NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

POWER AND INTERCOM ACTIVATION

Wall panel	1. **PARKING BRAKE ON**	**CHECK**
	2. **BATT 1/ТОК АКК1 CB** LH VLV CLOSED/КРАН ЛЕВ ЗАКРЫТ, RH LVL CLOSED/КРАН ПРАВ ЗАКРЫТ and landing gear lights will illuminate. INVERTER ON/ПРЕОГРАЗ light may illuminate if INV./ПРЕОГР. switch is in AUTO/АВТ or MAN/РУЧН position.	**ON AND COVERED**
	3. **BATT 2/АКК2 CB**	**ON AND COVERED**
	4. **INT.COM/АВСК CB**	**ON**
	5. **INV./ПРЕОБР. CB**	**AUTO/АВТ**
Left panel	Set up ground power if needed	
	1. **SPU-9 RADIO/РАДИО DIAL**	**GROUND CREW/НОЛ**
	2. **GROUND POWER**	**REQUEST**
Wall panel	1. **EXT DC/=ТОК АЭР ПИТ CB** EXT DC PWR=/АЭР ПИТ= light will illuminate.	**ON AND COVERED**
	2. **EXT AC/~ТОК АЭР ПИТ CB** EXT AC PWR~/ АЭР ПИТ~ light will illuminate.	**ON AND COVERED**
	3. **VHF-1/УКВ-1 CB**	**ON**
	4. **VHF-2/УКВ-2 CB**	**ON**
	END	

NIGHT FLYING LIGHT SETUP

Wall panel	When using night vision goggles.	
	1. **NVG/ПРИБОРЫ CB**	**ON**
	When not using night vision goggles.	
	1. **ADI SAI/АГР ПКП CB**	**ON**
	2. **PANEL HSI ADI/ПУЛЬТЫ CB**	**ON**
Back panel	1. **REAR PANEL LIGHTING/ПОДСВЕТ ПУЛЬТ КОНТРОЛЯ CB**	**ON**
	2. **COCKPIT PANEL LIGHTS/ЯРКОСТЬ ПОДСВЕТА and REAR PANEL/ПОДСВЕТ BRIGHTNESS**	**ADJUST**
Wall panel	1. **BLADE TIP LIGHTS/КОНТУР ОГИН CB**	**ON**
	2. **FORM LIGHT/СТРОЕВ. ОГИН SWITCH**	**100%**
	3. **ANTI-COL BEACON/ПРОБЛЕСК МАЯК CB**	**ON**
OhP	1. **NAV LIGHTS/АНО КОД SWITCH**	**100%**
CP	1. **LAND LIGHTS/ПОСАД ФАРА SWITCHES**	**LDG LIGHT/УПР. СВЕТ and MAIN/ОСН**
	END	

BP = Back Panel — CP = Centre Panel — FP = Front Panel — LP = Left panel — LWR = Laser Warning Receiver
OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

EKRAN AND WARNING SYSTEM TESTS

Back panel	**1. EKRAN HYD TRANS PWR/ ВМГ ГИДРО ЭКРАН СВ** Master Warning light and MAIN GRBX/ГРАВ РЕД warning lights will illuminate.	**OPER (DOWN) AND COVERED**
	2. BETTY VOICE TEST/ ПРОВЕРКА РЕЧЬ BUTTON	**PUSH**
Front panel	**3. MASTER CAUTION BUTTON** EKRAN will display SELFTEST/САМОКОНТ. After five seconds, the message should be replaced by EKRAN READY/ЭКРАН ГОДЕН.	**RESET, THEN PUSH AND HOLD**
	4. LAMPS TEST/ КОНТРОЛЬ СИГНАЛИЗ BUTTON	**PUSH**
	5. ENG EXH GAS TEMP TEST STOP/КОНТРОЛ ДВИГ ГАЗ НЕ РАБОТ BUTTON	**PUSH TO CHECK** Should show >800°C
Wall panel (top)	**6. FIRE EXTINGUISHER OPER-OFF-TEST/ОГНЕТУЖ.-ОТКЛ-КОНТР. SWITCH**	**TEST/КОНТР.**
	7. FIRE SIGNALLING WARN-OFF/СИГНАЛИЗ.-ОТКЛ. SWITCH	**WARN/СИГНАЛИЗ.**
	8. FIRE TEST/КОНТРОЛ SWITCH FIRE LH ENG/ПОЖАР ЛЕВ ДВИГ, FIRE APU/ПОЖАР ВСУ, FIRE HYDR/ПОЖАР ГИДРО, FIRE RH ENG/ПОЖАР ПРАВ ДВИГ, FIRE GRBX/ПОЖАР ВЕНТИЛ fire extinguisher lights and FIRE/ПОЖАР main warning light will illuminate	**GR1/I ГП**
	9. FIRE SIGNALLING SWITCH	**TOGGLE OFF AND ON**
	10. FIRE TEST/КОНТРОЛ SWITCH FIRE LH ENG/ПОЖАР ЛЕВ ДВИГ, FIRE HYDR/ПОЖАР ГИДРО, FIRE RH ENG/ПОЖАР ПРАВ ДВИГ, FIRE GRBX/ПОЖАР ВЕНТИЛ fire extinguisher lights and FIRE/ПОЖАР main warning light will illuminate	**GR2/II ГП**
	11. FIRE SIGNALLING SWITCH	**TOGGLE OFF AND ON**
	12. FIRE TEST/КОНТРОЛ SWITCH	**GR3/III ГП**
	13. FIRE SIGNALLING SWITCH	**TOGGLE OFF AND ON**
	14. FIRE EXTINGUISHER OPER-OFF-TEST/ОГНЕТУЖ.-ОТКЛ-КОНТР. SWITCH	**OPER/ОГНЕТУЖ.**

END

ENGINE START

Wall panel	**NOTE** If ground power is being used, engine start may be deferred until after systems set-up is complete. Once engine start and run-up is complete, perform steps 1–3 on the systems activation checklist to disengage ground power.	
	1. APU SHUTOFF VLV/ПЕРЕКР. КРАН ВСУ CB APU LVL OPEN/КРАН ВСУ ОТКРЫТ light on APU panel will illuminate.	**ON AND UNGUARDED**
	2. LEFT and RIGHT SHUTOFF VLV/ПЕРЕКР. КРАН ЛЕВ. ДВИГ. and ПРАВ. ДВИГ. CBS LH VLV CLOSED/КРАН ЛЕВ ЗАКРЫТ and RH LVL CLOSED/КРАН ПРАВ ЗАКРЫТ lights on overhead panel will go out.	**ON AND GUARDED**
	3. X-FEED VLV/КРАН КОЛЬЦЕВ CB X-FEED VLV OPEN/КОЛЬЦЕВ ОТКРЫТУ light on overhead panel will illuminate	**ON AND GUARDED**
	4. FWD and AFT FUEL PUMPS/ПЕРЕД. and ЗАДН. НАСОСЫ БАКОВ CBS FWD TANK PUMP ON/БАК ПЕРЕДНИЙ and AFT TANK PUMP ON/БАК ЗАДНИЙ lights on overhead panel will illuminate.	**ON**
	5. INNER and OUTER EXT./ВНУТР. and ВНЕШН. ПОДВЕС CBS	**AS REQUIRED**
	6. EEG LH and RH/ЗРД ЛЕВ. and ПРАВ. CBS	**ON AND GUARDED**
	7. FUEL-QTY/ТОПЛИВОМЕР CB	**ON**
Front panel	**1. SELF TEST FUEL QUAN/КОНТРОЛЬ ТОПЛИВОМЕРД BUTTON**	**PUSH**
	2. STARTUP	**REQUEST**
Left panel	**1. START-CRANK-FALSE START/ЗАПУСК-ПРОКРУТКА-ЛОЖНЫЙ ЗАПУСК SWITCH**	**START/ЗАПУСК**
	2. ENGINE SELECTOR SWITCH	**APU/ВСУ**
	3. START/ЗАПУСК BUTTON	**PRESS**
	NOTE APU EGT will rise and should not exceed 850°C. The APU OIL PRESS. NORM/Р МАСЛА ВСУ and APU ON/ВСУ ВКЛЮЧЕНА lights should illuminate. Stand-by mode should be reached in 24 seconds, with an EGT of no more than 720°C.	
	⊘ CAUTION If there is no EGT response after the start button is pressed for 9 seconds, if the above parameters are not met during start-up, if there are any anomalies in APU operation, or if there is an uncontrolled APU shutdown, cancel APU by pressing the APU SHUTOFF/ОСТАНОВ ВСУ button. If the cancellation is due to lack of EGT or an uncontrolled shut-down, an APU engine crank should be performed before initiating another restart. The APU will automatically shut down in case of RPM over-limit, which is indicated by the APU Nmax SHUTOFF/ОСТАНОВ ВСУ по n light on the APU panel.	
	4. APU WARM-UP Warm-up, with no air bleeding, should take one minute before using the APU for engine starts.	**COMPLETE**

