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CENTRAL INTELLIGENCE AGENCY

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C-O-N-F-I-D-E-N-T-I-A-L

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THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

A 16-page [redacted] study [redacted] of the KOMAR- and OSA-class guided missile boats [redacted]. The study includes data on electronics and missile characteristics [redacted].

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Distribution of Attachment:

[redacted]

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KOMAR - ClassHull

The hull is the same as is found in the P-6 class speedboats, without ~~external~~ ^{external} changes.

According to recent information newly mass-produced hulls are being used in the construction of this class. Therefore, this is not only a rearmament of old boats. The series production of the P-6 class is continuing. The measurements are as the P-6 Class; ^{length} 25.5 meters, with ^d 6.1 meters.

Bridge

The form and measurements of the bridge are for the most part the same as in the case of the P-6 Class. However, the steering stand is enclosed on all sides and has one window on the starboard side and one on the port side, as well as 3 bullseyes in the fore end which are to be equipped with rotating clear view ~~strength~~ ^{SCREENS}. The bridge house which is directly under this has one square window on the starboard and port sides as well as in the fore end.

MAST

The mast which is approximately 6.5 meters above the upper deck is a four-legged trellis ~~mast~~ of conspicuously stable construction. It is located directly behind the bridge. Its ^{two} forward supporting legs, which run upward in a slant, stand in the rear part of the bridge house which is open. Half-way up the mast, a platform has

been built into it which serves as an observation stand. During voy- 50X1-HUM
 ages at least ^{four} men can be posted here as look-outs, similar to the
 stand on U-boats. The stand is directly accessible from the bridge.

ELECTRONICS

The new square-tie radar is mounted on the upper mast platform. The height of the screen, which is easily lifted upwards, is approximately 0.65 meters and the width is approximately 1.6 meters. Its form is unusual and consists of 2 squares of different sizes which are made out of wire screening and laid over one another. Heavy bands bind the screen to the relatively large motor housing on the back side of which there is a stabilization plate. The Horn ^{feed} ~~antenna~~ sits above the upper screen edge and its leading wire is attached to the motor housing. The installation height of the instrument above the water line is approximately 9 meters.

On ^{two} side outriggers of the radar platform there are the following:

1 VHF antenna (starboard) and 1 High Pole -IFF answering instruments (port) and an IFF- Dead Duck operators telephone ^{set} is located on an outrigger which lies somewhat lower and forward.

Insofar as it has been ascertainable thus far, there is only one ^{whip} ~~whip~~ antenna which is located on the deck of the steering house. Its length is approximately 7 meters.

WEAPONS

a) Missile-launcher

The KOMAR boats are being outfitted with two different missile-

launcher models which indicates the use of two types of missiles. They differ from one another externally only in the profile of the launcher housing and hereafter will be designated as Model I and Model II. The other characteristics of the models are the same. 50X1-HUM

The missile-launcher is mounted on the after third of the boat's hull on each side of the upper deck. It consists of the following parts:

1. A launching track with an almost U-shaped cross-section of approximately 0.2 meters in height and 0.7 meters in width. The length is 7.4 meters. The track is mounted firmly in an angle of 13° on 2 multiply - based double poles on the upper deck in a longitudinal direction in such a way that the after-end is approximately 1 meter from the upper deck.

2. A "loading tray" which consists of a metal "tube", opened at the top and at the end, with a U-shaped cross-section. It is also mounted on the upper deck by means of 5 double poles in a 13° elevation so that it forms the continuation (extension) of the launching track to the rear, whereby the after-end lies on the upper deck. Its length is approximately 2.7 meters, the width approximately ~~0.7~~ ^{0.7} meters.

The "loading tray" presumably serves to dissipate the blast during the launching of a missile.

3. The launcher cover, a bow shaped, ~~lightweight~~ ^{EXPERIMENTAL} lightweight metal construction, is attached over the launching track in such a way that the entire length of the track is covered by it.

