

Modern unmanned reconnaissance and information system for marine forces



Lutch Design Bureau JSC was founded in 1955 in accordance with the Decree of the Council of Ministers of the USSR and an Order of the Minister of Aviation Industry with the aim of developing and supplying electronics used in airborne and ground radio-technical systems, special-purpose radio metering instruments, air-borne and ground equipment of command radio links. Now the design bureau is mainly engaged in development of unmanned aviation systems for the Russian Defense Ministry.

Now the main activity of Lutch Design Bureau JSC is development of:

- unmanned systems with ground control and maintenance facilities for the Defense Ministry, Federal Border Control Service, Ministry of Internal Affairs, Ministry of Emergency Situations, including: airborne target systems, land surveillance systems, reconnaissance systems, ecological monitoring systems;
- unmanned aircrafts with power-plants, power-supply systems and take-off/landing systems;
- control and data exchange radio systems;
- air-borne special-purpose electronics, including aircraft instrumentation, airborne calculators — data routers, electronic data registers;
- software for aircraft control and aircraft systems control;
- reconnaissance and information systems for tactical troops of the Russian Armed Forces;



Обобщенная схема применения РИС при высадке морского десанта / Generalized scheme of RIS usage at marine landing

— Doppler velocimeter and drift meters, electronic controls and other special electronics.

For nearly half a century the Design Bureau has developed several generations of command radio links for pointing fighters as well as uniform Doppler velocimeters and drift meters based on MIG-27, SU-25, TU-142, etc.

Aircraft of long-range, front-line, reconnaissance, military transport aviation and some aircraft of the civil fleet are equipped with the 2nd and 3rd generation Doppler velocimeters and drift meters developed by Lutch Design Bureau.

Since 1965 Lutch Design Bureau has been developing unmanned aerial

systems and now produces commercially a «Tipchak» aerial artillery reconnaissance system. The system employs a small-dimension aircraft equipped with an optic-electronic system with infrared and visible range cameras, mobile ground equipment for preparation and launching an aircraft and automated processing of the data received from an aircraft.

Using the engineering solutions and the main technologies of unmanned systems developed and tested while creating «Tipchak» system, Lutch Design Bureau develops a reconnaissance and information system (RIS) that helps to boost the efficiency of the reconnaissance and information support of tactical troops.

Tactical features of the reconnaissance and information system

The key element of the RIS is a fully-connected broadband mobile radio network that ensures:

- access to the required information for any network subscriber at the maximum range possible covered by the network;
- multistage retransmission of data due to the provision of airborne and ground subscribers with combined (receiving and transmitting) equipment;
- delivery of broadband and command information in real time to secure rapid decision-making.

Another important element of the RIS is small-size unmanned aircraft that is used for reconnaissance, battlefield surveillance and data retransmission.

Joint usage of the fully-connected air/ground radio network and reconnaissance-information unmanned aircraft ensures a new level of reconnaissance and information support of tactical formations during operations.

When a landing vessel approaches the coast, an unmanned aircraft is launched from the board to effect reconnaissance of the littoral zone and to locate weaponry, command posts and other enemy facilities and to precise the landing point. The command post located aboard the landing vessel receives, processes and analyzes the data obtained by the aircraft.

At the stage of the landing the self-establishment of the fully-connected air/ground radio network is effected. The network ensures constant broadband radio communication of all units regardless of their position on the terrain,

including those that are hidden in the ground accidents or behind buildings. It is done due to the adaptive routing of the dataflow which enables data transmission from the source to the receiver bypassing route through a number of other units or aircraft. A fully-connected broadband network ensures transmission of commands, requests, data, speech, target data, telemetry information about the state of firing vehicles, etc.

From the aircraft and other reconnaissance facilities the data is transmitted to the control post of the surveillance vehicle. The following actions are performed at the control post: analysis of the data in order to locate the targets, determination of the location and types of targets; assigning the targets to combat vehicles and other firing facilities for destruction and transmission of the data required for firing to firing positions.

Thus, RIS helps receive complete data actualized in real time about the enemy and the condition of the own forces using which a commander can take appropriate decisions concerning the combat situation.

The developments of Lutch Design Bureau are widely used for equipment of the troops with advanced technology armament systems.

«VEGA» RADIO ENGINEERING CORPORATION OPEN JOINT-STOCK COMPANY LUTCH DESIGN BUREAU

25, boulevard Pobedy, Rybinsk, Yaroslavl region, 152920, Russia
Phone: (4855) 28-58-22, 28-58-20
Telefax: (4855) 28-58-35
E-mail: kb@kb-lutch.ru
Http://www.kb-lutch.ru



ФГУП «Ростовский завод «Прибор» создан в 1965 г. как предприятие по выпуску радиоэлектронных средств и комплексов для оснащения надводных кораблей (НК) различного водоизмещения. Работая по тематике ВМФ, завод оснастил радио-техническими комплексами значительное количество НК различных классов.

С 1992 г. завод освоил выпуск и ремонт антенно-мачтовых устройств. В настоящее время серийно выпускается более 10 модификаций телескопических антенно-мачтовых устройств (с вариантами монтажа антенн в вертикальном или горизонтальном положении) для работы в линиях связи.

Завод имеет соответствующие лицензии на выполнение работ по разработке, производству и ремонту корабельных радиоэлектронных комплексов и антенно-мачтовых устройств.

На заводе действует система менеджмента качества, соответствующая СРПП ВТ, ГОСТ РВ 15.002, ГОСТ ИСО 9001-2001, подтвержденная сертификатом соответствия.