ENGINE START

Left panel

5. COCKPIT DOOR	**CLOSED**
6. ROTOR BRAKE	**OFF (DOWN)**
7. ENGINE SELECTOR SWITCH	**LH ENG/ЛЕВ. ДВИГ.**
8. START/ЗАПУСК BUTTON Tachometer will start to rise.	**PRESS**

⚠ WARNING
It is forbidden to start the engines with no operating boost pumps.

9. LH ENGINE CUT-OFF VALVE/ЛЕВ. СТОП-КРАНИ ДВИГАТЕЛЕЙ LEVER	**OPEN/ЗАКРЫТУ**

NOTE
At 20% RPM. Left engine EGT should rise smoothly and reach 600°C at idle (72–78% RPM) in ~60 seconds. Rotor motion should initiate at no more than 25% RPM. Starter will disengage at 60–65% RPM and the START VLV/КЛАПАН ЗАПУСКА light on the engine panel will go out. Hydraulic pressure and temperature should rise in all systems (monitor rear panel).

⊘ CAUTION
Close the engine cutoff valve lever and press STOP/СТОП ЗАПУСК button to cancel an engine startup if the above parameters are not met or in the following situations:
• EGT goes over limit.
• RPM “freezes” for more than 3 seconds.

Another start-up is allowed after an aborted start only after reaching a full stop on the tachometer and addressing the reason(s) for the failed start. Before initiating another start-up, perform an engine crank.

It is not advised to move the Engine Selector Switch before the first engine has reached idle power.

10. ENGINE SELECTOR SWITCH Repeat process for right engine	**RH ENG/ПРАВ. ДВИГ.**

⊘ CAUTION
After both engines have started, check rotor RPM. Operation between 54–65% rotor RPM is not advised. If necessary to meet this requirement, move the engine throttle levers up to attain a rotor speed of 62–70% RPM.

⚠ WARNING
Do not increase engine power past idle until the output oil temperature reaches +30°C for the engines, and no less than -15°C for the main gearbox (monitor wall panel).

11. APU SHUTOFF/ОСТАНОВ ВСУ BUTTON APU OIL PRESS. NORM/Р МАСЛА ВСУ and APU ON/ВСУ ВКЛЮЧЕНА lights go out; APU EGT to zero.	**PRESS**
12. ENGINE THROTTLES Engine RPM should settle at ~80%.	**AUTO/АВТОМАТ**

Wall panel

1. APU SHUTOFF VLV/ПЕРЕКР. КРАН ВСУ СВ APU LVL OPEN/КРАН ВСУ ОТКРЫТ light goes out.	**OFF AND GUARDED**
2. LH and RH AC SYS GEN/ЛЕВ. and ПРАВ. ~ТОК ГЕН. СВS	**ON**

END

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

APU AND ENGINE CRANK AND FALSE START

APU false start

NOTE
A false APU start is used to check the APU system without fuel ignition.

1.	**ONBOARD/GROUND ELECTRICAL POWER**	**CHECK**
2.	**APU SHUTOFF VLV/ПЕРЕКР. КРАН ВСУ СВ**	**ON**
3.	**AFT FUEL PUMP/ЗАДН. НАСОСЫ БАКОВ СВ**	**ON**
4.	**START-CRANK-FALSE START/ЗАПУСК-ПРОКРУТКА-ЛОЖНЫЙ ЗАПУСК SWITCH**	**FALSE START/ ЛОЖНЫЙ ЗАПУСК**
5.	**ENGINE SELECTOR SWITCH**	**APU/ВСУ**
6.	**START/ЗАПУСК BUTTON**	**PRESS**
7.	**APU SHUTOFF/ОСТАНОВ ВСУ BUTTON** After 15 seconds.	**PRESS**
8.	**APU CRANK**	**CHECK**

APU crank

NOTE
After a false or failed APU start, you need to vent the remaining fuel from the combustion chamber and then do an APU crank. The crank serves to blow out any fuel in the APU combustion chamber after the incomplete start.

An APU crank is performed exactly like an APU false start, except for step 4. Its purpose

4.	**START-CRANK-FALSE START/ЗАПУСК-ПРОКРУТКА-ЛОЖНЫЙ ЗАПУСК SWITCH**	**CRANK/ПРОКРУТКА**

Engine False Start

NOTE
A false engine start is used to check the engine system without fuel ignition.

1.	**ROTOR BRAKE**	**ON (UP)**
2.	**ENGINE CUT-OFF VALVE/СТОП-КРАНИ ДВИГАТЕЛЕЙ LEVER** Left or right as required by the engine being false-started.	**OPEN/ЗАКРЫТУ**
3.	**SHUTOFF VLV/ПЕРЕКР. КРАН ДВИГ. СВ**	**L/R ON AS REQUIRED**
4.	**START-CRANK-FALSE START/ЗАПУСК-ПРОКРУТКА-ЛОЖНЫЙ ЗАПУСК SWITCH**	**FALSE START/ ЛОЖНЫЙ ЗАПУСК**
5.	**ENGINE SELECTOR SWITCH**	**L/R AS REQUIRED**
6.	**START/ЗАПУСК BUTTON**	**PRESS**

NOTE
During the false start, monitor the following: oil pressure >0.5 kg/cm^2, RPM >20%

7.	**ENGINE CRANK**	**CHECK**

Engine Crank

NOTE
After a false or failed engine start, you need to vent the remaining fuel from the combustion chamber and then do an engine crank. The crank serves to blow out any fuel in the engine combustion chamber after the incomplete start.