The track lies inside on the under side of the covering. Its cross-section in the upper part of Model I is semi-oval and has a semi-rhomboid form in its under part. The profile of Model II is different in that it has a small square elevation in the cross-section. The after-termination of the covering runs vertically while the forward termination slants to the longitudinal axis. There is a symmetrical opening in the shape of a rhombus in the forward termination plate. Insofar as it has been ascertainable so far, there are no permanent ~~covers~~^{lids}. (During the short observations, the containers were covered fore and aft with coverings). On the under outer side, there are two small ~~covers~~^{lids} which probably open downward and which are used as service ~~covers~~^{lids}. Access to them is made possible by an extension of the upper deck (gangway) which is supported in 10 places to the ship's side. The containers presumably serve to protect the missiles cleared for launching against sea-water and the influence of weather. Measurements and characteristics can be seen from the diagram.

b) 2.5 cm gun

The gun is located on the forecastle. The model and installation are the same as on the P-6 class speed-boats. Other weapons cannot be seen.

Missiles

Concerning the missiles to be used, at the present time there are only conjectures which point to rockets used against ship and shore targets. The maximum range is estimated at 30 sea miles

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In the final phase of the trajectory, target acquisition is accomplished by means of a homing device which works either on a passive infra-red or an active radar basis. 50X1-HUM

The different information which is given under paragraph 3 gives some basic values which can contribute to an explanation of the question:

1. The maximum length of the covering and the launching track amounts to 7.4 meters. Therefore, the same length can be used for the missile.
2. The cross-section of the covering and shape of the forward rhombus-shaped opening make the use of missiles equipped with lifting surfaces and tail assemblies (cruise-type missiles) very probable. Radio control is probably used as a guidance system. It can be assumed that in the final phase of the trajectory, a homing device is used.

The thought that the missiles to be used by the Navy could be those already tested by the Army or Air Force cannot be proven by the facts available.

3. The effective range of the missiles is commensurate with the radar range of the boat. At an installation height of 8.6 meters above the water line, the theoretical range of the radar instrument under normal conditions, and thus also that of the missile, is approximately 14 sea miles. This distance is valid for the case when the KOMAR boats are used singly or in their own groups. An expansion of the missile range by means of data transfer from units of greater

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radar horizons (destroyers or airplanes - helicopters) is considered possible. 50X1-HUM

4. The form and cross-section of a launching track make it seem possible that a catapult launch is used to attain the rather high V_0 (initial velocity) necessary for an aerodynamic missile.

OSA- Class (Diagram Attachment 2)

The missile speed-boats of the OSA class are of new construction and from the very beginning were planned as missile carriers.

The relatively low sea endurance and possibility for use of the KOMAR class, caused by the type of construction and the size, can be viewed as the major reasons for the construction of larger boats. In this way, an improvement of the sea characteristics, an expansion of the action radius, and the doubling of the missile armament have been attained and the serviceability and ^{WEAPON} effectiveness have been considerably raised. certainly

Preliminary Remarks

Thus far, two types of the OSA Class are known which differ from one another due to the different length and design of the launcher as well as the even smaller deviations caused by this. The other characteristics of both types, such as the length of the hull, construction, etc., are the same. Hereafter the two designs will be designated as Type I and II. The deviations will be pointed out in the appropriate places.

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Hull

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As far as can be seen, the hull is made of metal. Its appearance indicates its origin; ~~the~~ the typical form of the Anglo-American speed boat of the last World War. However, the differences from these as from all "normal" speed boats, can be seen in the form of the boat viewed from above. Caused by the need of space for the installation of the missile launchers, the boat's hull does not taper as usual towards the ~~stern~~ ^{stern} but rather keeps the greatest width, which is at the bridge, all the way to the stern so that a "flat-iron shape" is created. The over-all length is approximately 39.6 meters, the width 8.6 meters.

Deck Constructiona) Bridge

The bridge consists of a steering house closed on all sides which has two square windows on each side and 3 in the front. Rotating clear-view screens cannot be seen. Particularly noticeable is the bridge top-side which drops off rapidly towards the stern and whose angle of inclination is exactly equal to that of the forward missile-launcher pairs. The unusual form is necessary because a horizontally running deck would make the launching of the forward missiles impossible due to lack of space. On the steering house, there is a stand which is open in the rear and which has an air nozzle and a glass covering for the bridge personnel.

