, and surface-to-air missile troops and simultaneously control the aircraft of the different types of aviation in the air in the course of air support.

Exercises have shown that the tasks of controlling the aviation supporting troops must be accomplished by T/O operations groups specially trained for this and allocated to each army of the front's first echelon. However, we have few T/O operations groups, their training does not fit the tasks that confront them, and they have no technical means of control of any kind. Consequently, these groups are in need of reorganization.





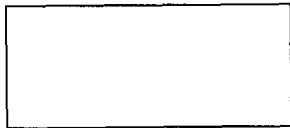
We consider it advisable to assign the tasks of organizing cooperation with the ground troops now being carried out by the staff of the air army, and the tasks of controlling aircraft crews from the ground being performed by forward command posts or non-T/O operations groups of the air divisions, to T/O operations groups of the air army. These groups should have the necessary number of personnel, technical means (radars, radio direction finders, radio and radio-relay sets with signal-coding equipment and secure communications equipment), and mobile control posts mounted on motor vehicles or armored personnel carriers and helicopters. This will make it possible to provide reliable control of all types of aviation in fulfilling the tasks of air support, beginning with calling aircraft from the airfield and ending with their entry into the search area or right to targets of actions.

In wartime, the number of T/O operations groups in each air army must correspond to the number of armies situated in the first echelon of the operational disposition of the troops of the front.

In our opinion, such a system of control will obviate the need to have in some combined-arms armies simultaneously both operations groups of the air army and the forward command post of a fighter-bomber division, or to allocate, as a supplement to them, non-T/O operations groups from fighter-bomber air divisions, and also guidance and target-indication officers, to the forward motorized rifle (tank) divisions. It fully corresponds to the idea of centralized employment of the front aviation. Besides this, in peacetime, such a system of control will help accelerate the practical training of fighter-bomber crews in the effective destruction of small-size and mobile targets from low altitudes and with the employment of complicated types of maneuvering.

The change in the combat properties of fighter-bombers and the increased air defense capabilities of the enemy have made it necessary to develop new methods and new means of controlling aviation. The existing means are far from satisfying all the demands made on them. It is necessary to develop special systems that ensure the guidance of aircraft to small-size mobile and immobile targets on the ground and equip the front aviation with them.

It is necessary for command posts from which the control of fighter-bomber actions is carried out to master more quickly the methods of guiding aircraft to strike targets or at least to direct them to the assigned areas of combat actions with the use of radar and direction finders. At the present time, the command posts of fighter-bomber air





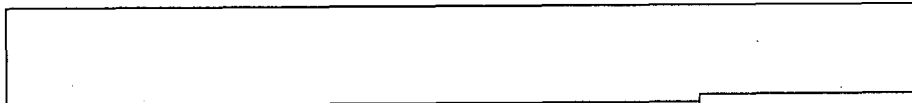
units and large units cannot guarantee the guidance of their own aircraft to enemy ground targets, first of all, because the targets of the actions will often be situated outside the limits of the zone of radar coverage, and, secondly, because the radars will, as a rule, be operated to control the fighters and fighter-bombers carrying on combat with the air enemy. Until special systems for guidance to ground targets are developed and the front aviation is equipped with them, it is advisable to introduce supplementary radiotechnical means, especially radar, for training into the T/O&E of air armies. Without them, even in exercises, directing aircraft from the ground to the area of search for camouflaged enemy nuclear means is unthinkable.

Revision of the organizational structure of aviation control is also needed. The necessity of this is dictated by the further centralization of the combat employment of all types of aviation and the equipping of control organs with special radiotechnical means.

Air support of combined-arms (tank) armies will now be carried out not by allocating a definite quantity of nuclear warheads, and flight resources of fighter-bombers and cruise missile launches to them in advance, but predominantly on the basis of the requests of the commanders of the combined-arms armies submitted to the front and the air army through the operations groups. The experience of recent exercises has shown also the shortcomings of this, the only correct method up to now of utilizing the aviation; thus, in carrying out air support by the method of satisfying requests, the time required to call up the aviation has considerably increased, and the pressure in the work of the staff and operations groups, due to the lack of practical skills in organizing and carrying out air support this way, has grown drastically. In connection with this, the commander of the air army has nevertheless sometimes had to transfer part of the flight resources to the armies so as not to slow down the operation. Evidently, it is still going to be advisable in the immediate future to allocate part of the flight resources to armies, especially to the tank army operating on the main axis, where the situation is very fluid and delays in air support are intolerable.