An engine crank is performed exactly like an engine false start, except for steps 3 and 4:

3.	**SHUTOFF VLV/ПЕРЕКР. КРАН ДВИГ. СВ**	**OFF**
4.	**START-CRANK-FALSE START/ЗАПУСК-ПРОКРУТКА-ЛОЖНЫЙ ЗАПУСК SWITCH**	**CRANK/ПРОКРУТКА**

END

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OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

SYSTEMS ACTIVATION

Cyclic	**1. PARKING BRAKE**	**ON**
Wall panel	**NOTE** With engines running at 80% RPM in auto mode, ground power may now be turned off. If system set-up is done before starting engine, defer these steps until after completed engine start and run-up.	
	1. EXT DC/=ТОК АЭР ПИТ СВ EXT DC PWR=/АЭР ПИТ= light will go out.	**OFF AND COVERED**
	2. EXT AC/~ТОК АЭР ПИТ СВ EXT AC PWR~/ АЭР ПИТ~ light will go out.	**OFF AND COVERED**
	3. GROUND POWER	**REQUEST OFF**
	4. NAV/ПНК СВ Radar altimeter and HSI will activate; HSI will still display “Heading unreliable” KC flags; HUD NO READY/РАНЕТ light illuminates, and will go out as HUD comes online after ~3 minutes.	**ON**
	5. STANDBY SAI/РЕЗЕРВ АГ СВ	**ON**
	6. IFF/СРО СВ	**ON**
	7. EJECT-SEAT-SYS/АВАР. ПОКИДАН. СВS	**ALL ON AND COVERED**
Back panel	**1. AUT EJECT SYS BIT/КОНТРОЛЬ КАНАЛОВ САП TEST**	**COMPLETED**
	Move the MAN-POWER-BLADES SEPARATION/ИСХОД-ПИТАНИЕ-ОТДЕЛЕНИЕ ЛОПАСТЕЙ egress mode selector through each position and press the circuit test button. The КОНТРОЛЬ САП light should illuminate for all modes except MAN/ИСХОД.	
	2. INU HEAT/ОБОГРЕВ ИКВ СВ	**ON**
	3. INU/ИКВ СВ ADI will activate; Pitch and bank steering (ДИР) flag will still display; HSI “Heading unreliable” KC flags will be stowed.	**ON**
	4. UV-26 OPER-OFF/УВ-26 ВЛК-ОТКЛ SWITCH Overhead panel countermeasure indicator turns on, displaying the number of flares available (typically 64/side).	**OPER/ВКЛ. AND GUARDED**
	5. UV-26 TEST-OFF/УВ-26 КОНТР-ОТКЛ SWITCH Countermeasures indicator should display 990.	**TEST/КОНТР**
	6. UV-26 TEST-OFF/УВ-26 КОНТР-ОТКЛ SWITCH	**OFF/ОТКЛ AND GUARDED**
	7. L-140/Л-140 СВ Back-panel LWS/ИСПР light will illuminate green.	**ON**
	8. L-140 TEST/Л-140 КОНТР BUTTON Overhead panel LWS indicator will illuminate random direction and hemisphere lights; MWS light will blink.	**PRESS**
Left panel	**1. K-041 СВ** “Shkval” display turns on; HUD activation starts unless already started with the NAV/ПНК circuit breaker.	**ON**

SYSTEMS ACTIVATION

Front panel	**1. CLOCK**	**CHECK TIME**
	2. HSI COMMANDED HEADING AND COURSE	**AS DESIRED**
	3. BAROMETRIC ALTIMETER	**SET**
	4. RADAR ALTIMETER	**SET AND TEST**
	5. ADI	**SET AND TEST**
	6. ACCELEROMETER	**RESET**
	7. АБРИС СВ ABRIS system will boot up, which takes ~3 minutes.	**ON**
	8. ENG EXH GAS TEMP TEST RUN/ КОНТРОЛ ДВИГ ГАЗ РАБОТ BUTTON	**PUSH TO CHECK** Should show <150°C
UV-26 Countermeasures panel	**1. COUNTERMEASURES AVAILABILITY**	**CHECK**
	Move the QUANT-NUM/НАЛИЧ-ПРОГР switch to QUANT/НАЛИЧ, then move the SIDE/БОРТ switch to the left, right and middle position to show availability in each countermeasures launcher. Fully loaded, it should display 64 per side, and 128 total in the middle position.	
	2. COUNTERMEASURES PROGRAM	**SET**
	Move the QUANT-NUM/НАЛИЧ-ПРОГР switch to NUM/ПРОГР. Use the NUM/СЕРИА button to adjust the number of sequences (first number on display). Use the SEQ/ЗАЛП button to adjust the number of flares per sequence (second number on display). Use the INTERVAL/ИНТЕРВАЛ button to adjust the delay between releases (third number on display). Use the RES PROG/СБРОС ПРОГР. button to reset to the default (110) program.	

NUM/SEQ/INTERVAL	0	1	2	3	4	5	6	7	8	9
Number of sequences	∞	1	2	3	4	12	6	15	8	9
Flares per sequence		1	2	3	4	5	6	7	8	
Interval between flares	⅛ s	1 s	2 s	3 s	4 s	5 s	6 s	¼ s	8 s	½ s

Move the QUANT-NUM/НАЛИЧ-ПРОГР switch back to QUANT/НАЛИЧ when done.

NOTE
If ambient temperature is below +5°C or if flight at altitude is planned, enable anti-icing systems.

Overhead panel	**1. ENG ANTI ICE/DUST PROT / ПОС ДВИГ SWITCH**	**UPPER POSITION**
	2. ROTOR ANTI-ICE/ПОС ВИНТОВ СВ	**ON**
	3. PITOT HEAT STA AOA/ППД ДУАС AND RAM AIR/ПВД ЧАСЫ CBS	**ON**
	4. ENG ANTI ICE/DUST PROT / ПОС ДВИГ SWITCH	**DUST/ПЗУ** If flying in dusty conditions
	5. WINDSH-WIPER/СТЕКЛООЧИСТ SWITCH	**AS NEEDED**
LWR Panel	**1. RESET/СБРОС BUTTON** Lights from L-140 test will go out. Back-panel LWS/ИСПР light will illuminate green after 30 seconds.	**PRESS**

END

COMMUNICATION SYSTEM SETUP

Wall panel	1. INT.COM/ABCK CB	CONFIRM ON
	2. VHF-1/УКВ-1 CB	CONFIRM ON
	3. VHF-2/УКВ-2 CB	CONFIRM ON
	4. DL/ТЛК CB	ON
	5. VHF-TLK/УКВ-ТЛК CB	ON
	6. SA-TFL/СА-ТЛФ CB	ON
Right panel	1. SIGNAL FLARE POWER CB	ON/ВКЛ
	2. R-828 (VHF-1) CHANNEL/КАНАЛИ SELECTOR	AS REQUIRED

R-828/VHF-1 Channel presets are:

1	21.5 MHz	3	27.0 MHz	5	30.0 MHz	7	40.0 MHz	9	55.5 MHz
2	25.7 MHz	4	28.0 MHz	6	32.0 MHz	8	50.0 MHz	10	59.9 MHz

	3. SQ/ПШ CB	AS REQUIRED
	4. R-828 VOLUME/ГРОМК. KNOB	AS REQUIRED
	5. TUN/АСУ BUTTON	PRESS To tune to selected channel
	6. ID NO./КТО Я SELECTOR Flight lead is 1, wingmen/second element are 2–3	PER FLIGHT POSITION
	7. DATA/РЕЖИМ SELECTOR	AS REQUIRED

OFF/ОТКЛ – link disabled; REC/ПРИЕМ – receive only; WINGM/ВЕДОМ – to/from all wing members; COM/КОМ – to/from flight leader only. In WINGM/ВЕДОМ and COM/КОМ mode, wingman icons will be displayed on the ABRIS.

