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MORSKOY SBORNIK, SUPPLEMENTARY ISSUE No. 1

(Articles from the year 1971)

JOURNAL OF THE NAVY OF THE SOVIET UNION

TABLE OF CONTENTS

Initiative is Born in Work, by Captain 1st Rank V. Malyarchuk (from <u>Morskoy Sbornik</u> , No. 12, 1971 pp. 41-43*)	1
Let the Light Burn Brighter, by Vice Admiral B. Yamkovoy (from <u>Morskoy Sbornik</u> , No. 12, 1971, pp. 43-45)	6
Under Special Flight Conditions, By Colonel A. Makarov (from <u>Morskoy Sbornik</u> , No. 12, 1971, pp. 45-48)	11
The Storming of the Heights of the "Steel Cupola," by Captain 1st Rank I. Kirillov (Retired) (from <u>Morskoy Sbornik</u> , No. 12, 1971, pp. 64-66)	18
Longshore Bars, by Ye. Yanych (from <u>Morskoy Sbornik</u> , No. 12, 1971, pp. 80-81)	23
Officer Competition, by Rear Admiral A. Babushkin (from <u>Morskoy Sbornik</u> , No. 11, 1971, pp. 3-6)	26
Stages of Growth, by Captain V. Kaz'min (from <u>Morskoy Sbornik</u> , No. 11, 1971, pp. 55-58)	33
Aircraft in the Great Patriotic War (from <u>Morskoy Sbornik</u> , No. 11, 1971, pp. 84-85)	42
The First Japanese Nuclear-Powered Ship MUTSU (from <u>Morskoy Sbornik</u> , No. 11, 1971, pp. 86-87)	46
Political Worker and Aviator, by Captain 2nd Rank P. F. Ablamonov (from <u>Morskoy Sbornik</u> , No. 8, 1971, pp. 25-28)	50
Victory at Kaliakra, by Captain 1st Rank, P. V. Maksimov (from <u>Morskoy Sbornik</u> , No. 8, 1971 pp. 76-77)	56

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MORSKOY SBORNIK, No. 12, 1971, pp. 41-43.

INITIATIVE IS BORN IN WORK

By Captain 1st Rank V. Malyarchuk

Engineer-Captain-Lieutenant P. Karpov, a subunit head in a submarine has a good reputation. He displays initiative and is an exacting and thoughtful leader, a skillful organizer and trainer of subordinates. He has had solid special training and devotes considerable attention to teaching personnel skills in repair of equipment. He drew up a list of the procedures which leading petty officers and seamen should master. In port he conducts practical training in repair shops; he usually attempts to recruit petty officers and seamen to make various things needed for the ship and classrooms, and to carry out welding, assembly and adjustment of the machinery and systems for which they are responsible. The ship's equipment is kept in exemplary condition.

41*

Karpov's work is praiseworthy and deserves to be imitated. Once, when during repairs some difficulties appeared which threatened to throw the work-completion schedule off, he was able to get the personnel to cooperate with him. The equipment, which was repaired on schedule by the seamen and petty officers, worked faultlessly on the next extended cruise.

The main goal and basic task of any naval team is to use every means to increase combat readiness and to always be on the alert. A subunit or department head or commanding officer of a ship must coordinate the efforts of individual participants and motivate them to achieve what is planned. The best success is achieved by the one who works enthusiastically himself, displays creativity and initiative in fulfilling his duties, obtains high performance from subordinates and teaches this to them by personal example.

* Number in right margin indicates original pagination in the original text.

Thus, on a submarine where Senior Lieutenant
Polin was a group leader, equipment repair was
carried out by crew members between cruises. All work
was completed ahead of schedule. Clear organization
contributed to their success, as well as the fact
that the Commanding Officer took a daily interest in
the progress of repair work and the officers actively
strived to fulfill the plan. Socialist competition
was organized in the subunits for high quality and
timely completion of repairs. Proposals by seamen
and petty officers for speeding up the work and in-
creasing quality were carefully weighed. Everything
that was immediately implemented and questions which
arose were resolved on the spot.

On another submarine, where Senior Engineer-
Lieutenant B. Shevchuk was a subunit head, they also
worked up a plan and a timetable for repairs. They
determined the volume of work, and designated by whom
it was to be fulfilled and who was to be in charge.
But they were not successful in organizing the work
or assuring fulfillment of their plan. As a result,
repairs were delayed. Of course, not only was the
Commanding Officer guilty for poorly monitoring the
activity of his subordinate officers, but also the
senior officer, for passively carrying out his duty.

As experience shows, the person who fulfills
tasks creatively always gets better results in any
undertaking, who can focus on the essence of a task
and concentrate his main resources on that, and does
not overlook so-called trifles, which often undo
other officers.

As an example, let us take such an everyday
occurrence of Navy life as a ship going out on a speed
trial. A navigator who shows initiative is not
limited to the preparation of equipment and the neces-
sary papers. He must check the recording party, as
well as the overall posting of men, and each one's
training. As a result, personnel act efficiently and
confidently in setting the speed and correcting the log.

When an officer ignores what seem to him to be secondary matters, the quality of the speed trial is lower by far and the expenditure of time and of the ship's engine capacity increases unjustifiably.

Performance and initiative do not happen by themselves. They are imparted to an officer in the course of his career. Commanding officers, staff officers and political organizations play a large role in this regard. Everything counts here: a superior's personal example, constant exactingness, daily assistance to a subordinate, and a skillful approach to people.

At times, certain leaders pass over violations of the elementary requirements of military regulations and the principles of pedagogy, allowing their subordinates--and themselves--to deviate from their requirements.

----An officer received a task and carried it out on time. But he was unable to report the results to the leader, because he was too busy.

----One morning the Commanding Officer ordered an officer to report to him at 1500. But for some reason he was not able to be at the meeting place himself. The meeting never took place. The officer waited a good two hours in vain.

----A young subunit head worked out an alternate solution to a problem, but it turned out to be unacceptable. Instead of explaining to the officer the error in his reasoning or calculations, and pointing the way for further investigation, the senior officer declared indifferently: "Your alternative isn't any good."

Such cases are rare, of course. But does that really alter the situation? Once a violation occurs, then it is necessary to carry out a resolute struggle against it and its underlying causes.

At times we forget that subordinates follow the activities of their Commanding Officers attentively, imitate him and adopt his work style and character traits. So every officer, whatever his billet, is obliged to set an example of high performance and industry, initiative and effectiveness in his work. His behavior must be irreproachable.

There is much that is instructive, for example, in the activity of Engineer-Captain 2nd Rank V. Korablev, a unit staff officer. He has a good relationship with the department heads and engineer officers in the submarines, based on Party principles and the requirements of regulations. He enjoys a lot of respect; they come to him readily for counsel and they listen to his opinion. Korablev is noted for punctuality, effectiveness and purposefulness. He carefully studies progressive methods, attentively examines proposals by ships' specialists, supports their useful innovations, and reacts quickly to daily developments.

Thus various omissions in the maintenance of electrical equipment on certain ships showed up during routine examination. After analyzing the situation, Korablev invited the engineer officers in, thoroughly discussed the results of the examination, and dwelt at length on the causes of these defects. Then he gave every participant a chance to express his opinions and make proposals for eliminating the defects. In conclusion, the leader summed up, gave concise, specific instructions and established deadlines for completion of the work. The conference only lasted a short while, but was quite useful.

Occasionally some officers ask: "Aren't we too carried away with conferences? And are they so necessary?" Practice and experience show that it is impossible to get along without conferences--they are necessary both in the subunit, the ship and in the unit. But sometimes conferences are conducted without careful preparation, and on topics far removed from specific matters. A lot of time is spent in repeating truisms; such

conferences really are not necessary.

Any conference should give all the participants a certain body of knowledge, enrich their experience, increase creative activity and help them perform their assigned tasks more successfully. The leader must clearly understand the goals of the meeting being planned. He must thoroughly anticipate which problems it is advisable to bring up, and how to discuss them more fully. He must decide what kinds of factual material to use in his talk, what kinds of advice, recommendations and instructions to give the participants, and when to announce the time and agenda of the conference, so that the participants can prepare for it. The leader must approach his report with utmost seriousness and strictness. It should be concise, concrete and well-articulated.

/43

In other words, conferences should be a genuine school for officers, where they learn to execute military tasks in a businesslike and rapid manner.

Life teaches us that the more complicated the task, the greater the possibilities for demonstrating initiative and creativity. Officers' organizational talents and their ability to teach and train subordinates are revealed more fully precisely in the difficult circumstances of ocean voyages. Confirmation of this is the activity of the outstanding military units and subunits which Senior Lieutenants G. Bazhanov, V. Zalynskiy and others headed. They have solidly-based special training of personnel, independent training of petty officers and seamen, and the equipment is kept in proper condition. The submariners are doing a lot to lengthen the time between repairs of their equipment and to economize on materiel. They are striving relentlessly to increase military preparedness and to make effective use of training time.

MORSKOY SBORNIK, No. 12, 1971, pp. 43-45.

LET THE LIGHT BURN BRIGHTER

by Vice Admiral B. Yamkovoy

I read with attention the articles published in this periodical concerning the wardroom. All the comrades speak correctly concerning its large role in the formation of the world view and character of young officers, the knitting together of a friendly officers group capable of solving, with initiative, the tasks confronting the ship. It is gratifying that in many articles the need is expressed to increase the educational role of the ship's wardroom, to make it the officers' social center, where they can find out about various happenings, hear the opinions of their comrades concerning certain current questions, express their own judgments. And, of course, Captain 2nd Rank G. Gvadzabiya is right when he says that the wardrooms of all ships, from cruisers to small ASW ships, are a unique spiritual world all of their own, the world of a fighting man, a citizen--a patriot of Soviet land.

/43

I unwittingly recalled my years as a lieutenant. The destroyer BDITEL'NYY, on which I served as navigator, was going through the terrible years of the war. Several times she had to break through to besieged Sevastopol. The situation was tense. We were falling off our feet from fatigue. At times our nerves gave in. But in that anxious and difficult time, the officers found time to briefly drop into the wardroom, to share their joys and grief. And from this it became easier, as though they had gained strength.