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b) Deckhouse

Directly by the bridge there is a long deckhouse which can be 50X1-HUM used as a type of protection room for the upper deck and service personnel. There are no bulls eyes. Access into it is accomplished through an after and two side doors. Direct connection (internal) to the bridge house can be assumed. On the deckhouse there are two air shafts, which are open to the rear, for the motors and different ventilators.

c) Mast

The mast is formed as a tubular mast. It tapers slightly upwards and its cross section is long and oval. The height is 5.8 meters measured from the deckhouse and 10.8 meters above the water line. The greatest width (measured on the latitudinal axis of the ship) ^{is} 0.4 meters and measured on the longitudinal axis of the ship it is 0.9 meters (type I) and 0.8 meters (type II).

Electronics

The electronic equipment is basically the same for both types. It consists of the following:

- a) One square tie radar instrument on the mast head
- b) One high pole IFF answering instrument with VHF antenna on the port yardarm of the mast
- c) One VHF antenna on the starboard yardarm of the mast
- d) One square head IFF operators telephone set on the yardarm under the two instruments mentioned under c). On type I this is located on the port side forward and to the side, on type II

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in a right forward position. On both types there is another 50X1-HUM yardarm which can be moved 180°, however, thus far a type of socket can be recognized on it only on type I.

e) One VHF antenna, only on type I, on a yardarm in a forward direction below d). An unknown instrument is mounted under the antenna which is held by an additional support. It has the shape of a large ~~lamp~~^{SEARCHLIGHT} (the corresponding yardarm on type II thus far only has a type of socket without the instrument.).

f) One whip antenna on the starboard side of the bridge house overhead.

g) One whip antenna on the deckhouse, approximately in the middle of the port forward missile launcher.

h) Two unidentified instruments on supports of different heights on the forward motor ventilator shaft.

Missile Guiding Instrument'

Thus far, only on one boat of the type I has an instrument been seen which is similar to a spotlight and which due to its shape and installation is being used as a radar guiding instrument for missile control. The instrument stands in a socket attached in a platform which is two meters in height on the after end of the deckhouse between the two after missile launchers. The diameter of the spot light type mirror, whose forward and rear sides appear to be clouded, is 1.1 meters. The side covering is 0.9 meters wide. The mirror is apparently rigidly mounted to the motor housing at an angle of approximately 20° and is adjustable only from the side.

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A Cardanic suspension as a prerequisite for the height-adjustability cannot be determined. (The instrument is sketched in on the diagram of type I.)

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Weapons

a) Missile launcher

Both types of the OSA class are equipped with four missile launchers which are installed in pairs one behind the other on either side of the deckhouse. They consist of a launching track mounted rigidly in a specific angle of elevation and are of the same type as those on the Komar class. However, they differ from these in that the tracks are protected on all sides by a metal covering up to the upper deck. The metal covering is closed in the rear and is equipped with movable opening lids in the front. On each of the after terminating walls there is a door which opens outward.

Type I

1) Forward launching pair (height figures refer to height above the upper deck)

Length between the perpendiculars: 9.4 meters

Length, longest: 9.6 meters

Height, forward: 3.2 meters

Height, after: 2.0 meters

Angle of elevation: 12°

Width (covering): 2.8 meters

Width of the opening: 2.6 meters

The opening lids are opened downward so far until they lie in an approximately horizontal position on the supports which are put there for this purpose on either side of the bridge. The form of the lids is completely different from that of the other launchers. They consist of two parts which lie over one another, a long upper part which almost runs to a point at the top, and one or two wing type diagonal parts which are installed under it (see partial sketch type I, front view). The opening which is visible when the lids are open shows the profile of an aero-dynamic missile.

The cross section of the launching cover, which also runs upward into a point like the lid, indicates a missile with rather high lifting surfaces.

The opening of the terminal lid downward is hindered, as can be seen in the side and front view diagrams of type I, by the bridgehouse which is partially built in to the forward launcher covering. Although the actual mechanical procedure has not yet been observed, it appears that a complete opening would only be possible when the "wing" part of the lid lying next to the bridgehouse is either pushed outward or is moved upward.

In the middle of the lid (as is the case on all of the other launchers) there is a vertical bulge which runs from the top to the bottom, the cross section of which is almost triangular in shape.