	8. NAV DATALINK POWER CB	ON/ВЦУ
Left panel	1. R-800L1 (VHF-2) FREQUENCY	AS REQUIRED
	2. AM-FM/АМ-ЧМ SWITCH	AS REQUIRED
	3. SQ/ПШ SWITCH	AS REQUIRED
	4. GUARD/АП SWITCH	OFF
	5. ADF/АРК SWITCH	OFF
	6. 100–50 SWITCH	100
	7. TEST/КОНТР. BUTTON	PRESS
	8. SPU-9 RADIO/РАДИО SELECTOR	AS REQUIRED
	9. COMMUNICATIONS	CHECK

END

NAVIGATION SYSTEM SETUP

Back panel

1. INU HEAT/ОБОГРЕВ ИКВ CB — **CONFIRM ON**

2. INU/ИКВ CB — **CONFIRM ON**

Wall panel

1. NAV/ПНК CB — **CONFIRM ON**

2. MH-GYRO-MAN/МК-ГПК-ЗК SWITCH — **GYRO/ГПК**

Front panel

3. ADF — **CHECK**

On the ADF CHAN/КАНАЛИ АРК selector, select the setting corresponding to your current airfield. Default configuarion is:

1	Krasnodar-Center	3	Krymsk	5	Gali (outer), Mozdok (inner)	7	Mineralnye Vody
2	Maykop-Khanskaya	4	Anapa-Vityazevo	6	Nalchik	8	Sukhumi-Babushara (outer), Peredovaya (inner)

On the left front panel, set the DH/DATA MANUAL-AUTO/ЗПУ-ЗК РУЧН.-АВТ. switch to AUTO/АВТ. On the centre console, set the INNER-AUTO-OUTER NDB/ ПРИВОД Р/С БЛИЖН.-АВТ-ДАЛЬН. switch to INNER/БЛИЖН. On the right console ADF panel, set the COMPASS-ANT/КОМП.-АНТ. switch to ANT/АНТ. to receive Inner NDB identification signal broadcast (once every 15 seconds). Set the COMPASS-ANT/КОМП.-АНТ. switch to COMPASS/КОМП. and check that the HSI points to the inner beacon.

Repeat the process with the INNER-OUTER/БЛИЖН.-ДАЛЬН. switch in the OUTER/ДАЛЬН. position and confirm that the HSI points to the outer beacon. With checks complete, leave the INNER-OUTER/БЛИЖН.-ДАЛЬН. switch in the OUTER/ДАЛЬН. position and the COMPASS-ANT/КОМП.-АНТ. switch in the COMPASS/КОМП. position.

On the left panel, turn on the ADF/APK switch and check the HDI to confirm that the yellor RMI bearing needle aligns with the Desired Heading index. Then turn the ADF/APK switch off.

4. DH/DATA MANUAL-AUTO/ЗПУ-ЗК РУЧН.-АВТ. SWITCH — **AS DESIRED**

5. АБРИС CB — **CONFIRM ON**

The ABRIS takes 3 minutes to boot and load. If it is not pre-programmed with mission waypoints, they can be added manually by pressing [3] PLAN/ПЛАН; [2] EDIT/РЕДАКТ > DRAW/РИСОВ; [1] EDIT/РЕДАКТ > INSERT/ВСТАВ. Use the cursor knob to adjust position; pushing the cursor alternates between X/Y movement; press [1] ADD/ДОБАВ; [1] ENTER/ВВОД. To insert waypoints between two existing points, select the waypoint after wich you want to add the new waypoint, then press [1] EDIT/РЕДАКТ > INSERT/ВСТАВ.

When complete, save the flight plan by pushing [1] SELECT/ВЫБРАТЬ > SAVE/ЗАПИСЬ; enter a name; push [4] SAVE/ЗАПИСЬ. Activate the flight plan by pushing [4] ACTIV/АКТ. This puts you directly into NAV/НАВ mode.

Right Panel

1. PVI-800 NAV MASTER MODE KNOB — **EDIT/ВВОД**

If the PVI-800 is not pre-programmed with mission waypoints, they can be added manually by pressing the WPT/ППМ button, enter the corresponding number, then enter 5-number latitude and 6-number longitude. For positive numbers (northern, eastern hemisphere), begin entry by pushing the +/0 button. For negative numbers (southern, western hemisphere), begin by pushing the -/1 button. Finish entry by pushing the ENTER/ВВОД button. For xample: WPT/ППМ 2 0 44442 0 040063 ENTER/ВВОД sets waypoint 2 to lat N44°44'2[0]"/long E040°06'3[0]".

If the ABRIS has been programmed, coordinates can be referenced on the NAV > FPL / НАВ > ШВЖ page. The same method can be used to enter nav fix points (FIX PNT/ОР), airfields (AIR FIELD/АЭР), target points (NAV TGT/ОТ) and to manually set the current position (SELF COOR/ϕλ).

2. PVI-800 NAV MASTER MODE KNOB — **OPER/РАБ**

3. FIRST WAYPOINT — **SELECTED**
WPT/ППМ button followed by corresponding number.

4. NAV INU FIXTAKING SWITCH — **AS DESIRED**

5. NAV DATALINK POWER CB — **CONFIRM ON/ВЦУ**

END

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

AUTOPILOT ACTIVATION

Cyclic	1. AUTOPILOT DISENGAGE BUTTON	PRESS
	2. CYCLIC TRIM	CENTRED AND RESET
Right Panel	1. BANK HOLD/K BUTTON	ON
	2. PITCH HOLD/T BUTTON	ON
	3. FD АР/ДИР УПР BUTTON	CONRIFM OFF
	4. HDG HOLD/H BUTTON	ON
	5. ALT HOLD/B BUTTON	CONFIRM OFF
	6. BR-RD/БАР-РВ SWITCH	AS DESIRED
	7. DH-DT/ЗК-ЛЗП SWITCH	AS DESIRED
Cycl.	1. TRIMMER BUTTON	PRESS
Left Panel	1. DESCENT-ROUTE/СНИЖЕН-МАРШР SWITCH	OFF / CENTRED
	2. AUTO-TURN/АДВ BUTTON	OFF

END

OFFENSIVE SYSTEMS ACTIVATION

Left Panel	1. LAS-OFF/ИЗЛ.-ОТКЛ- SWITCH	LAS/ИЗЛ.
	2. RESET/СБРОС BUTTON AUTO TURN / АДВ, A/A H O / ППС, A/A / ВЦ, MOV GND TGT / НПЦ buttons should all be off.	PRESS
	3. AUTOMATIC TRACKING SWITCH	AT/AC
	4. HEAD-MOUNTED DEVICE SWITCH	AS DESIRED
	5. TRAIN-OFF/ТРЕНАЖ-ОТКЛ SWITCH	OFF/ОТКЛ
Centre Panel	1. MASTER ARM/ГЛАВНЫЙ ВКЛ SWITCH	OFF (DOWN)
	2. MAN-AUTO/РУЧН-АВТ SWITCH	AUTO/АВТ
	3. LNG-MED-SHORT/ДЛ-СР-КОР SWITCH	AS DESIRED
	4. HE-API/ОФ-БР SWITCH	AS DESIRED
	5. LOW-HIGH/МТ-БТ SWITCH	AS DESIRED
Wall Panel	1. IFF/СРО CB	ON AND COVERED
	2. W-SYS/СУО CB	ON AND COVERED
Back panel	1. UGM B / НП/АКС DIAL	AS REQUIRED

0	S-8KOM AT/AP rockets	3	S-24 heavy rockets
1	S-8TsM smoke rockets	4	S-8M HE rockets
2	S-13 rockets	5	UKP-23 gun pods

END

BP = Back Panel — CP = Centre Panel — FP = Front Panel — LP = Left panel — LWR = Laser Warning Receiver
OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

TAXIING PREPARATION

1. ALL SYSTEMS NOMINAL - ENGINES - ROTORS - SYSTEMS - COMPONENTS	CHECK
2. WARNING LIGHTS	CHECK
3. EKRAN/EKPAH DISPLAY	CHECK
4. BANK, PITCH, HDG HOLD/K, T, H AUTOPILOT MODE BUTTONS	ON
5. EJECT-SEAT-SYS/АВАР. ПОКИДАН. CBS	ALL ON AND COVERED
6. SAI	UNCAGE AND SET

END

HOVER CHECK (WHEN TAKING OFF FROM AN AIRFIELD)

1. HELICOPTER ORIENTED AGAINST THE WIND	CHECK
2. WHEELS ALIGNED	CHECK
3. PARKING BRAKE	ENGAGE
4. FLIGHT INSTRUMENTS	NOMINAL
5. HOVER CHECK	REQUEST
6. PARKING BRAKE	RELEASE
7. COLLECTIVE	SMOOTHLY UP
8. DESIRED HOVER ALTITUDE	SET
9. TRIM BUTTON	PRESS

NOTE

Be careful not to let the aircraft bank or yaw. Maintain the required altitude with smooth movements of the collective. Use the radar altimeter and visual ground references to hold a constant altitude. Leaving the cockpit door open may provide better visibility of ground reference points. Use smooth pedal inputs to turn the aircraft, but note that weather cocking affects the turn speed at different headings.