The heart and soul of our group was the Commanding Officer, Captain-Lieutenant N. Boyarskiy, and the Commissar, Captain-Lieutenant F. Voznyy. One of them would relay the latest communique from the Soviet Information Bureau and a sincere, warm conversation would begin. Here also letters from relatives and close friends were often read. The men were drawn to each other and

this helped them to better fulfill their responsibilities, to fight better.

Later on, also during the war years, I had the occasion to serve on small submarine chasers. And I will say that in the tiny wardroom of a boat, designed for 4 to 5 men, the same friendly atmosphere prevailed as on the destroyer. It was no misfortune that everyone rarely gathered together at the table at the same time. But when two or three came in together, one felt the solid nucleus of a strong group here, the basis of which was mutual understanding, frankness and respect for each other.

/44

All of the participants in the discussion which took place in the pages of the periodical were unanimous that mutual understanding does not depend on the size of the ship, its complement or the capacity of its wardroom, but on the conditions established therein by the senior officers. And here much depends in the first instance on the ship's Commanding Officer, his Political Officer and Executive Officer.

Today, when our Fleet plows the expanses of the world ocean, when ships steam far from their native shores for long periods of time, the role of the Commanding Officer in every respect, including the education of the crew, has immeasurably increased. It is precisely he and his immediate assistants who are both the representatives of authority and thoughtful educators and unique models for emulation.

During my time in service, I have had occasion to meet many Commanding Officers. Some, for example, behaved in an emphatically strict and official manner, I would even say coldly, not permitting the officers to address them by first name and patronymic, even at meetings during off-duty hours ashore. Others, on the contrary, sought out the shortest way to the hearts of their subordinates through excessive simplicity and accessibility which bordered on familiarity. In my view, neither the one nor the other facilitates the establishment of normal relations, nor does it strengthen the

authority of the Commanding Officer. Obviously, he must never forget that he is dealing with future Commanding Officers of ships, with men who have chosen as their life profession, as he did himself, defense of the Motherland.

Officers want to see in their Commanding Officer a politically mature, intelligent man who is knowledgeable leader, a true senior comrade. And, under any circumstances, he "must be fair to subordinates, permit no coarseness, and must not denigrate their personal dignity."*

Obviously, the Commanding Officer must consider the character and inclinations of each officer more fully. Only then can he correctly establish relationships and become the heart and soul of the ship's wardroom.

The overwhelming majority of Commanding Officers fully understand this. Let us take, for example, Captain 1st Rank N. Ryabinskiy, Commanding Officer of the outstanding guided missile cruiser GROZNY. There is a large group of officers on the ship. And although the men there vary in age, duty assignments and experience, an atmosphere of friendliness and good will prevails in the wardroom of the cruiser. Here the opinion of each is considered, "trifles" are not forgotten: each officer is extended timely congratulations on his birthday and presented with a personal pie, each officer is given a chart of the ship's track after an especially remarkable cruise...

I understand the alarm of Captain 3rd Rank Ye. Nazarov concerning the frequent and therefore unnecessary transfers of young officers from ship to ship, which not only hinders the work of officer groups, but also the command development of young officers. They don't manage to become accustomed to one group, to become imbued with respect for the traditions of the ships, when they have to start all over again.

*Internal Regulations of the Armed Forces of USSR, p.54.

Captain 1st Rank B. Romanov's idea seems useful: to introduce on large ships an historic room--a sort of small museum. After all, many of our ships bear the traditional names of celebrated ships of the Russian and Soviet Navies. Now they keep in their Lenin rooms and wardrooms, mockups or pictures depicting their ship predecessors, photographs and personal items of the members of their crews. But neither the Lenin room nor even less the wardroom is suitable for keeping mementos of this type. And they are necessary.

I cannot agree with the comrades who consider the wardroom also a tactical classroom. Occasionally, of course, it is possible and at times even necessary to conduct critiques of shipboard exercises, skull sessions and seminars therein. But I am decidedly against having the wardroom constantly occupied, with various diagrams hanging up, with working models of the equipment used in the theaters of navigation set up, running lights, etc. The ship's wardroom is first and foremost a place of relaxation for officers--their "red corner", in the apt phrase of Captain 1st Rank P. Dubyagin. And the interior itself should gladden the eye.

/45

It is time to dispense with the mistaken opinion of some comrades that the wardroom and living spaces of ships must be decorated with prints of pictures by famous painters of the sea. On a distant cruise, how much more dear to the heart are landscapes of the Motherland! They have a soothing effect on the psyche. From the contemplation of such pictures, a love for the sea and for the Naval Service is by no means diminished. After all, a true seaman experiences a dichotomy all of his life: at sea, he thinks of the shore, and from the shore he longs for the sea...

Our warships are very good and very beautiful. But sometimes their creators forget about the men for whom the ship will be a native home for long months and even years. You look sometimes at a crooked angle or a machinery compartment deforming the wardroom and

you think: here obviously someone considered this an insignificant trifle, but this trifle acts like the well-known fly in the ointment. Really, wasn't it possible to somehow screen off the machinery compartment - for example, with a small three-dimensional picture - and even light it from within, in order to create the impression of panorama and contrast? Our designers need to confer more often with seamen and be in close collaboration with Navy doctors, and also to develop, with specialists in industrial and domestic aesthetics, the most acceptable economic interiors for shipboard spaces.

In conclusion, I would like to say that the discussion of ship wardrooms was undoubtedly useful.*

*With the article by Vice Admiral B. Yamkovoy, the editors conclude the discussion of wardrooms and thank the comrades who took part in it.

However, only the first step has been taken. Obviously, substantive exchange of experience in the operation of wardrooms aboard ships of various types, of the activity of the Councils, and - perhaps the most important - the great, active and purposeful work of all categories of officers, especially Commanding Officers of ships, to transform wardrooms into true centers of spiritual life, still lies ahead of us.

MORSKOY SBORNIK, No. 12, 1971, pp. 45-48.

UNDER SPECIAL FLIGHT CONDITIONS

by Colonel A. Makarov, Honored Military Pilot of the USSR

Experience has shown that flight controllers will operate efficiently and skillfully control their crews when their workshift proceeds smoothly and strictly according to plan. However, when the situation becomes complicated some of them get flustered and do not always correctly evaluate the situation, and at times they make wrong decisions.

/45

We recall an incident which took place several years ago. When a group of missile-carrying aircraft began to break off to land at night, one of the pilots lost his position in the formation and began closing in on the plane in front of him. Because the concrete runway was being used at the time, the flight controller ordered the crew to land on the dirt runway which paralleled it. In executing the maneuver, however, the pilot became confused by the lights on the dirt runway and landed outside of it, damaging the flap of the forward landing gear strut.

The crew, by not following the break-off procedure, was definitely at fault. However, the flight controller was also largely to blame for not having fully considered the level of the pilot's training, particularly his knowledge of the airport boundaries and the peculiarities of dispersal in night flight. Moreover, after having ordered the plane to land on the dirt runway, the flight controller neglected to instruct his assistants to monitor its approach. If this had been done, the crew's deviation from the runway axis could have been easily detected and they could have been warned about it. The flight controller, likewise, did not consider the fact that the plane had enough fuel on board not only to make several repeated approaches, but also to fly to the nearest airfield.

/46

This episode caused us to re-examine the practice of training the ground crew and to continue to improve and look for the best forms of organization of flight control. We began to more frequently train the control group and crews for operations under special flight conditions. Such experience is gained, generalized, systematized and disseminated in the Fleet. This enables us to evolve a single opinion on the action of the aviators in various situations to increase flight safety. Here are several examples.

After takeoff, hydraulic fluid began to seep into the plane's cockpit through a "knot hole" in the line. Visibility worsened when it changed to mist and they had to fly practically on instruments. In such a situation, the crew could have abandoned the plane. The pilot, however, together with the navigator and control group, skillfully succeeded in landing the plane. In so doing, they saved the lives of their comrades and preserved an expensive piece of equipment. True, the fact that the aviators had their oxygen masks on proved quite helpful - otherwise their breathing would have been impaired by the atomized hydraulic fluid.

In analyzing this incident, we concluded that the crew captain should put on his oxygen mask before takeoff even when flying at low altitude, and remove it only after he has climbed to the prescribed flight altitude. Similarly, proposals have been developed and implemented to check operation of the pitch damper during taxiing and also to shut it off whenever the plane starts to vibrate, etc. /47

Recommendations for the proper action to take under special conditions have been set forth in special manuals, which can be easily used on the ground or in the air.

One day, a malfunction occurred during the flight of a supersonic aircraft. The commander informed traffic control he was on "idle running speed". He shut off the "stopcock" and reported this to the crew and the command dispatching point. After opening the appropriate page

in the manual, the navigator checked the pilot's initial actions and prompted him accordingly. Thanks to this reciprocal control, the aviators successfully overcame a difficult situation and safely landed at their airfield.

In acting under special circumstances, the flight control officer should evaluate the air situation as carefully as possible. This situation is usually defined in the crew captains' reports and plotting board, with the aircraft headings plotted on the basis of radar, etc.

In this regard, a few words should be said about two of the basic methods of tracking targets.

According to the first method, the targets are tracked on a plotting board by using a marking pencil. Aircraft models are used in the second method.

Flight control experience gained over the years shows the second method to be more conventional and reliable. What are its advantages?. It is more advantageous because it is more graphic and provides a three-dimensional view of the air situation. In addition, it helps to more accurately determine the number and location of aircraft the use of symbols: classification symbols are assigned for each crew in the vicinity of the airfield and en route and these are then inscribed on the models. Flight altitudes are determined by color: red for the flight altitude of aircraft within the circle and white for those outside of it.*

*Foreign targets are designated using models of a different color.

Moreover, working conditions for the radar plotters are improved, since the plotting board will not be overshadowed by the many course lines recorded by the marking pencil. The scale on the plotting board is 1 centimeter per kilometer. An aircraft model is

placed on the board in a circle with a diameter of 15-2 cm. This corresponds to the air space it occupies, taking into account the various errors and the path covered in one rotation of the radar antenna. It enables crews that are converging to be warned in time and to be separated in a difficult situation.

Diagrams of landing approaches, exits from the arrivals in the airfield area, flight courses, etc can be found on all plotting boards. When a plane deviates from the prescribed course beyond the permissible limit, the plotter informs the flight controller and marks the target area with his marking pencil. But when the plotter "loses" the target, he records the time and crew index taken at the last contactpoint and reports this to the flight controller and places a model in this special sector of the plotting board.