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BELT # 2

The purpose of this has not yet been determined. It is possible that the missiles *cleared* for launching protrude somewhat from the plate covering so that the lid could not be closed without this bulge. 50X1-HUM

Another narrow bulge, which has the form of a groove, runs perpendicular to the longitudinal axis in the first third and completely around the entire covering. It can only be seen on this launcher model and has not yet been explained.

An approximately 60 centimeter high and 1.6 meter long bent dissipation plate is rigidly mounted to the after end of the covering for the purpose of dissipating the missile blast. The plate is installed in such a way that when the door is open (see above) it takes the blast and directs it outward.

2) After launching pair

Length between the perpendiculars: 9.6 meters

Length, longest: 9.8 meters

Height, forward: 3.6 meters

Height, after: 1.9 meters

Angle of elevation: 13°

Width: (covering): 2.8 meters

Width of the opening: 2.6 meters

The cross section of the launcher covering is rounded off at the top. The opening lid is moved upwards. Just as is the case

with the opening which it closes, the lid has the shape of a rhombus.

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The under part of the launcher covering is supported by the side walls of the deckhouse while its protruding part stands free. In order to prevent vibrations and distortions caused by the influence of weather and the launching of the missiles, this part of the covering is secured by six short supports which are attached to the deckhouse.

In order to dissipate the blast during launching, (a particular characteristic of type I) instead of a dissipation plate there is a "gutter" in the hull of the boat behind each launcher which forms an elongation of the starting track towards the stern. It is covered when not in use. The construction is very much like the "loading tray" of the Komar class.

Type II

Forward and after launching pairs.

The four launcher coverings of this type have the same dimensions with the exception of the cross section of the forward pair. The angle of elevation differs in the two pairs and thus the altitude values also differ.

Length between the perpendiculars: 7.8 meters

Length, longest: 8.0 meters

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BELT # 2

Height, forward, forward pair: 3.0 meters, after pair: 3.6 meters

Height, rear, forward pair: 2.0 meters, after pair: 2.4 meters 50X1-HUM

Angle of elevation, forward pair: 12° , after pair: 13°

Width (covering): 2.8 meters

Width of the opening: 2.6 meters

The lids of all the launchers are opened upwards. On the rear wall of each covering a dissipation plate is mounted on the upper deck for the dissipation of the blast as with the case with type I, however, here they are approximately one meter high and approximately two meters long.

The covering of the forward launcher pairs has a cross section which runs upward into a point similar to type I which leads to the same conclusions with respect to the missile form.

b) Conventional Armament

Two double gun mounts of the new type are located on both types on the forecastle and on the quarter deck. The caliber of the twin barrels is estimated to be 2.5 centimeters. A special characteristic is the probably armored cap (hemispherical turret) which covers the entire position and, compared to the old model, guarantees better protection for those servicing it.

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The field of fire, which in the case of type I was almost 360 degrees, 50X1-HUM is considerably limited in the case of type II due to the low height of the muzzle and because of the launcher coverings.

Other weapons were not ascertainable.

Missiles

Generally speaking, what was said in the comparable paragraph concerning the Komar class is also true of the OSA class.

It can be assumed with a certain degree of assurity that the length of the launching track on the Komar and OSA classes, type II, are the same. (The somewhat greater length of the launcher covering on the OSA type II, is due to the vertically constructed rear terminal wall!). The use of the same type of missile on both units is therefore very probable.

The greater length of the coverings on the ^{OSA}~~OSA~~ type I, however, indicates a longer launching track and thus the possible use of a longer missile.

The radar range on the OSA class is approximately 16 ^{sea} miles when the instrument is mounted approximately 11.5 meters above the designed water line, whereby the range of the missile is correspondingly increased as compared to the Komar class.

Technical characteristics

Komar class

There are no indications that changes have been made in the hull of the boat and in the machine installations as compared to the P 6 boats and thus the technical characteristics have probably remained

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the same.

OSA class

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According to the information learned concerning length and width, it can be estimated that the greatest draft is 2.2-2.5 meters and the greatest displacement is 200-240 tons.

Assuming a speed of 40 knots, there must be a power capacity of from 9 to 12,000 horse power which is probably produced by diesel motors. In any case, definite signs of gas turbine power units were not ascertained. The motor exhaust could possibly be under the water line. The visible outboard openings could also serve other purposes.

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