10. HOVER CHECKS - AIRCRAFT CONTROL - CENTRE OF GRAVITY POSITION - VERTICAL LIFT-OFF ABILITY	 CHECK CHECK CHECK
11. HOVER MODE STABILISATION	CHECK

NOTE

At an altitude of at least 4m, balance and trim the helicopter and engage the Hover mode by pressing the Hover button. The overhead AUTO HOVER/ВИСЕНИЕ light will illuminate. On the HSI, the needles become perpendicular to each other and their deflection corresponds to the helicotper's hover position. A neutral (zero) position should be indicated on the pitch scale.

END

TAXIING

1.	TAXI PERMISSION	REQUEST
2.	NO OBSTACLES OR FOREIGN OBJECTS IN TAXI PATH	CHECK
3.	PARKING BRAKE	OFF
4.	TAXI TO ASSIGNED TAKE-OFF POINT	CHECK

NOTE

Using the ground as reference, control taxi speed with the cyclic, collective, and wheel brakes. You can also use the anti-torque pedals to turn the facing of the helicopter. In case of low visibility conditions, turn on the blade tip lights, the navigation lights, and the anti-collision light. You can also turn on the main or backup landing lights and manually direct the main light.

To halt the helicopter during a taxi, you should move the cyclic to a neutral position, decrease the collective pitch, and engage the wheels brakes.

⊘ CAUTION

Taxi should be performed on hard, smooth surfaces at speeds up to 15km/h with a wind speed less than 20m/s.

In case of brake failure, you can halt the aircraft by pulling the cyclic back while increasing collective pitch to nearly hover. The helicopter must be carefully controlled with the cyclic to avoid the tail hitting the ground.

NOTE

Taxi turns are executed with smooth and simultaneous input of the anti-torque pedals and cyclic stick towards the direction of the turn. Be careful to avoid a banking angle over 5° and high speed turns.

During taxi in a crosswind, the helicopter will have a tendency to turn toward the wind. This should be compensated for by reacting with a neutral bank angle towards the wind direction up to 5°.

⊘ CAUTION

Backward taxi and turns on one wheel are not advised.

Taxi on soil or snow should be performed with extreme caution and at speeds up to 5 km/h or less. Nose wheel bounce should be avoided by controlling the helicopter via the cyclic and collective sticks.

END

VERTICAL TAKE-OFF USING ROTOR-IN-GROUND EFFECT

NOTE

Take-off technique may be performed when in a stable hover at no more than 2m altitude.
Engines will need to be at maximum power.

1.	HOVER CHECK	TO 2m
2.	PERMISSION TO TAKE OFF	REQUEST
3.	ALL SYSTEMS NOMINAL	CHECK
4.	CYCLIC	FORWARD

NOTE

Initiate forward flight acceleration while increasing engine power to take-off mode (in case spare power is available) This is in order to prevent any sinkage of the helicopter.
Forward flight acceleration should take place in the rotor-in-ground zone with a gradual climb to 5m altitude at 90–100km/h IAS. Further acceleration should be performed with a slight climb.

5.	LANDING GEAR	UP

END

VERTICAL TAKE-OFF WITHOUT USING ROTOR-IN-GROUND EFFECT

NOTE
Take-off technique may be performed when the helicopter is in a stable hover at no less than 10m above obstacle height in the take-off direction. Maximum engine power would be used.

1.	HOVER CHECK	TO 10m
2.	PERMISSION TO TAKE OFF	REQUEST
3.	ALL SYSTEMS NOMINAL	CHECK
4.	CYCLIC	FORWARD

NOTE
Initiate forward flight acceleration while increasing engine power to take-off mode (in case spare power is available) or pulling back on the collective. This is in order to prevent any sinkage of the helicopter.
If the collective input for take-off power is not enough to compensate for the sinking of the helicopter, it will be necessary to pull back on the cyclic to increase the pitch angle and decrease both the acceleration rate and sink rate.

5.	LANDING GEAR	UP

END

RUNNING TAKE-OFF

NOTE
Take-off technique may be performed when the helicopter is in a stable hover at an altitude no less than 1m. Engines will need to be at take-off power and the field conditions need to permit operations in the rotor-in-ground zone.

1.	HOVER CHECK	PERFORM
2.	LAND HELICOPTER	CHECK
3.	PERMISSION TO TAKE OFF	REQUEST
4.	CYCLIC	FORWARD
5.	ENGINE POWER	TAKE-OFF MODE

NOTE
Initiate forward acceleration while increasing engine power to take-off mode. Accelerate with the maximum possible rate (pitch angle no more than -10°). The main landing gear wheels will lift-off the ground.

6.	INDICATED AIR SPEED	30–40km/h
7.	CYCLIC	SLIGHTLY BACK

NOTE
Lift the helicopter off with a negligible pull on the cyclic. Once airborne, accelerate with a gradual climb up to 100–120 km/h and then continue the climb at this airspeed.

8.	LANDING GEAR	UP

Cross-wind

NOTE
During a crosswind take-off, deflect the cyclic in the direction against the wind; this will compensate the drift in the lift-off moment. Simultaneously, apply pedal input to prevent the wind's yaw momentum. The required controls deflection depends on wind speed.

Snow & dust

NOTE
During take-off and landing on dusty or snowy fields, the helicopter creates dust/snow vortexes that impact visibility. Take-off and landing in dusty conditions should be performed with the Engines' Dust Protectors (EDP) on. Prior to takeoff it is recommended to blow off the dust from the field with the rotors' wash.

END

INU COORDINATE CORRECTION

NOTE
Once you are within 18 km of a reference point, the EKRAN will sound an audio cue and display PERFORM COORDINATES CORRECTION/ПРОВЕДИ КОРРЕКЦ КООРД.

System preparation	**1. SHKVAL** Press the target mode panel RESET/СБРОС button.	**CAGED**
	2. PVI-800 REFERENCE POINT On the PVI-800, press the FIX PNT/OP button followed by the corresponding reference point number.	**SELECTED**
	3. PVI-800 INU-UPDATE/И251В-ПРОЛ SWITCH	**AS DESIRED**
	4. TERRAIN REFERENCE POINT	**VISUALLY LOCATED**

NOTE
If a reference point is not located along the flight route it is recommended to perform corrections using the I-251V Shkval. Select either mode and methodology accordingly.