And all of this enables us to recommend the second method as the basic one.

It is essential not only that the flight controller and his assistants be well acquainted with and freely oriented toward the air situation, but also that they provide the crews with favorable conditions for the conduct of their mission. To do this, the flight controller should study the air situation before each flight shift. He predicts the effect it will have on the success of the flights, considering the fact that the airways are already becoming quite crowded over several sections of the country. The number of Civil Air Fleet routes is constantly increasing, as well as the heavy volume of traffic along them. This is why the flight controller preconsiders every detail in controlling crews, and establishes and constantly maintains cooperation with adjacent airfields.

Much depends on the flight controller's behavior and actions during the shift. He should therefore be a clear thinker, he must firmly implement decisions

48

and be completely fair toward all of his pilots, regardless of their rank or position.

Self-control is an essential part of the flight controller's nature, since he is the one who is responsible for the fate of a crew in a difficult situation.

A firm conviction regarding the reliability of the aircraft (helicopters) and their equipment forms the basis for successful operations by the flight controller and aviators.

Here is what one commander said in this regard: "When I arrived in a subunit which was just beginning to familiarize itself with a new aircraft, I detected a lack of trust in it. The men, it seems, were intimidated at the sight of an aircraft having a somewhat unusual shape. Even those who flew in it (there were two of them) spoke cautiously of its merits".

We had to more quickly inspire confidence in new equipment. After having thoroughly studied the aircraft, the commander was one of the first to go up in it. Afterwards, he met with his aviators and in a free and easy conversation share his impressions of the aircraft. Retraining then proceeded more quickly and was more successful.

While cultivating high morale in our aviators, and faith in the reliability of the equipment, we shall strive to analyze as thoroughly as possible every instance of unsatisfactory operation, and to find convincing reasons for what has occurred. We will analyze the actions of the crew and flight controller in a difficult situation. We must indicate the nature of the physical processes which accompanied the failure of a particular system, we will note the measures taken to remove the causes of this phenomenon, and make precise recommendations to flight personnel.

The flight controllers and aviators develop their actions under special conditions on simulators.

During the exercises, equipment malfunctions are introduced suddenly the same way they actually occur. Moreover, instructors also simulate them in flight.

In training a flight controller, we devote primary attention to his ability to quietly and sensibly assess the developing situation, to make a correct decision and efficiently transmit it to the aircraft.

We recall an incident which took place at the outset of mastering flight under adverse weather conditions. Two officers entered the area in an IL-28 and a MIG-15 under marginal weather conditions. A heavy rain fell. Visibility was about 1 km. The crew of the IL-28 was not prepared to land under such conditions, but the calm commands of the traffic controller inspired confidence in the pilot and he met the task outstandingly. The traffic controller became very nervous in the situation (the MIG-15) and frequently corrected the aircraft's course. He conveyed his state to the pilot, who landed only after making repeated approaches.

Here is still another example of the flight controller's role. A young pilot was conducting an instrument flight exercise. He was given the command to land when he was on a landing course about 18-20 km from the runway at an altitude of 300m above the prescribed. The pilot informed the flight controller that he could not prepare himself to land this approach. But the flight controller, categorically responded: "Land". As a result, the aircraft overshot the runway, and proceeding on one landing gear, landed in a field.

In analyzing the incident cited above, the flight controller tried to prove that the crew should have had no difficulty in carrying out his order, and that he himself had landed under more adverse circumstances. This is how an experienced commander sometimes approaches the evaluation of a subordinate's potentialities and individual capabilities. And indeed the pilot not only committed an error in landing but received a severe moral shock as well. He will have to work very hard to

regain his former confidence.

The aerial warriors who vigilantly guard our Soviet Motherland will conquer the vast expanses. The control group will attentively track the crews, prepared at any moment to come to their aid and support them at a difficult time.

Photographs - p.46, Caption: Flight day.

p.47, Caption: Colonel V. Smirnov, veteran of aviation and participant in the Great Patriotic War, skillfully and efficiently controls the flights.

MORSKOY SBORNIK, No. 12, 1971, pp. 64-66.

THE STORMING OF THE HEIGHTS OF THE "STEEL CUPOLA"

By Captain 1st Rank I. Kirillov (Retired)

There are few who know about the Zapadnaya Litsa River, which is in the Polar Region, yet in the years of the Great Patriotic War, especially in 1941 and 1942, bloody battles took place here. The Hitlerites were striving to break the resistance of the Soviet forces, to seize Murmansk - the principal port of frost-free Kola Bay - and to capture Polyarnoye, the main base of the Northern Fleet. German units of the 19th Mountain Rifle Corps, under General Dietel, were operating here with large reinforcements. It actually amounted to an army. Units of our 14th Army were facing the enemy. The 12th Special Naval Infantry Brigade of the Northern Fleet was also operating here. This brigade was formed in the middle of August 1941, and was designed for carrying out special missions, and, first and foremost, for preparing and landing naval forces behind enemy lines, as well as for defending naval bases against enemy land forces, under the conditions of the Polar Region.

64

The brigade was commanded by an experienced commander, Colonel V. Rassokhin, who was decorated with the Order of the Red Banner for courage displayed in the struggle for the Motherland during the period of the war with the White Finns. The chief of staff of the brigade was Colonel V. Rodionov, who fought in the First World War and the Civil War. The chief of the political department was Regimental Commissar A. Zotov, who had been in Party work before the war.

The brigade consisted of six battalions; the best commanders and political workers of the Fleet were appointed commanding officers and commissars of these battalions.

In November 1941, the Military Council of the

Fleet assigned a mission to the brigade staff- to occupy a sector of the land front in the Murmansk area and then to drive the enemy back to the river line of the ZapadnayaLitsa River.

Three battalions were allotted for the accomplishment of this mission. These battalions were consolidated into a regiment, headed by the Brigade Chief of Staff, Colonel V. Rodionov. Senior Political Instructor Shchetkin was designated commissar of the regiment.

On 9 November the regiment occupied the sector assigned to it and commenced active combat operations. The enemy did not withstand the swift attack of our Naval Infantry and began to retreat westward toward the Zapadnaya Litsa River. During the seizure of the abandoned enemy positions, our combat forces discovered many Red Army men who had been taken prisoner by the Hitlerites and mutilated. This was a frightful spectacle. The Fascist butchers had apparently used one of the dugouts, where the tortured troops were discovered, as a torture chamber, and, retreating mined it. The slightest contact by the troops would set off an immediate explosion, but our torpedomen quickly detected the mines and cleared them from the dugout and buried the unknown heroes with military honors beneath undersized little birches in the stony ground of the Polar Region, to the extent possible in a front-line situation.

In December 1941, the remaining battalions of the brigade were transferred to the front in the vicinity of the Zapadnaya Litsa River. The winter was especially cold in the Polar Region at that time. Storm clouds covered the sky, and snow flurries often pelted down with merciless force on all living things. But we were well clothed; all our men and officers had sheepskin coats, felt boots and a uniform fur cap with ear flaps. The Hitlerites continued to wear the summer uniform. Prisoners revealed that they could not change into winter uniform because Soviet submarines had sunk the transports carrying warm clothing.

Operating continuously with small subunits, we

exhausted the enemy, keeping him under constant stress. The surprise and speed of our strikes induced fear in the Hitlerites. The operations of our scouts, especially from the reconnaissance detachment commanded by Senior Lieutenant Grachev, were nothing short of daring. Crossing the front line, they went far to the rear echelon of the enemy, attacked his transportation, severed lines of communication, and captured prisoners. /65

At this time the 14th Army Command was preparing for active offensive operations, in order to drive the enemy back a little further from our bases. In order to break through the front, it was necessary to seize the height which dominates this sector--Hill 258, or "The Steel Cupola", as we called it. Several zones of pillboxes, bunkers, minefields and wire entanglements surround it. The Fascists considered the hill impregnable. For us, however, it was a gateway, which, if swung open, would enable us to rip apart the enemy defense line and open the way for full-scale offensive.

The Karelian Front Command ordered the 12th Naval Infantry Brigade to take this hill.

The brigade staff painstakingly worked out a plan to capture the heights of the "Steel Cupola". We could not destroy the artillery fortification, since we had nothing but a division of 45s, and to take it without artillery preparation was very difficult. Then we decided to make use of the climatic peculiarities of the Polar Region, especially the polar night. In the course of twenty-four hours, the weather changes several times: at one time there is a clear sky and the northern lights, and at another - dense snow flurries. In a snowstorm it is easy to become disoriented and become a victim of the elements. We took advantage of this. Heavy snow flakes buried the minefields and wire entanglements and prevented the battle outposts from conducting observations.

On one such night, having put two battalions on skis, we launched an assault on the heights. The enemy was caught by surprise. The Hitlerites detected our

Naval Infantry only when grenades started to fly into the pillboxes and bunkers. The Fascists, running out in panic, were shot down with automatic weapons. Our losses were insignificant.

On the occupied heights our men discovered bunkers which had been built out of soldiers' corpses. Due to the absence of wood, the Hitlerites had used human material in building the fortification. It was sickening! If the Fascists could so outrage the memory of their own soldiers who had perished, what sort of barbarity would they be capable of exercising in the treatment of Soviet men falling captive to them? /66

The men of the 1st Battalion (Captain Semenenko, commanding officer, and Senior Lieutenant Gal'chenko, military commissar) and the men of the 4th Battalion (Captain Petrov, commanding officer, and Senior Political Instructor Pavlov, military commissar) especially distinguished themselves in the battle for the heights.

The Hitlerites did not want to resign themselves to the loss of the "Steel Cupola", and subjected it to concentrated artillery and mortar fire from adjacent heights. In order to avoid unnecessary sacrifice, our subunits were withdrawn from the summit toward the foot of the hill. Then the enemy began to probe for weak places in our defense. They succeeded in wedging themselves in at the junction of the brigade's right flank and the units of the 52nd Division of the 14th Army, which was occupying hill 263. The Naval Infantry position deteriorated. To aid them, the Northern Fleet Command detached an additional battalion of Naval Infantry under the command of Major G. Prusenko and the military commissar, Senior Political Instructor A. Sumin. During their march to the hill, they stopped Red Army men who were falling back; they deployed the battalion for battle, and, closing on the enemy, opened intense rifle and machine-gun fire, then launched a counterattack. The enemy did not withstand the swift attack, and retreated in panic.