Укомплектованность высококвалифицированными специалистами позволила заводу в сжатые сроки разработать и освоить в производстве комплексы радиоэлектронного противодействия ТК-25Э (7.2) и МП-405Э (варианты исполнения МП-405-1Э, МП-405-2Э), предлагаемые для установки на все типы НК (эсминцы, фрегаты, корветы, катера и др.).

Комплексы разработаны с широким применением микроволновых технологий, внедрением микропроцессорной техники и цифровых методов обработки информации. Примененные технические решения позволили существенно

повысить достоверность и скорость оценки радиоэлектронной обстановки, ввести автоматизированный режим управления комплексом и повысить быстродействие комплексов РЭП.

Комплексы обеспечивают:

- автоматизированную разведку и идентификацию излучений РЛС различного типа в условиях сложной электромагнитной обстановки;
- автоматизированное создание активных помех и управление постановкой пассивных помех;
- автоматизированное решение задач РЭБ, скоординированное с решением задач огневых средств ПВО и ПРО НК;
- синхронизацию работы радиоэлектронных средств корабля с целью обеспечения ЭМС.

Комплексы имеют открытую структуру, что позволяет обеспечить дальнейшую модификацию применительно к составу радиоэлектронного вооружения и размещения на НК.

При сохранении унификации составных частей приборов комплексы ТК-25Э (7.2) и МП-405-1Э отличаются вариантами исполнения отдельных приборов в зависимости от требований, предъявляемых заказчиком (по энергетическому потенциалу, по количеству одновременно подавляемых

целей и видов активных помех, по составу радиоэлектронного вооружения НК и обеспечению совместной работы в составе радиоэлектронного вооружения НК).

С целью повышения эффективности защиты НК от ПКР совместно с предлагаемыми комплексами РЭП на НК должны устанавливаться комплексы постановки пассивных помех (например, ПК-2, ПК-10).

Комплекс ТК-25Э (7.2)

Предлагается для установки на НК типа: эсминцы, фрегат и корвет (сторожевые и десантные корабли).

Комплекс МП-405Э:

— вариант исполнения МП-405-1Э предлагается для установки на НК типа корвет

(сторожевые и десантные корабли), ракетный катер и вспомогательные корабли;

— вариант исполнения МП-405-2Э (без аппаратуры активных помех) предлагается для установки на НК типа катер и вспомогательные корабли.

Завод участвует в военно-техническом сотрудничестве с иностранными государствами и готов расширить эту область своей деятельности.

На поставку комплексов имеются соответствующие разрешительные документы.

ФГУП «РОСТОВСКИЙ ЗАВОД «ПРИБОР»

Россия, 344065, г. Ростов-на-Дону, пер. Беломорский, д. 98
Тел.: (863) 252-7820, 252-6143
Факс: (863) 252-7820
E-mail: rzpribor@aanet.ru



«Rostov Plant «Pribor» Federal State Enterprise was founded in 1965 to produce electronics for surface ships of various displacement. Acting in the interests of the Navy, the plant has equipped a great number of surface ships with electronics.

Since 1992 the plant has been producing and repairing scanner-mast assemblies. Now it manufactures over 10 models of telescopic antenna-mast assemblies (where antennas are mounted vertically or horizontally) for communications channels.

The plant is licensed to develop, produce and repair naval electronics and scanner-mast assemblies.

The plant has introduced a quality management system in conformity with SRPP VT, GOST RV 15.002, GOST ISO 9001:2001 confirmed by a conformance certificate.

Having specialists of high qualification, the plant has managed to develop and start producing TK-25Э (7.2) and MP-405Э electronic blanketing complexes (manufacturing variants MP-405-1Э, MP-405-2Э) that can be installed at all types of surface ships (destroyers, frigates, corvettes, storm-boats, etc.).

In the complexes micro-wave technologies are widely used, as well as microprocessor technology and digital methods of data processing. Due to the engineering solutions used the reliability and speed of electronic environment estimate have increased, automated control has been introduced and electronics performance has been enhanced.

The complexes may be used:

- to carry out automated reconnaissance and identification of radar station radiation of various types in conditions of complicated electromagnetic environment;
- to create automated jamming and to control passive noise;
- automated solution of electronic security tasks coordinated with the tasks of air defense and

anti-missile defense of surface ships;

— synchronization of the ship's electronics to ensure electromagnetic compatibility.

The complexes have an open structure, which ensures further modification in accordance with the electronic armament and its location on a surface ship.

Being unified in terms of components, MP-405-1Э, MP-405-2Э complexes have different versions of some instruments which conform to the requirements of customers (in terms of power budget, the number of targets neutralized simultaneously and types of jams, electronics composition and compatibility with the ship's electronics).

To boost the effectiveness of a surface ship protection passive noise complexes (for example, ПК-2, ПК-10 complexes) should be installed together with REP equipment.

TK-25Э (7.2) complex can be installed at surface ships, such as: destroyer, frigate and corvette (guard-ships and storm-boats).

МП-405Э complex:

— manufacture version — МП-405-1Э (without active jams equipment) can be installed at МП-405-2Э at surface ships of corvette type (guard-ships and storm-ships), missile-boat and auxiliary boats;

— manufacture version — МП-405-2Э (without active jams equipment) can be installed at surface ships of a launch-boat type and auxiliary ships.

The plant participates in military and technical cooperation with foreign states, and is ready to expand the field of its operation.

Supply of complexes is effected on the basis of appropriate documentation.

Rostov Plant «Pribor», Federal State Enterprise 98, Belomorsky pereulok, Rostov-on-Don, 344065, Russia
Phone: (863) 252-7820, 252-6143
Fax: (863) 252-7820
E-mail: rzpribor@aanet.ru