Fly-over/Пролет method	**1. REFERENCE POINT**	**FLY OVER**
	2. CYCLIC UNCAGE SHKVAL BUTTON The current coordinates are replaced by the reference coordinates and the PVI-800 buttons will go out.	**PRESS**
INU/И251В Shkval method	**1. TARGET MODE LAS-OFF/ИЗЛ-ОТКЛ SWITCH**	**LAS/ИЗЛ**
	2. CYCLIC UNCAGE SHKVAL BUTTON The Shkval sensor is uncaged.	**PRESS**
	3. SHKVAL CURSOR	**MOVE TO REFERENCE POINT**
	4. SHKVAL TRACKING GATE SIZE	**ADJUST TO COVER POINT**
	5. COLLECTIVE TGT LOCK/АВТ ЗАХВ BUTTON	**PRESS**
	6. TARGET DESIGNATED Shkval displays “TA”.	**CHECK**
	7. CYCLIC UNCAGE SHKVAL BUTTON The relative coordinates of the designated target point are calculated, and the current coordinates are replaced by the reference coordinates corrected for the relative target location. During the calculation, the HUD displays “КОРР”.	**PRESS**
	8. TARGET MODE RESET/СБРОС BUTTON Once correction is complete. The HUD “КОРР” message is cleared; the PVI-800 FIX PNT/OP button is turned off; Shkval is caged.	**PRESS**

END

INSTRUMENT APPROACH

Right Panel	1. PVI-800 NAV MASTER MODE KNOB	OPER/РАБ
	2. DESIRED AIRFIELD On the PVI-800, press AIR FIELD/АЭР followed by the appropriate number.	SELECTED
	3. DH-DT/ЗК-ЛЗП SWITCH	AS DESIRED
	4. BANK, PITCH, HDG, ALT HOLD/K, T, H, B AUTOPILOT MODE BUTTONS	ON
	5. ADF	SET
Wall Panel	1. МН-GYRO-MAN/МК-ГПК-ЗК SWITCH	GYRO/ГПК
	NOTE If flying at night, in poor weather, or in dusty conditions, set up the aircraft for safe approach flight.	
	2. BLADE TIP LIGHTS/КОНТУР ОГНИ SWITCH	ON
	3. FORM LIGHT/СТРОЕВ ОГНИ SWITCH	100%
OhP	1. NAV LIGHTS/АНО КОД SWITCH	100%
	2. ANTI ICE/DUST PROT / ПОС ДВИГ SWITCH	DUST/ПЗУ
Centre Panel	1. INNER-OUTER/БИЛЖН.-ДАЛЬН. SWITCH	OUTER/ДАЛЬН
	2. MASTER ARM/ГЛАВНЫЙ SWITCH	OFF
	3. WEAP ARM-OFF/ВЕР-НЕ ВЕР SWITCH	OFF/НЕ ВЕР
Front Panel	1. HSI DH/DTA MANUAL-AUTO/ЗПУ-ЗК РУЧН-АУТ SWITCH	AUTO/АУТ
	2. HSI	CHECK
Right Panel	**NOTE** To automate the navigation process, the ROUTE/МАРШ mode can be used to automatically align the aircraft with the required heading or track for the airport selected on the PVI-800.	
	1. HDG HOLD/H AUTOPILOT MODE BUTTON	OFF
Coll.	1. DESCENT-ROUTE/СНИЖЕН-МАРШ SWITCH	ROUTE/МАРШ
	END	

NIGHT LANDING

Centre Panel	**NOTE** If flying at night, set up the aircraft lighting for safe landing and taxiing.	
	1. LAND LIGHTS/ПОСАД ФАРЫ SWITCHES - LDG LIGHT-RETRACT/УПР СВЕТ-УБОРКА - MAIN-BACKUP/ОСН-РЕЗЕРВ	LDG LIGHT/ УПР СВЕТ AS NEEDED
Coll.	1. LDG LIGHT/ФАРА НАТ	ADJUST
WP	1. ANTI-COL BEACON/ПРОБЕЛЕСК МАЯК СВ	ON
	END	

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OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

LANDING

NOTE
The type of landing is generally chosen according to the landing area (dimensions, condition, and elevation), meteorological conditions, and weight of the helicopter. The landing should take place, if possible, against the wind.

Final approach	1. LANDING	REQUESTED
	2. LANDING GEAR	DOWN
	3. INNER NDB - AIRSPEED - ALTITUDE - SINK RATE	PASS OVER 140km/h 70m 2–3m/s
Vertical landing using the Rotor-in-Ground effect	1. PULL BACK CYCLIC TO DECELERATE - AIRSPEED - ALTITUDE	 40–50km/h 20–30m
	2. MAINTAIN STEADY DECELERATION - AIRSPEED - ALTITUDE	 0km/h 2–3m
	3. COLLECTIVE - SLOWLY DOWN - FULLY DOWN	 UNTIL LANDED WHEN LANDED
Vertical landing without using the Rotor-in-Ground effect	1. DETERMINE SAFE ALTITUDE ABOVE OBSTACLES	ENSURE 10m CLEARANCE
	2. PULL BACK CYCLIC TO DECELERATE - AIRSPEED - VERTICAL SPEED	 40–50km/h <2m/s
	3. MAINTAIN STEADY DECELERATION - AIRSPEED - ALTITUDE	 0km/h 20–30m
	4. DESCEND FROM HOVER WHILE AVOIDING LATERAL MOVEMENT	ENSURE 5m CLEARANCE
	5. COLLECTIVE - SLOWLY DOWN - FULLY DOWN	 UNTIL LANDED WHEN LANDED
Roll-out style landing	1. PULL BACK CYCLIC TO DECELERATE - AIRSPEED - ALTITUDE	 60–70km/h 20–30m
	2. MAINTAIN DECELERATION/DESCENT - AIRSPEED - ALTITUDE	 30–40km/h 0m
	3. COLLECTIVE - SLOWLY DOWN	UNTIL NOSE WHEEL DOWN
	4. WHEEL BRAKES	SPEED <40km/h

END

ENGINE AND EQUIPMENT SHUT DOWN

Flight controls	**1. CYCLIC AND PEDALS**	**NEUTRAL**
	2. COLLECTIVE	**FULLY DOWN**
Left, Overhead, Front, Right, Back and Wall Panels	**1. ALL ELECTRICALLY POWERED EQUIPMENT** - K-041 switch - Helmet-mounted Sight - Laser - Nav lights - Winscreen Wipers - Pitot heating - Engine anti-Ice - Landing lights - ABRIS - PVI-800 - Autopilot channels - Signal Flares - L-140 Laser Warning - UV-26 Countermeasures - INU	**OFF**
	2. SAI	**CAGED**
	3. LH and RH AC SYS GEN/~ТОК ГЕН. ЛЕВ. and ПРАВ. CBS	**OFF**
Left Panel	**1. ENGINE THROTTLE LEVERS**	**IDLE**
	2. ENGINE CUT-OFF VALVES	**OFF**
	3. ROTOR BRAKE Once rotor RPM is <30%	**ON**
Wall Panel	**1. LEFT and RIGHT FUEL SHUTOFF/ЛЕВ. and ПРАВ. ДВИГ. CBS** Once engines are fully spooled down.	**OFF**
	2. FUEL PUMP/НАСОСЫ БАКОВ CBS	**OFF**
	3. ALL REMAINING CIRCUIT BRAKERS	**OFF**
	4. BATTERIES	**OFF**

⊘ CAUTION

All electrical systems will lose power and turn off automatically if the generators are turned off and/or the engine is throttled down to where it no longer generates sufficient electical power. To avoid power fluctuations and potential damage, turn the systems off manually before shutting down the generator, and before reducing engine power.

If time is of the essence, forceful system shut-down through loss of electrical power from generators and engines is allowed

Wait until engine is shut down before turning off any other circuit brakers.