During the battles at the Zapadnaya Litsa River, the 12th Special Naval Infantry Brigade was converted into a well-knit battle formation. The men and their

commanders mastered combat tactics under the adverse conditions of a mountainous terrain, while displaying unparalleled steadfastness and courage.

Photograph: - p. 65, Caption: Shift of position in the hills of the Polar Region.

LONGSHORE BARS

by Ye. Yanych

Among the marine aggradation forms, longshore bars are the most abundant. They are developed in the coastal topography of the bottom of oceans and seas, extending along shelving shores sometimes for tens of kilometers. About one-third of the coasts of the world ocean are blocked by them.

/80

Hydrodynamic factors, slope of the bottom, configuration of shores and nature of the earth comprising the continental shelf affect their formation.

On shelving shores, 7-8 bars are formed, and on steep-to-shores 3-4. Situated one after another at a distance of 200-300 m, they occupy a foreshore with a width of 2-5 cables from the water line (Figure 1). In a smooth shoreline, the bars are continuous (without washouts), but with a broken shoreline configuration they are frequently eroded (Figure 2).

Longshore bars are related to the dynamic form of bottom topography. Under the influence of sea, currents and streams they change their dimensions, migrate along the continental shelf, sometimes disappear and reappear. The height of bars varies from 1 to 3.5 m, the depth above the crests varies from 0.5 to 2 m.

The process of generation and development of longshore bars is extremely complicated. Waves, wave currents, bottom countercurrents, longitudinal littoral and rip currents, as well as tide and surge fluctuations of the level are involved. Waves, at the moment of their disintegration in shallow water, produce an excavation of the bottom, i.e., they dig up and roil loose particles of earth, which are carried by a wave current toward the shore. Bottom countercurrents and

rip currents transfer particles of earth toward the sea (Figure 3). These complicated movements of water cause attenuation of counterflow velocity and facilitate formation of longshore bars.

The formation of bars depends not only on the factors cited above, but also on the duration of their effect. Regarding the prolonged creative activity of waves, wave currents and littoral currents, it has been established, from observations that complete regeneration of previously eroded longshore bars usually occurs with slow attenuation of a high sea. If the sea subsides rapidly, washed-out bars are restored only partially or not at all.

/81

It is recommended that mariners proceeding along the shoreline not cross the 10-meter depth curve, since bottom topography is constantly changing here, and even on large-scale charts depths may not correspond to reality.

Landing ships and auxiliary craft, in planning their inshore operations, must carefully study the approaches to the shore, take depth sounding or make an aerial photographic survey of the continental shelf. On photographs longshore bars are well scanned, and it is possible to select an area not blocked by them.

The most favorable time for floating craft to approach shore is the moment after a rapidly abating storm, when with great probability it can be assumed that longshore bars are washed out and have not regenerated.

With the attenuation of storm activity in the spring-summer season, they are formed more intensively than in the autumn-winter storm season, when the erosion phases predominate over the regeneration phases.

In conclusion, it must be emphasized that when sailing in the foreshore, Commanding Officers of warships and masters of merchantmen should take into account the nature of bottom topography and by-pass sections of the continental shelf which are subject to

the formation of longshore bars.

Fig. 1. Profile of inshore sea bottom.

(a, b, c - longshore bars).

1) Wave current; 2) Bottom countercurrent

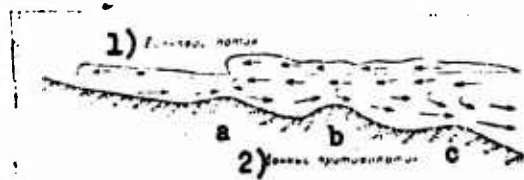


Рис. 1. Профиль подводного берегового склона
(a, б, в — подводные валы)

Fig. 2. Map of inshore sea bottom.

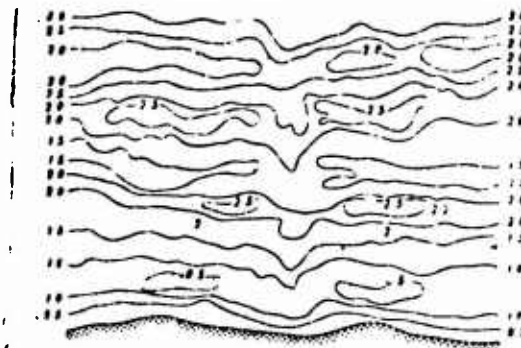


Рис. 2. План подводного берегового склона

Fig. 3. Diagram of currents in foreshore

1) Wave current; 2) Rip current; 3) Surf zone.



Рис. 3. Схема течений в прибрежной полосе

MORSKOY SBORNIK, No. 11, 1971, pp. 3-6.

OFFICER COMPETITION

by Rear Admiral A. Babushkin

The entire Soviet people have responded with an enormous upsurge in work and political activity to the resolutions of the XXIV Congress of the CPSU. The most striking manifestation of the creative activity of the masses and their working enthusiasm is the nationwide scope of Socialist competition to fulfill the goals of the ninth five-year plan successfully. L.3

Lenin's great foresight was brilliantly confirmed: that only Socialism, by wiping out the exploiting classes and the enslavement of the workers, first opened the way for competition on a truly massive scale, where the toilers "could prove themselves, develop their capabilities, discover the talents which are an untouched spring in the people and whom capitalism has crumpled and crushed in the thousands and millions."*

* V. I. Lenin, Poln. sobr. soch. (Complete Works) Vol. 35, p. 195.

The resolution of the Central Committee of the CPSU "On the Further Improvement of the Organization of Socialist Competition" emphasized that the development of Socialist competition and the improvement of its organization are the most important condition for successful implementation of the program of economic and socio-political development of the country advanced by the XXIV Congress of the CPSU.

Competition at all stages of Socialist and Communist construction was and remains a powerful means of developing the creative initiative of the masses, the formulation of a Socialist collectivism. It has

always served as an effective method of advancing productive forces, of improving industrial relations, educating the workers, and involving them in the management of production. Socialist competition generates work enthusiasm and creativity in the masses, promotes millions of progressive workers and innovators, efficiency experts and inventors.

In the Soviet Armed Forces, with the same interests as their own people, favorable conditions have been created for the emergence of intelligent initiative and useful creativity. Socialist competition in the Army and Navy is a powerful lever for raising the activity of the personnel in fulfilling combat and political training plans and increasing the combat readiness of subunits, warships and units. It encompasses various aspects of Army and Navy life.

Competition in the Navy, as in the Armed Forces overall, is not a new thing. It has been carried on for many years; continuously developed and enriched, it absorbs ever newer bits of experience.

At present there are many warships in which competition among officers is being skillfully organized and is an effective means of raising the level of activity, creativity, and mobilizing fighting men to achieve high marks in combat and political training.

During a long ocean cruise on a submarine commanded by Captain 2nd Rank A. Shirochenkov, there was active competition between watch sections and battle stations for top ratings. The officers also had individual duties, and they, too, struggled to fulfill them. Captain-Lieutenant N. Martynov, for example, in addition to his specialty (Electronic Department), studied navigation instruments and learned to determine the ship's position and to plot a course. The Department Heads, Captain-Lieutenants V. Kudryashov and Yu. Spichkin, qualified for independent ship command, and the group commander, Senior Lieutenant

4

K. Panfilov, for command of a department.

Once a month during the cruise, the results of fulfilling obligations were summed up for each officer and his subunits and for watch sections and the watch officers in charge. The Party Bureau heard how well the Communist officers are competing. The crew of the submarine completely fulfilled its commitments. The ship was rated outstanding and this was entered in the Fleet Roll of Honor.

There are many examples of capable organization of Socialist competition; however, its possibilities are still not being fully utilized.

Not all commanders and political organs take into account the increasing demands in organizing competition. Several of them are satisfied with the formalities in this important matter and do not always set high standards for fulfillment of assumed commitments, do not devote the necessary attention to the preparation for and organization of qualification for class rating by officers.

Socialist competition is the creativity of the masses. But it requires constant leadership, thorough examination of a matter, critical analysis and evaluation of the results of the work, exposure of the reserves, raising the political consciousness of the men, as one of the decisive conditions for success in competition. It is necessary to actively support everything new and progressive, to concentrate attention on the main thing, to determine correctly the basic direction of competition during a period of training, a cruise or study, to mobilize Communists and Komsomol members, and all personnel for the successful accomplishment of tasks. "The meaning of competition," said L. I. Brezhnev at the July 1970 Plenary Session of the Central Committee of the Communist Party of the Soviet Union, "is that it is a movement forward, the creation of conditions under which the vital creativity of the masses, their capabilities and talents can be revealed".

Experience shows that the possibilities of Socialist competition, a powerful lever for increasing the activity of fighting men to decisive degree, depend on the degree of leadership. Commanders (officers in charge) organize Socialist competition, together with political organs and Party organizations, with the active participation of staffs.

The staffs must render aid to subunits in fulfilling Socialist obligations, in organizing the education process, the practical use of training time and facilities, and by not allowing personnel to be distracted from their studies. They are obliged to continuously control the course of studies and the status of service, to take into account the fulfillment of Socialist obligations. Komsomol organizations also take an active part in this important matter.

Officers of warships and units, as before, participate in competition along with their subunits. At the same time, they assume individual obligations. As experience shows, the obligation of officers consists of a number of things, directed at the broadening of political outlook, the mastery of military-technical skills, generalization and the introduction of advanced experience, raising the cultural level, active participation in social work, the effort to economize the rational expenditure of fuel and lubricants, etc.

The problems of raising the level of operational-tactical, military-technical and special training, the perfection of work methods in the subunits, participation in the generalization and introduction of advanced experience, of methodical, military-scientific, cost-efficiency and inventive work are reflected by officers in staffs and institutions in their individual obligations.