It is necessary for the staffs of air armies to carry out systematic and persistent work toward practical mastery of centralized control of aviation during support of attacking troops and toward finding ways to shorten the times required to deliver and coordinate requests and assign tasks to the air units. This last can be attained, as the experience of exercises shows, by using one-time command-signals transmitted centrally from the command post of the air army at once to the command posts of the



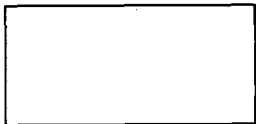


air regiments, and also by employing identical coded maps and procedure and signal tables. However, the main thing is not this, but, we repeat, availability of the appropriate radiotechnical means of control, which the air army does not yet have. It must have access to those technical means which would guarantee transmission of the necessary combat commands and instructions in the shortest possible time periods, with adequate security and over great distances. Especially important among them are the means that provide direct, stable and continuous communications for the staff of the army with the operations groups and the air large units carrying out the tasks of air support. An air army needs powerful radio sets, and radio-relay and selective circuit communications sets, with signal-coding and secure communications equipment. The equipping of the air large units of the air armies with secure communications equipment still remains at a very low level. The lack of the indicated means in the air armies forces them to use various retransmitters, which makes radio communications insufficiently reliable; it often is necessary to resort widely to using wire communications as well; these, the high-frequency ones included, are almost utterly useless for control of aviation considering the highly maneuverable forms of conducting modern operations.

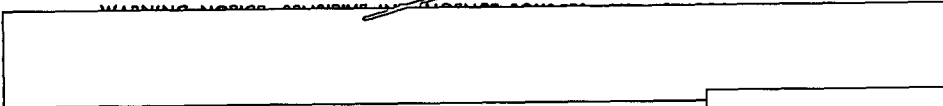
Under conditions of high rates of advance of the ground troops, mobile control posts on motor vehicles, armored personnel carriers, aircraft, and helicopters acquire primary importance in the system of control of aviation. Of late, aviation command posts mounted on motor vehicles are finding recognition everywhere and are being employed extensively in exercises. But they are all made amateurishly and differently and do not meet the demands made on mobile control posts. In view of this, there is a pressing need to manufacture such posts industrially and centralize delivery of them to large units and headquarters of the air armies.

The Main Staff of the Air Forces is taking steps to produce mobile command posts industrially and equip troops with them. The shortcomings of these measures, in our opinion, are, first, that it is planned to employ for the command post of the air army the production-line ZIL-157 vehicle (with semitrailer body), which in weight, size and turning radius is unsuitable for field and forest roads, and secondly, that these measures do not allow for providing mobile posts to the T/O operations groups of the air armies.

So, revising the organizational structure of the aviation control organs and equipping them with special radiotechnical and transport means of control are vital measures. However, it would be unwise simply to wait for their accomplishment and undertake nothing. In the course of combat

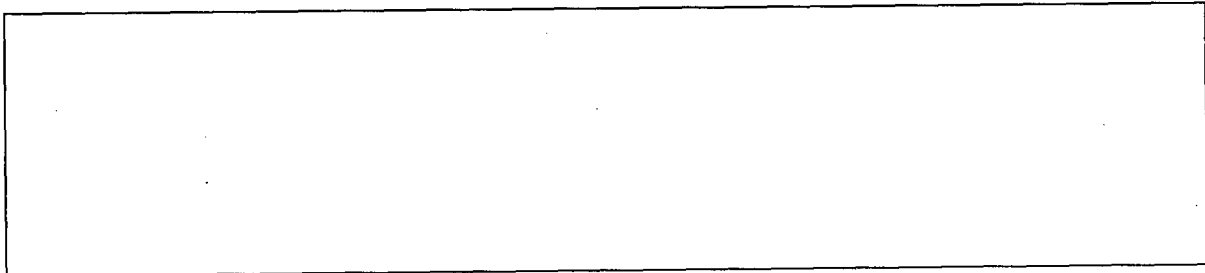


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training and the conduct of various exercises it is necessary to persistently carry out intense work to discover and utilize the potential capabilities inherent in the technical control equipment now in service, and to mobilize the initiative and creativity of personnel for the purpose of improving the existing methods and researching new ways of employing and controlling aviation in the course of air support.



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