END

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

INGRESS TO TARGET AREA

ABRIS	1. CHARTS SETUP/НАСТРОЙКА КАРТЫ MENU	SELECT
	2. TACTICAL SITUATION / ТАКТИКА OPTION	+
	3. NAV/HAB MODE	SELECT
	4. MAP SCALE	SET
Left, Overhead, Centre, Wall panels	1. LDG LIGHTS/ФАРА	RETRACTED
	2. LAS-OFF/ИЗЛ-ОТКЛ	LAS/ИЗЛ
	3. NAV LIGHTS/АНО КОД	OFF
	4. UV-26 PROGRAM	SET
	5. MASTER ARM/ГЛАВНЫЙ SWITCH	ON
	6. WEAPON MODES	SET

Mode	Burst length	Ammunition Store	Rate of Fire
MANUAL/РУЧН	LNG/ДЛ	HE/ОФ	LOW/МТ
AUTO/АВТ	MED/СР	API/БР	HIGH/БТ
	SHORT/КОР		

	7. ANTI-COL BEACON/ПРОБЛЕСК МАЯК СВ	OFF
	8. BLADE TIP LIGHTS/КОНТУР ОГНИ СВ	OFF

END

TARGET/INGRESS POINT DESIGNATION

PVI-800	1. MODE SELECTOR	EDIT/ВВОД
	2. INU-UPDATE/И251В-ПРОЛ SWITCH	INU/И251В
	3. NAV TGT/ОТ BUTTON	PRESS
	4. TARGET POINT NUMBER	PRESS
LP	1. LAS-OFF/ИЗЛ-ОТКЛ	LAS/ИЗЛ
Cyclic and Collective	1. UNCAGE SHKVAL BUTTON	PRESS
	2. SHKVAL CURSOR	MOVE TO TARGET
	3. SHKVAL TRACKING GATE SIZE	ADJUST
	4. TGT LOCK/АВТ ЗАХВ BUTTON	PRESS
	5. UNCAGE SHKVAL BUTTON HUD displays “OT” symbol.	PRESS
PVI-800	1. ENTER/ВВОД BUTTON Target coordinates are stored in the numbered location.	PRESS
	2. MODE SELECTOR	OPER/РАБ
LP	1. TARGET MODE RESET/СБРОС BUTTON	PRESS

END

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OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

DATA LINK SETUP

LP	1. **FLIGHT MEMBER VHF FREQUENCY**	**CHECK**
Wall Panel	1. **DL/ТЛК CB**	**ON**
	2. **VHF-TLK/УКВ-ТЛК CB**	**ON**
Right Panel	1. **ID NO./КТО Я SELECTOR** Flight lead is 1, wingmen/second element are 2–3	**PER FLIGHT POSITION**
	2. **DATA/РЕЖИМ SELECTOR**	**AS REQUIRED**
	OFF/ОТКЛ – link disabled; REC/ПРИЕМ – receive only; WINGM/ВЕДОМ – to/from all wing members; COM/КОМ – to/from flight leader only. In WINGM/ВЕДОМ and COM/KOM mode, wingman icons will be displayed on the ABRIS.	
	3. **NAV DATALINK POWER CB**	**ON/ВЦУ**

END

TARGET/INGRESS POINT DESIGNATION FOR DATA LINK

Overhead Panel	1. **TARGET**	**LOCKED**
	2. **TARGET TYPE**	**SELECT**
	◇/1: Combat vehicle — △/2: AAA/SAM — ☐/3: Other — ⌂: Ingress point	
	3. **SEND/MEM / ПРД/ПАМ BUTTON**	**PRESS**
	4. **REPEAT**	**FOR ALL TARGETS**
LP	1. **TARGET MODE RESET/СБРОС BUTTON**	**PRESS**

END

DATA EXCHANGE BETWEEN HELICOPTERS

Overhead Panel	1. **TARGET TYPE**	**SELECT**
	2. **RECIPIENT(S)** The selected button lights up and the recipient's icon will flash on the ABRIS.	**SELECT**
	3. **REPEAT TARGET SELECTION**	**AS NEEDED**

NOTE

If there is more than one target of the same type in system memory, you will need to go back and press the target type button on the Data Link Control Panel as many times as required to cyle through all targets of the same type in memory. It is important to note that if no recipient is chosen before this step, pressing the target type button will not scroll through your targets on the ABRIS, and nothing will be sent. You must choose a target type, then the recipient, and then go back to the target type button in order to scroll through targets on the ABRIS. The exception to this: if you have selected the DL TO ALL/BCEM button, none of the flight member icons will flash on the ABRIS.

	4. **SEND/MEM / ПРД/ПАМ BUTTON** On the ABRIS, the selected target marker symbol and flight member icon will stop blinking and stay solid.	**PRESS**

NOTE

If the receiving flight member(s) successfully received and acknowledged data receipt, all the lighted Data Link Panel buttons will turn off. If data receipt is not acknowledged, the SEND/MEM / ПРД/ПАМ button will start blinking. In such a case, press the SEND/MEM / ПРД/ПАМ button again If DL TO ALL/BCEM was selected, the lighted buttons will turn off regardless of successful data receipt acknowledgement.

END

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OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

DELETING A DATA LINK TARGET

LP	**1. TARGET MODE RESET/СБРОС BUTTON**	**PRESS**
Overhead Panel	**1. TARGET TYPE BUTTON** If multiple targets of a type have been stored, keep pressing the button until the correct target is selected.	**PRESS**
	2. CLEAR/СТИР BUTTON The selected target disappear from the ABRIS.	**PRESS**
	END	

SENDING A PVI-800 TARGET POINT

PVI-800	**1. NAV TGT/ОТ BUTTON**	**PRESS**
	2. TARGET POINT NUMBER	**PRESS**
Overhead Panel	**1. TARGET TYPE BUTTON**	**PRESS**
	2. RECIPIENT(S) The selected button lights up.	**SELECT**
	3. SEND/MEM / ПРД/ПАМ BUTTON Once acknowledgement has been received, all lights on the selected buttons will turn off.	**PRESS**
	END	

AUTOMATIC INGRESS TO TARGET

Overhead Panel	**1. TARGET** Press the corresponding target type button until the correct target is highlighted on the ABRIS.	**SELECT**
	2. DL INGRESS/ВЫХОД BUTTON	**PRESS**
RP	**1. DH-DT/ЗК-ЛЗП SWITCH**	**DH/ЗК**
Coll.	**1. DESCENT-ROUTE/СНИЖЕН-МАРШ SWITCH**	**ROUTE/МАРШ**
Left Panel	**1. AUTO TURN/АДВ BUTTON** The ABRIS target marker will stop flashing and will marked by a cross.	**PRESS**
Cyclic	**1. APPROACH TARGET**	**TO <8km**
	2. UNCAGE SHKVAL BUTTON	**PRESS**
	Press the Uncage/Designate target button on the cyclic and begin searching for the target with the Shkval sensor. If necessary, turn on the Shkval's scanning mode by pressing the button again. Once a target is detected, slew the cursor to the target to turn scanning off, adjust the tracking gate size, and turn on automatic tracking.	
OhP	**1. DL INGRESS/ВЫХОД BUTTON** To turn off ingress mode.	**PRESS**
	END	

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9K121 VIKHR ATGM EMPLOYMENT

Minimum safe launch altitude	Maximum launch altitude	Range to target
– Hover: 10m	– Barometric: 4,000m	– Minimum: 800m
– Forward flight: 50m	– Practical/All speeds: 3,000m	– Maximum: 8,000m