Unfortunately, Socialist competition is not given its proper significance in all staffs and institutions. For example, the staff of one unit at a Party conference made an excellent decision, but did not organize its execution, did not help the officers assume the necess-

ary obligations. For example, among the obligations of Captain 3rd Rank K. Tsey there was nothing concerning the improvement of work methods, or generalization and introduction of advanced experience. Captain 3rd Rank R. Semenov was obliged to generalize the work experience on long cruises, which he attended 10 times, but avoided questions about cost efficiency and political education. In a staff there is no unanimity of opinion on how to evaluate the fulfillment of obligations, how to specifically to organize the effort to designate the best specialist, best section, combat team.

15

V. I. Lenin considered the most important principles in the organization of Socialist competition to be publicity, comparability of results, exchanges of experience, and moral and material stimulation of progressive workers. This directive from Lenin requires the propagandization of intelligent initiative of officers, the disclosure of their experience in attaining successful results, making extensive use of the press, radio and visual and oral agitation.

The competition of officers of various warships, units and institutions has much in common. For example, common to all is the effort to successfully fulfill the tasks set for a ship or unit, to increase the qualifications of personnel and the effectiveness of work, to behave irreproachably, with honor, dignity, an exemplary outward appearance, and observance of moral and ethical standards of behavior, a cautious regard for public property and an economical expenditure of material resources, raising the political and cultural level, and active participation in social work.

But every group has its own characteristics which result from the concrete tasks assigned to a warship or unit individually. We must always remember that in competition combat capability and combat readiness are the main things.

Consequently, the fundamental obligation of officers is to increase tactical and special readiness, qualitative emolument of combat training tasks, reducing the period of time required by personnel to bring

weapons and equipment into combat readiness, training of outstanding personnel and class specialists, exemplary performance of service and maintaining a high degree of military discipline, and maintenance of the ship and all its complex equipment and weapons in an outstanding condition.

In the scientific research institutions of the Navy, the main competition is the effort to increase the effectiveness of scientific work, accelerate introduction of the achievements of science and technology, the training of scientific cadres, and the effort to achieve the title of shock workers and collectives of Communist labor.

In the military training establishments, the students and cadets assume individual obligations in raising the quality of training. Here the pursuit of grades must not be permitted nor lowering of the standards of achievement for students and cadets.

It ought to be noted that competition between instructors, courses and departments is not conducted. But this does not mean that instructors cannot assume individual obligations to raise their own personal political and theoretical level and methodological mastery, and to participate in scientific research and efficiency work.

In Navy enterprises the principal elements of Socialist obligations of servicemen (including officers), workers, and office employees are: raising the productivity of work, professional mastery, the effort to successfully fulfill State plans, timely introduction of objectives, high quality and lower costs of production, maximum use of technology, and development of production.

In organizing Socialist competition among officers, it is necessary to demonstrate constant concern with increasing the role and authority of outstanding personnel, and strictly implement the established system of incentives. It is a matter of honor for an officer himself to strive for the high rating of outstanding. And this means that

an officer must fulfill his service obligation in an exemplary fashion, have a firm grasp of Marxist-Leninist theory, receive outstanding marks in the basic subjects of training, have an outstanding knowledge of his weapons and equipment and keep them in combat readiness, actively participate in social and political life, and not have any disciplinary reprimands.

An officer in direct charge of a subunit (unit) can achieve an outstanding rating if, in addition to fulfilling the regular requirements, he strives for a high degree of combat readiness and outstanding and excellent marks in combat and political training of his subordinates.

/6

Outstanding officers (also extended-enlisted service men) whose subordinate subunits and units were outstanding for two or more years may be presented with Government awards, be promoted early, and have advantages conferred in entering higher educational institutions.

The decisions of the XXIV Party Congress aroused an immense patriotic upsurge among Army and Navy personnel. The fighting men selflessly struggled for high marks in Socialist competition. Officers lead, organize, and march in the front ranks of the competitors.

In response to the concern of the Party and Government over the Armed Forces, they inculcate in their subordinates ideological conviction, a constant readiness to fulfill their military duty, to devote all their strength and energy to the implementation of the historic decisions of the XXIV Congress of the CPSU.

The competition of officers is the lever for attaining success on ships and in units, - a powerful stimulus for increasing creative activity in the work of all personnel. Therefore, the duty of officers is to lead the competitors.

MORKSOY SBORNIK, No. 11, 1971, pp. 55-58.

STAGES OF GROWTH

by Captain V. Kaz'min

"In the landing area there is a strong cross-wind. You are cleared for landing on the water."

55

The voice of the air controller was even, but all the same it forced Lieutenant Valeriy Andreyev to prick up his ears. "However, if it's on the water, so be it," thought the pilot. "That's why we have an amphibious aircraft."

"Turn right to the course..." sounded in the headphones.

"Roger!"

Andreyev smoothly turned the control stick, then just barely "met her:" the amphibious aircraft obediently entered an invisible circle.

"He flies with precision," thought the crew captain, Captain V. Khrennikov, approvingly concerning his copilot. Busy with radio communication with the "ground", he did not interfere with piloting of the aircraft. But he did keep the instrument readings in his field of vision.

Andreyev really did have an outstanding feel for the aircraft.

The lieutenant precisely steered the aircraft onto the landing path and began to let down. The aircraft swooped down toward the water like a gull. Valeriy was proud in his soul that he was the one they entrusted to fly such a beautiful airship.

"Altitude 200...150...100..."

The navigator's voice methodically read off the

instrument readings. The foaming waves rapidly approached the aircraft. Now both pilots had their hands on the control sticks. Andreyev did not take his eyes off the gyro horizon. The crew captain himself would determine the altitude for beginning to level off and would hold the aircraft in the center of the landing area, which was marked off by buoys. The young pilot's task was to prevent the aircraft from heeling over during the water landing and landing run.

The waves were coming closer and closer. And now a white-foamed bow wave arose along the sides and a white ribbon stretched out behind the stern of the amphibian. In the rays of the sun, the spray erupted in a cheerful rainbow.

An accustomed hand lay on the throttle grip. Now! Reverse the propellers...The engine began to roar angrily. An invisible force pushed against the backs of the pilots. The speed of the aircraft sharply decreased.

Soon the strip of the concrete runway appeared. The lieutenant lowered the wheels. They came out of their recesses with a click of the lock and were submerged in the onrushing wave. Captain Khrennikov moved the engine control levers forward. The powerful motors easily moved the heavy aircraft onto the sloping shore...

The propeller blades stopped. An unaccustomed calm reigned in the cockpit. After gathering up documents and equipment, the crew captain and navigator left. Only Valeriy did not get out of his seat.

Having unfastened the seat belt and freed himself from the parachute straps, the lieutenant leaned against the high back of the seat and covered his eyes. The events of the past two years passed before him like the frames of a movie film...

A colonel with the insignia of Pilot 1st Class on his tunic cordially greeted the novices.

"We have been waiting for you for a long time,

comrade lieutenants. We need you very much. Get yourselves organized, take the exams quickly, and fly, fly!"...

When Andreyev left the office, the words "wait--fly, wait--fly" continued to sound in his ears.

/56

The first duty station...even back at the school, "experts" described it approximately as follows: "A brackish lagoon, and around it--a barren steppe. Even the water is brought in."

Actually there is both a lagoon and a steppe here. But in no way could it be called barren: no matter where you looked--fields, gardens. And the water supply system in the town was already more than ten years old. But the main thing was that beyond the lagoon--as far as the eye could see--stretched the sea, azure and affectionate in clear weather, leaden gray and angry when stormy.

In the subunit they quickly became accustomed to the energetic and sociable lieutenant. His impatient longing to climb into the sky as soon as possible appealed to the souls of many. Valeriy diligently studied the equipment, diligently involved himself in training exercises.

He remembered well the words of the graduates of the school: "...you will become real flyers when you decorate the cover of your diploma not with gilding but with sweat poured out in diligent labor," and he always tried to follow this advice. Soon Andreyev began to take part in preparing the aircraft for flight.

Valeriy had studied tactics in school, but Specialist 1st Class Captain N. Shanin thoroughly explained to the lieutenant how to apply it in practice. The young officer learned many good things from his experienced mentor, a repeated participant in competitive searches for submarines.

The flyer's days were filled to the limit, but all

the same he found time for participation in the social life of the subunit.

His comrades-in-arms had a high regard for the industriousness, sociability and knowledge of the officer. At the Komsomol meeting when they were nominating candidates for the Bureau, someone's voice rang out clearly: "Andreyev!"

It was warmly seconded.

A year passed. The lieutenant grew perceptibly matured as an air fighter. Now he was serving in the crew of Pilot-Engineer Captain V. Khrennikov.

The captain was recently designated crew captain and Valeriy attentively watched his first steps, emulated all that was good from his senior comrade. Life itself assisted in this.

His second independent night flight took place under adverse conditions. The aircraft entered a heavy rain belt. Nevertheless, the crew fulfilled the mission in an outstanding manner.

The first successes can weaken a man. And then let some unpleasantness occur. Valeriy became convinced of this through personal experience.

...The long flight was coming to an end. Khrennikov and Andreyev smoothly piloted the aircraft toward the runway. But after touching down, the aircraft was suddenly and irresistibly drawn to one side. With difficulty the pilots succeeded in stopping it on the edge of the landing strip. However, the cover on the right wheel split all the same. It was ascertained that the wheel had been braked while still in the air. And this is how it happened.

Valeriy had decided that, under ordinary weather conditions, one cannot prepare especially carefully for landing. He did not notice that his feet were on the upper part of the pedals and when the aircraft "shuddered"

he involuntarily depressed the brake. Yes, the sky does not excuse mistakes. It demands from everyone precision in action, outstanding mastery, thorough-training. After that incident, Valeriy learned not to delude himself with past achievements.

/57

Valeriy often shared his thoughts about the service, reflections concerning his career, with his school buddy, Lieutenant Biktimirov. Biktimirov was an energetic, ardent man. He expressed his dream categorically:

"The left seat as soon as possible! To be the crew captain, the master of the aircraft--that's for me!"

But it was strange. A year ago, Andreyev, without thinking, would have shared the opinion of his comrade, but now he thought somewhat differently. After all, a flyer must become not only a pilot, but also a commander and instructor, a man of profound knowledge and rich soul, a man who thinks not only about his everyday affairs, but also sees in them a small part of the great common cause.

Two memorable events occurred that year. Andreyev became a candidate for membership in the CPSU. And for high marks in combat and political training, his unit was awarded the Lenin Jubilee Testimonial.

It was presented to the flyers in a ceremonial setting. Valeriy proudly stood shoulder-to-shoulder with his comrades-in-arms. He understood that in the successes of the unit, achieved through persistent work in flights, he too had a share...

And now the crew is once more over the sea. Huge dark clouds, like the towers of a gloomy fortress, overshadowed nearly the entire sky. They were sharply outlined in the ominously red glow of the sunset. Occasionally alarming flashes tore the sky, then their reflection caught the concentrated faces of the pilots in the semi-darkness of the cockpit.

Andreyev tightly clutched the resiliently quivering control stick. With each flash of lightning the characteristic crackling resounded in his headphones. The flyer understood that the storm was still faraway, but in his soul he was uneasy.

"If only I don't weaken!" The lieutenant got himself in order and glanced sideways at Captain Khrennikov. The latter maintained an even disposition. "A true commander: decisive, bold." the lieutenant thought of him with admiring envy. He also liked the navigator, Viktor Nikolayev. He was an experienced man, had flown several years in the North. But today, for some reason, he had been silent for quite a while...

"How is it going, navigator?" The voice of the captain resounded over the intercom, as if discerning the thoughts of the flyer.

"I don't see the shore, captain, but there are "corridors" in the "cumulus" clouds. We still have to request permission to go around."

58

The air controller gave his "affirmative" to this. In the eerie blue light of the cockpit, Captain Khrennikov's hand swung: well, begin. Andreyev immediately put the aircraft into a turn.

Nikolayev was uneasy. On the radar screen, the blip from the turning point in course merged with the bright spot caused by the storm. Because of interference the radio compass was beginning to malfunction. And below--the sea. One cannot orient oneself from it, either at night or in the daytime. And you can't measure the wind. How necessary are wind data! Both for plotting the course and for the precise entry into the area of the mission.

Outside the cockpit--thick darkness. One felt like immediately turning back. But the crew did not turn aside. And Valeriy, although it cost him considerable effort, was outwardly calm. He flew the aircraft confidently and precisely...

Nikolayev once more bent over the viewing hood of the radar. Finally the bright spot from the clouds was displaced to one side. The characteristic outline of a small island was indicated on the screen. True, not for long, but the navigator determined the aircraft's position.

"We have arrived in the area;" reported the navigator.

"The buoy-laying course is 240 degrees," Andreyev heard in his earphones.

The aircraft seemed to slide along a taught wire. Khrennikov was absorbed in a conversation with Nikolayev, analyzing the situation. Valeriy seemed to have become a part of the control stick.

Nikolayev began to listen to the buoys.

"What's there, navigator?" said Andreyev, who was unable to restrain himself.

"Here, you listen." Nikolayev switched the receiver to the pilots.

The lieutenant pressed the earpieces of his headset more closely to his ear. Actually there was a cooing sound, but very weak. But all the same...

"There she is!"

"Of course!" Captain Khrennikov backed up his assistant.

But what's this? The needle, which had been animated, lazily drifted to one side.

"Contact has been lost," reported Nikolayev with irritation, and immediately began new calculations. The pilots contemplated the "enemy" with respect: "She maneuvers intelligently."

Suddenly the navigator asked: "Do you hear it?"

Yes, now the characteristic sound reached them again. Once more the headlong chase in the dark following the indicator. Now it oscillated sharply and quickly dropped.

Nikolayev's voice once more was heard in the intercom:

"Turn!"

Andreyev, moving his whole body like a motorcyclist on a speedway, tilted the control stick. The right wing dropped steeply, the stars whirled in a mad dance. The aircraft went into a steep turn.

Suddenly the light from the marker bomb appeared ahead and then immediately disappeared under the wing.

Bombing run... This phase of the flight lasts calculated seconds. But what tension is experienced by the crew!

"Drop!"

Within a few minutes the pilots received a signal that the attack was successful...

Something banged against the side of the fuselage. The sound abruptly interrupted the flow of the pilot's recollections. He listened. "Andreyev?" The voice of someone on the parking line inquired. They were calling him and Valeriy, opening the side window, looked out of the cockpit.

Below stood the flight line duty officer with his head thrown back.

"Comrade lieuten..." He stammered. A sly glance flashed from under his jauntily cocked seaman's cap. "Comrade senior lieutenant, Captain Khrennikov ordered

me to inform you: in 15 minutes there will be a formation of the personnel of the subunit."

...Andreyev was already on his way to headquarters when a vague surmise caused him to stop suddenly. "Why 'senior lieutenant'? Really?..."

Within a few minutes the surmise was confirmed. At the formation, an order concerning the promotion of a group of officers was announced. Andreyev's name was called out first.

Photograph - p.56, Caption: Senior Lieutenant V. Andreyev.

p.57, Caption: Returning from a mission.

MORSKOY SBORNIK, No. 11, 1971, pp. 84-85.

AIRCRAFT IN THE GREAT PATRIOTIC WAR

(Reconnaissance and Ground-attack Aircraft)

The events of the last war are lapsing farther and farther behind us, but time cannot deprive people of the recollection of what the Soviet soldier withstood and overcame.

/84

The Navy and its air forces fought shoulder-to-shoulder with the Army. In the struggle with the enemy, naval aviators displayed unparalleled heroism, persistence and the will to achieve a designated objective. In the cities of the Soviet Union, streets and alleys have been named in their honor. In the Fleets the experiences of the heroes are studied; all the best is gleaned from these experiences for combat training, and their glorious traditions are multiplied.

There are many glorious deeds to the credit of naval air reconnaissance personnel, whom the men have lovingly dubbed the aerial pathfinders. They went out in any weather, unescorted, far behind the front lines, penetrated enemy anti-aircraft and fighter screens, and obtained important data on his ships at sea and bases, and on fortified coastal sectors.

The names of celebrated aerial reconnaissance pilots L. Yel'kin, P. Seleznev, R. Suvorov, N. Turkov, P. Sheyn, and many others are recorded forever in the history of the Fleet.

The exploits of M. Verbitskiy, who skirmished with the Fascists from the very first days of the war, will linger in our hearts forever. In all kinds of weather the courageous pilot flew, carrying out command missions. Not without reason, he earned the reputation of being the best Fleet reconnaissance pilot, the first in the North to penetrate to a principal enemy base and acquire precise information on enemy forces; first to discover the Fascist battleship TIRPITZ.

In March 1943, the reconnaissance pilot discovered a large, heavily-guarded German convoy at sea.

In order to photograph the target, it was necessary to divert the air escort. Verbitskiy employed a military stratagem--suddenly he came out from behind the clouds and headed for the convoy. The enemy immediately opened fire, and his fighter planes rushed to intercept the Soviet aircraft. "Suppose I lure the Fascists into the clouds," thought the pilot. He quickly concealed himself under their cover. He maneuvered and appeared over the convoy from the other side. The Germans fired furiously, but it was too late--the reconnaissance plane's camera was clicking away, frame by frame.

Two fighter planes came to meet him; Verbitskiy, defending himself from the pressing Fascists, again headed the plane into the clouds. Seeking to gain an advantageous position, one of the "vultures" made a run on him. Taking advantage of an opportune moment, the pilot attacked him, firing a long burst from the machine guns.

Time and again Verbitskiy found himself in difficult situations, but superior training helped him to extricate himself from them with honor.

In April of that same year, the reconnaissance pilot was returning from a long flight. One engine of his plane was damaged; the second was overheated and barely operating. Beneath him was foreign soil. Despite this, the pilot reached the front line. When he crossed it, the second engine failed. Verbitskiy skillfully landed the heavy plane on the fuselage, then, in a few days, he and the crew reached their own unit across the tundra and hills.

This Northern Fleet Navyman completed 207 operational flights, personally shot down two Fascist planes, and shot down four more in group actions. On 22 January 1944, the title of Hero of the Soviet Union was conferred upon him.

* * * * *

On land and sea, independently, and in joining strikes with other types of aircraft, the ground-attack aircraft tirelessly pounded the invaders. Our people are proud of the intrepid fliers A. Mazurenko, N. Stepanyan, N. Chelnokov, S. Gulyayev, G. Kuznetsov, D. Osyka, G. Pavlov, and many others.

In November 1943, Lieutenant B. Volovodov, with gunner-radioman Junior Lieutenant V. Bykov, were supporting an amphibious landing in the Crimea. They had already attacked a column of enemy tanks twice when suddenly they saw a group of enemy bombers approaching our troops. There was no ammunition on the airplane, but this did not stop the courageous crew. At top speed, Volovodov overtook the lead plane and fell upon it with his own Il'yushin aircraft. Thus the pilot saved our infantrymen from the Fascist bombs and set an example of determination and selflessness in the struggle against air pirates.

Many glorious deeds are credited to the celebrated attack aircraft pilot of the Northern Fleet, A. Sinitsyn. But 17 June 1944 will remain forever in his memory. On that day, aircraft under the command of Aleksandr Nikolayevich participated in an attack on a large convoy. Three to five escort vessels covered each Fascist transport. But the attack aircraft penetrated their fire and inflicted precise blows on the target. On that same flight, Sinitsyn's crew shot down two German aircraft.

/85

"To go forward under any conditions to seek out the enemy and destroy him" -- thus the aviator taught his comrades-in-arms to fight.

Once Sinitsyn's ground-attack aircraft were returning from a mission. At the approach to our territory they observed a group of German fighter planes.

"Attack!" commanded Aleksandr Nikolayich.

After a short battle the enemy fled.

The following day, the regimental commander asked the pilot why he, a ground-attack aircraft pilot, had attacked fighter aircraft? Sinitsyn replied: "But how

could it be otherwise? It is impossible to turn the tail of the plane under. We are strong and fully able to conduct an active air battle."

The war raged a long time ago. The Soviet people have healed their wounds. Our Motherland improves year by year. But the feats of those who, with weapon in hand, defended her freedom will not be forgotten.

* * * * *

Who designed the planes -- the reconnaissance and ground-attack aircraft -- and what were their capabilities?

The MBR-2 aircraft is a flying boat, designed by G. Beriyeu. Thanks to excellent seaworthiness, visibility and great range, the MBR-2 was widely acclaimed by naval aviators. Maximum speed: 252 km/hr; range: 1000 km; armament: two 7.62-mm machine guns. The MBR was designed as a reconnaissance plane.

The IL-2 aircraft, designed by S. Il'yushin, was built in 1938. The plane had reliable armor plating and powerful armament, and possesses high combat survivability. The new feature in the configuration of the plane was that the armour which shields the engine, radiator, cockpit and fuel tank was, as it were, part of a strongly-constructed single unit. During the course of the war, the IL-2 underwent some modifications: it became a two-seater and its armament was increased. Maximum speed of the aircraft, after modernization, was 411 km/hr; flying range: 740 km. Armament: eight 132-mm rocket projectiles; one 12.7-mm and two 7.62-mm machine guns, and two 23-mm cannons.

Photographs - Caption p.85: MBR-2.

p.85: IL-2 (single-seater).

p. 85: IL-2.

MORSKOY SBORNIK, No. 11, 1971, pp. 86-87.

FIRST JAPANESE NUCLEAR-POWERED SHIP MUTSU

Successful experience in operating nuclear power plants on warships showed the prospects for their use in the merchant fleet as well. The U.S.A. and West Germany already have nuclear-powered merchant ships. Their construction is being planned in Italy and Great Britain.

86

In May of 1970, on the ways of the firm Ishikawaima-Harima Heavy Industries in Tokyo, construction of the hull of the MUTSU, the first Japanese nuclear-powered vessel was completed. It has a full-load displacement of 10,400 tons, a length (overall) of 130 meters, a beam of 19 meters, a draft of 6.9 meters and a gross tonnage of 8350 GRT. Its main purpose is the conducting of scientific research, development of the design of the nuclear reactor, and the training of crews for a future nuclear fleet. Several large firms and companies took part in the construction of the vessel. Thus the hull, shielding, and the turbines were fabricated by the firm Ishikawaima-Harima Heavy Industries and the reactor by Mitsubishi Atomic Power Industries.

The hull of the vessel is divided along the length into 10 watertight compartments (watertight integrity is ensured even in the case of complete flooding of 2 adjacent compartments). Along the sides in the area of the reactor collision protection has been placed, the purpose of which is to absorb the shock energy of a collision. A high double bottom protects the reactor in case the vessel runs aground.

They propose to use a water-cooled nuclear reactor with a heating capacity of 36 megawatts. Its core consists of 32 square assemblies, 110 x 110 mm. Of this number, 12 assemblies containing uranium with an enrichment of 3.2% are placed in the center and

20 assemblies with an enrichment of 4.4% in the outer section of the core. Each assembly is composed of 112 heat-generating elements and 9 rods of burning absorber.

The fuel elements consist of a stainless steel pipe with a diameter of 10.5 mm and a length of 1124 mm. Inside the tubes are 52 pellets of uranium dioxide. The rods of burning absorber are made of boron carbide. The core is charged with about 2.7 tons of uranium dioxide. The burning of the fuel amounts to 5200 megawatt-tons of uranium in a day. According to specialists, the operating period of the reactor at full power is 375 days. In actual practice, the core will be recharged once every 2 - 3 years.

The control rods have a cross-shaped section and are fabricated from an alloy of silver, indium and cadmium. A reactor safety system, consisting of boron carbide rods, is used for rapid stopping of the reactor. If the vessel should capsize, or in other emergency situations, the rods are introduced into the core, and, consequently, the chain reaction of fission is stopped by a special spring mechanism.

To dissipate heat from the core, water is used. It is pumped through two loops by the main circulating pumps of the primary circuit. The pressure in the circuit is 110 kg/cm², the control temperature is 278°C. The pressure is maintained by a steam system of volume compensation of the heat carrier. The system consists of electric heaters, an atomizer, and two safety valves. In the two steam generators, saturated steam is produced at a pressure of 40 kg/cm² with a 100% load, and 62.5 kg/cm² with a zero load.

The safety of the operating crew is achieved through localizing the consequences of possible accidents in the pressurized steel container of the reactor, the steam generator, the piping of the primary circuit, and the other radioactive equipment. The container is made of steel plates and has a thickness of 36 mm in its cylindri-

cal section and 60 mm in the bottom section. The weight of the container is 300 tons. The calculated internal pressure is 12 kg/cm².

The biological shielding consists of two belts. The first is a water-filled tank with five layers of steel plates. The piping of the heat carrier of the primary circuit and the upper part of the reactor casing are shielded with heavy concrete, and the lower part of the casing is covered with a lead plate. The weight of the primary shielding is 250 tons. The second belt is placed around the pressurized container and includes lead and polyethylene plates in the upper section and heavy concrete in the middle section. The overall weight of the second shielding belt is 2 tons.

/87

The solid and liquid wastes formed during operation of the nuclear reactor are stored in pressurized containers and special reservoirs and are unloaded while in port; the gaseous wastes, together with air, are passed through a filter and control system. To avoid diffusion of these wastes throughout the vessel, the pressure in the reactor compartment and adjacent spaces is maintained below atmospheric.

The main steam turbine operates on saturated steam. The power of the turbine is 10,000 hp at 200 rpm of the propellor shaft. The turbine can operate from both the main steam generators and the ordinary auxiliary water-tube boiler, which has an output of 18 tons per hour at a steam pressure of 30 kg/cm².

In order to increase the reliability of the power plant, important equipment is duplicated. For example, the power plant includes two main turbo-generators, two auxiliary diesel generators, one emergency diesel generator and storage battery. Switching of the consumers and activation of the sources of electrical energy are accomplished automatically according to programs worked out in advance. The emergency equipment, as well as the control and shielding system, operate reliably at an angle of roll up to 60°, an angle of pitch up to 20°.

at vertical accelerations up to 2 g, and at longitudinal accelerations up to 1 g.

The vessel is undergoing trials. The first voyage is to take place at the end of 1972. The overall cost of construction is 65 million pounds sterling, of which 31 million went for manufacture of the reactor.

MORSKOY SBORNIK, No. 8, 1971, pp.25-28.

POLITICAL WORKER AND AVIATOR

Captain Second Rank P. F. Ablamonov

After a meeting at which the results of a competition were added up, the Squadron Political Officer, Captain R. F. Starkov, asked group leader Captain Alekseyev to stay behind. When everyone else had left, they sat at the table and talked. The group leader, a serious and even-tempered person, described in detail the condition of the equipment and the performance of the personnel. As he listened to the officer, the Political Officer remembered a time when the group was lagging and it was necessary to help Alekseyev pull it back up to the advanced level.

/25

That was several months ago. Political worker Starkov, who was still new then, having just been appointed to the position, set himself the goal of finding out why the groups were lagging and helping them gain the ranks of the advanced. He visited these sub-units several times, carefully observed the specialists at work, talked with them, and came to the conclusion that the majority of the equipment malfunctions in Captain Alekseyev's group occurred because several seamen were neglecting their duties.

Starkov then said: "The training of personnel and maintenance of equipment must be accompanied by a closely coordinated effort to teach the specialists a high sense of responsibility for assigned duties. The safety of flights depends first of all on the conscientiousness and accuracy of the personnel."

/26

The Political Officer passed his advice, observations and suggestions on to Alekseyev, but it was obvious that even a very detailed discussion was not enough to rectify the situation. Starkov was convinced, moreover, that there would also be similar deficiencies in other groups. It was necessary to draw the attention

of the commanders and officers-in-charge to their work with the personnel. But how could this best be done? Then the solution came to him -- the report of Communist Alekseyev would be heard at an expanded meeting of the Bureau, to which the group leaders would be invited.

There was no precedent for such a thing in the procedures of the Party organization. But the new Political Officer recommended it.

Communist Alekseyev, a diligent fellow, but a little touchy, was perplexed over the meaning of this report, and in any case he showed up at the Bureau prepared to defend himself. When the meeting began, however, he was greatly surprised to hear the friendly and businesslike tone of the discussion of his work.

By tradition, Alekseyev first talked about the condition of the equipment and then discussed his work with the personnel, as if it were a matter of secondary importance. There was a lively discussion of his report. Almost all of the members of the Bureau contributed. As he listened to them, Starkov, in his heart of hearts, was glad to see how correctly they noted the distinctive shortcomings of the group leader's work and how soundly they discussed his role in the training and education of specialists.

After the meeting, Alekseyev said to the Political Officer with a smile:

"When I came to the Bureau, I thought they would rake me over the coals. But the conversation was calm and frank, above all it was not just about me but about all of my group, about their working style and attitudes toward their duties."

Alekseyev set to work with zeal. He coordinated the training closely with indoctrination. The noble goals inspired the men in their labors. This all paid off a hundredfold. When he visited the group several times afterward, the Political Officer observed gratifying

changes in its life. In the 24th Party Congress competitions, the group won first place in the unit.

...Now, as he talked with the group commander, Starkov advised him how best to interpret the resolutions of the Party Congress, not to overlook deficiencies and to participate more boldly in all things which affect a Communist.

Having discussed all of the urgent matters, Captain Alekseyev left the office and in a few minutes was already walking along the concrete strip toward the aircraft. The Political Officer went to the window, and as he looked at the airplanes lined up in the distance he pondered the substance of the discussion. He thought about how to involve all Party members and candidates in active Party work, so that every Communist would become a true Party warrior.

The Political Officer knew from experience that this was not easy to do. It was necessary to work extensively with the newly-elected secretary of the squadron Party organization, who was at a loss to find a mission for every Party member as he began his job. Starkov showed him how to do this by citing examples, pointing out areas where the efforts of the Communists should be directed. These included helping those who were lagging behind, checking the fulfillment of obligations, explaining the resolutions of the Congress and the shaping of visual propaganda. But perhaps you can list them all yourself.

Take, for example, participation in the squadron's amateur art activities, which have become famous throughout practically the entire Fleet. The participants include dozens of Communists -- pilots, navigators and technicians. Along with the aviators, their wives are also active in amateur art groups. After concerts, Starkov usually heard: "It's easy for you, because your people are active." But who knows as well as he how much it was necessary to work with each one in order to create an amateur group, how much time was spent discussing the program and repertoire, and selecting the

performers? And if they managed to solve all of the problems this was due in no small measure to the efforts of the Political Officer, who participated in the chorus and carried the others along by his own example. The art group is in first place in the unit, which in turn is first in naval aviation. /27

Now all of Captain Starkov's activities were related to the resolutions of the 24th Party Congress. No matter what he did, everything was seen through the prism of these important historical documents. New plans and concepts emerged. The Political Officer spent whole days at the airfield, at the hobby shop, in the aircraft, and always among the aviators. He had a talent for organization and knew how to inspire others with his energy. Reliance on the Party militants and the men was his distinctive trait. He was convinced that a political worker could accomplish a great deal with the support of the Communists and Komsomol members.

Immediately after the Congress, the squadron held a thematic evening of great interest on the theme "Lead us, Party, to Communism." Dozens of Party activists took part in its preparation and conduct. And it was no accident that the evening was remembered by all. Industrial and agricultural leaders from nearby villages and towns came to the squadron. Distinguished people of the region appeared before the aviators, citing the examples of their industrial collectives in discussing how the plans of the Party are implemented.

Starkov had a detailed plan for propagandizing the resolutions of the 24th Congress of the Communist Party of the Soviet Union. The plan included lectures and reports, organized discussions, evening meetings, excursions, appearances by Congress delegates and other activities. In the column entitled "Accomplished," there were already dates indicating when various events had been held. For example, the excursion to a neighboring state farm which is famous throughout the entire region left a strong impression on the military men. After the tour of the farm there was a cordial meeting between the leaders of the state farm and those who have been

declared outstanding in combat and political training in the squadron.

A particular object of concern for the political worker was to continuously monitor the way in which the Communists studied the materials of the Congress. In casual conversations, he strove to explain how deeply the ideas of the Congress were imprinted in the hearts of Communists and how they were embodied in the affairs of the subunit.

Once, while visiting one of the groups, the political worker noticed deficiencies in the organization of duties. /28 As it turned out, certain aviators had committed misdemeanors in the eyes of the Communists. Starkov then spoke sternly - not only to the guilty ones, but also to those Party members who were not carrying out a resolute struggle against the violators of discipline.

Representatives who visit this squadron note Captain Starkov's love of political work. In the political section they are usually told that he has been active and public-spirited since his youth. After graduation from college, he was a member of the Committee and Komosol Bureau and secretary of the Komosol organization of the subunit.

Political worker Starkov is a Pilot 1st Class. According to testimonials from the officers of the squadron, he is careful, collected and resourceful in the air and reacts quickly to the situation. During the "Okean" maneuvers, he distinguished himself in the execution of his tasks. The inherent characteristics of this Political Officer are his sincerity, his closeness to the men, his concern for them and at the same time the demands he places on them. It is not without reason that he is fondly called the soul of the squadron.

On combining the duties of squadron Political Officer and pilot, Starkov has this to say: "One does not hamper the other, and indeed they are complementary. If I were not a political worker, I wouldn't be able to organize the educational activities of my own crew as

well. Political work forces me to look at many things in different ways. At the same time, if I were not the commander of a flight crew but only a political worker, then it would most likely be more difficult to work with the flying personnel. Therefore, I believe that both of the duties I perform sort of intertwine and reinforce one another."

After the 24th Congress of the Communist Party of the Soviet Union, Starkov took on new Socialist obligations -- to have an average mark in special subjects of not lower than 4-5, to achieve the rank of Pilot 1st Class aviator, and to finish the University of Marxism-Leninism. Half of these obligations have already been fulfilled. His crew has attained an outstanding rating and Captain Starkov has become a class specialist. He has received high marks in special subjects.

Photograph - p. 27, Caption: Crew of the aircraft commanded by Squadron Political Officer Captain R. F. Starkov (in the center). On the left: the navigator, Senior Lieutenant A. P. Kormil'tsev. On the right: the operator, Captain Ye. T. Sklyarov.

MORSKOY SBORNIK, No. 8, 1971, pp. 76-77.

VICTORY AT KALIAKRA

By Captain 1st Rank P. V. Maksimov (Reserves)

One hundred and eighty years ago, during the Russo-Turkish War of 1787-1791, the Black Sea Fleet won a remarkable victory in a battle at Cape Kaliakra. /76

In 1787-1788, Russian forces had already achieved significant combat successes in the war for the emergence and consolidation of Russia on the coast of the Black Sea. However, with the aim of trying to get more advantageous terms for herself, Ottoman Turkey dragged out the peace negotiations. The rout of the enemy fleet in the Black Sea expedited conclusion of a peace treaty.

On 29 July 1971* a squadron from the Black Sea Fleet under the command of Rear Admiral F. F. Ushakov,

*Dates are given in the old style.

composed of 16 ships of the line, 2 frigates, 2 bombardment ships, a signal ship, a fire vessel and 17 cruisers (990 Guns) left Sevastopol and made their way in columns of three toward the Rumelian coast.

At 1200 hours on 31 July, a forest of masts was spotted from the flagship ROZHDESTVO KHRISTOVO at Cape Kaliakra. The Turkish Fleet, which stood near the shore in the large roadstead, was clearly viewed: 18 ships of the line, 17 frigates and 43 light ships (more than 1800 guns). The ships stood in two lines, under the protection of batteries from a fortress ashore. The flagship of Captain Pasha Hussein stood out to sea, with the ship of the junior flag officer, Said Ali, closer to shore. The Turks were observing the Ramadan holiday,

with no fear of a Russian attack, since their Fleet occupied an advantageous windward position (the wind blew from shore).

Having assessed the situation, Ushakov decided to cut the Turkish Fleet off from the shore and force them to accept battle in what was for them a disadvantageous leeward position. From the flagship the signal was sent: proceed in the same formation, under full sail, steering a course between the shore and the Turkish Fleet.

The Russian squadron, not reforming from a cruising order to line of battle (diagram, position a), conducted a surprise attack on the enemy. Having rounded Cape Kaliakra in a formation of three columns and with the objective of occupying the windward position for the battle, Ushakov sailed between the shore and the Turkish ships, paying no attention to fire from the shore batteries.

The appearance of the Russian Fleet and its swift attack was so sudden that the Turks were forced to stow the anchors and leave. At 1445 the Russian Fleet, having cut off the Turkish ships from the shore and shelling them constantly with accurate gunfire, continued to pursue in a cruising formation of three columns. The Turkish admiral made desperate attempts to form his ships into a line of battle. Conforming to the situation which had developed, Ushakov at 1530 likewise reformed his ships into a line of battle parallel to the Turkish ships (position b).

/77

Conducting a bitter battle, Ushakov simultaneously utilized two groups of the ships in reserve. One, comprising the bombardment ships and frigates, was for the main attack, while the other, composed of the light ships, was for pursuit of isolated enemy ships and the destruction of ships' boats proceeding from the Turkish vessels toward the shore with crewmembers.

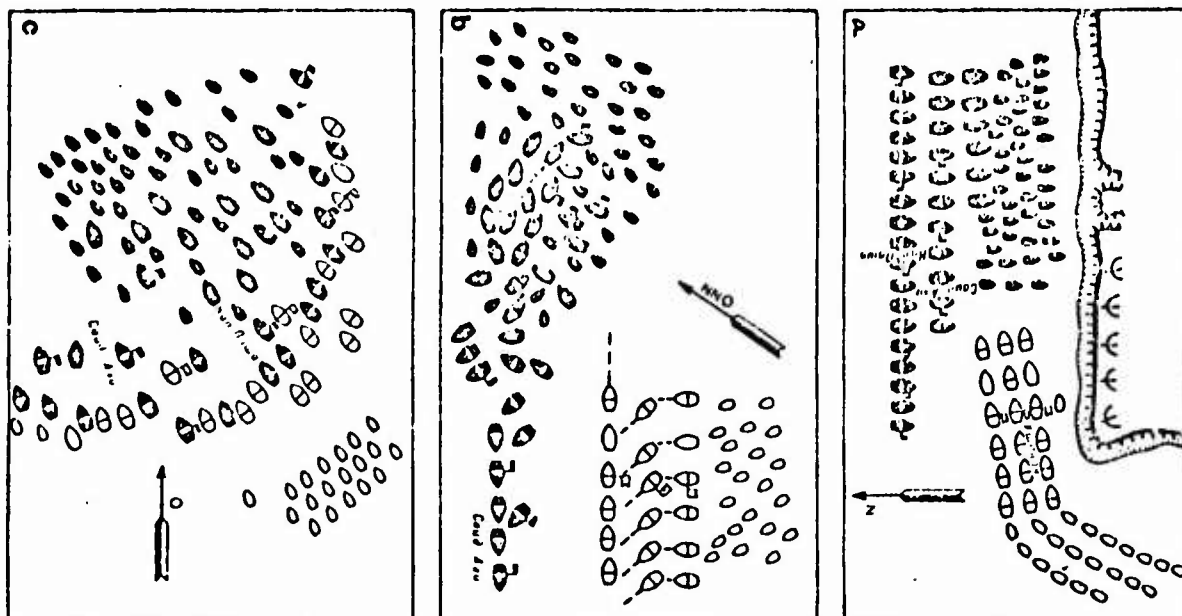
The stubborn battle, in which enemy ships received severe damage, continued for about four hours. The Turkish Fleet began to depart in disorder for the Bosphorus (position c), having lost several ships and more than 1500 men. Aboard the Russian ships there were 17 killed and 28 wounded.

In his report, Ushakov wrote that the Russian Fleet "executed a savage fire with such animation that, damaging many in the masts, topmasts, yards and sails, not counting the large number of holes in the hulls, it forced many ships to seek shelter, one after another, and with nightfall the enemy Fleet was already thoroughly beaten and ran . . . tightly clustered together in the wind, swinging their sterns around toward us, and having closed in, our Fleet gave chase, and with continuous fire hit it with bow cannons and, where possible, with broadside salvos."

The victory at Kaliakra was one of the glorious pages in the heroic annals of the Russian Navy.

Illustrations: p. 76, caption: Admiral F. F. Ushakov.

p. 77, caption: Diagram of the battle
at Cape Kaliakra in 1791.



In all three diagrams (from top to bottom
a,b,c)
Russian Fleet is white, Turkish Fleet is black.

- a. wind North; flags from left to right are
Capt. Pasha, Said Ali and Ushakov.
- b. wind NNE; flags from left to right are
Capt. Pasha and Said Ali.
- c. wind East; flags from top to bottom are
Capt. Pasha and Said Ali.