Preparation

1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- BURST (SHORT/КОР=1, OTHERS=2)** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	 **AS DESIRED** **AS DESIRED** **OUTER/ВНЕШН** **ON**
2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH** **- A/A, A/A HO and MOV GND TGT/ВЦ, ППС and НПЦ BUTTONS**	 **MOV/ППУ** **LAS/ИЗЛ** **ON** **ON PER TARGET TYPE**
3. TGT LOCK/АВТ ЗАХВ BUTTON To ground stabilise Shkval. “ТГ” symbol will show on display.	**PRESS**
4. TARGET TRACKING GATE	**SLEW and ADJUST**
5. TGT LOCK/АВТ ЗАХВ BUTTON To lock target. “ТА” symbol will show on display; “ТА-ИД” (auto-tracking) symbol will show on HUD.	**PRESS**
6. AUTO TURN/АДВ BUTTON	**PRESS**
7. TRACKING GATE ON APPROACH	**ADJUST AS NEEDED**

Launch

1. MANOEUVRE HELICOPTER TO POSITION TARGET	**WITHIN LAUNCH ZONE RETICLE**
2. PARAMETERS FOR LAUNCH Within acceptable range; angular speed <3°/s. “C” (launch permitted) symbol displayed on HUD.	**CHECK**
3. WEAPONS RELEASE TRIGGER	**LOWER** To cover cannon trigger
4. WEAPONS RELEASE TRIGGER	**PRESS and HOLD**
5. MAINTAIN POSITIVE AIM	**WHILE IN FLIGHT**
6. TARGET MODE RESET/СБРОС BUTTON On target hit to cage the Shkval sensor; turn off target tracking and laser channel; reset weapon type selection; and switch back to NAV mode.	**PRESS**

NOTE

The automatic aiming can be overridden by setting the mode to MANUAL/РУЧН. In this mode, launch permission is granted even if launch parameters are not met.

END

KH-25ML AGM EMPLOYMENT

Minimum safe launch altitude	Maximum launch altitude	Range to target
– Hover: 50m	– Barometric: 4,000m	– Minimum: 1km
– Forward flight: 100m	– Practical/All speeds: 3,000m	– Maximum: 20km

Preparation	
1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	**AUTO/АВЫ** **OUTER/ВНЕШН** **ON**
2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH** **- A/A, A/A НО and MOV GND TGT/ВЦ, ППС and НПЦ BUTTONS**	**MOV/ППУ** **LAS/ИЗЛ** **ON** **ON PER TARGET TYPE**
3. STDBY-NORM/ЛДП-ЛД MODE SWITCH On front panel Laser Designator Control Panel.	**UNCOVERED and STDBY/ЛДП**
4. TGT LOCK/АВТ ЗАХВ BUTTON To ground stabilise Shkval. “ТГ” symbol will show on display.	**PRESS**
5. TARGET TRACKING GATE	**SLEW and ADJUST**
6. TGT LOCK/АВТ ЗАХВ BUTTON To lock target. “ТА” symbol will show on display; “ТА-ИД” (auto-tracking) symbol will show on HUD.	**PRESS**
7. AUTO TURN/АДВ BUTTON	**PRESS**
8. TRACKING GATE ON APPROACH	**ADJUST AS NEEDED**
Launch	
1. MANOEUVRE HELICOPTER TO POSITION TARGET	**WITHIN LAUNCH ZONE RETICLE**
2. PARAMETERS FOR LAUNCH Within acceptable range; anglar speed <3°/s. “C” (launch permitted) symbol displayed on HUD.	**CHECK**
3. WEAPONS RELEASE TRIGGER	**LOWER** To cover cannon trigger
4. WEAPONS RELEASE TRIGGER	**PRESS and HOLD**
5. MAINTAIN POSITIVE AIM	**WHILE IN FLIGHT**
6. TARGET MODE RESET/СБРОС BUTTON On target hit to cage the Shkval sensor; turn off target tracking and laser channel; reset weapon type selection; and switch back to NAV mode.	**PRESS**
7. RESET LA/СБРОС ЛДП BUTTON	**PRESS**
8. STDBY-NORM/ЛДП-ЛД MODE SWITCH	**NORM/ЛД and COVERED**

END

2A42 AND UPK-23 CANNON AUTO-TRACKING EMPLOYMENT

Minimum safe altitude	Maximum altitude	Range to target
– Hover: 10m	– Barometric: 4,000m	– Minimum: 800m
– Level flight with Shkval: 30m	Maximum speed	– Maximum: 2,000m
– Level flight without Shkval: 20m	– IAS: 300km/h	– Pitch angle: ±60°

Preparation

1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- LNG-MED-SHORT/ДЛ-СР-КОР SWITCH** **- HE-API/ОФ-БР SWITCH** **- LOW-HIGH/МТ-БТ SWITCH** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	 **AUTO/ABT** **AS DESIRED** **AS DESIRED** **AS DESIRED** **PER POD PLACEMENT** **ON**
2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH** **- A/A, A/A HO and MOV GND TGT/ВЦ, ППС and НПЦ BUTTONS**	 **MOV/ППУ** **LAS/ИЗЛ** **ON** **ON PER TARGET TYPE**
3. UGM B / НП/АКС DIAL On back panel to select UPK-23 ballistics regime.	**5**
4. TGT LOCK/АВТ ЗАХВ BUTTON To ground stabilise Shkval. “ТГ” symbol will show on display.	**PRESS**
5. TARGET TRACKING GATE	**SLEW and ADJUST**
6. TGT LOCK/АВТ ЗАХВ BUTTON To lock target. “ТА” symbol will show on display; “ТА-ИД” (auto-tracking) symbol will show on HUD.	**PRESS**
7. AUTO TURN/АДВ BUTTON	**PRESS**
8. TRACKING GATE ON APPROACH	**ADJUST AS NEEDED**

Launch

1. MANOEUVRE HELICOPTER TO POSITION TARGET	**WITHIN RANGE-OF-MOTION GATE**
2. PARAMETERS FOR LAUNCH Within acceptable range, speed, and angle. “C” (launch permitted) symbol displayed on HUD.	**CHECK**
3. WEAPONS RELEASE TRIGGER If using the 2A42 30mm cannon.	**RAISE** To uncover cannon trigger
4. CANNON/WEAPONS RELEASE TRIGGER	**PRESS and HOLD**
5. TARGET MODE RESET/СБРОС BUTTON Once target is hit – cages Shkval sensor; resets tracking and weapon selection settings.	**PRESS**

NOTE

The cannon aiming can be overridden by setting the mode to MANUAL/РУЧН. In this mode, launch permission is granted even if launch parameters are not met.

END

2A42 AND UPK-23 CANNON MANUAL EMPLOYMENT

Preparation

Minimum safe altitude	Maximum altitude	Range to target
– Hover: 10m	– Barometric: 4,000m	– Minimum: 800m
– Level flight with Shkval: 30m	Maximum speed	– Maximum: 2,000m
– Level flight without Shkval: 20m	– IAS: 300km/h	– Pitch angle: ±60°

1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- LNG-MED-SHORT/ДЛ-СР-КОР SWITCH** **- HE-API/ОФ-БР SWITCH** **- LOW-HIGH/МТ-БТ SWITCH** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	 **MAN/РУЧН** **AS DESIRED** **AS DESIRED** **AS DESIRED** **PER POD PLACEMENT** **ON**
2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH**	 **FIX/НПУ** **LAS/ИЗЛ** **OFF**
3. UGM B / НП/АКС DIAL On back panel to set up UPK-23 ballistics regime.	**5**
4. MANOEUVRE TO POSITION TARGET	**INSIDE AIM RETICLE**
5. TGT LOCK/АВТ ЗАХВ BUTTON To lase target and measure range. The aim reticle will move to the calculated impact point for the range based on the selected ballistics regime.	**PRESS**

Launch

1. MANOEUVRE TO POSITION TARGET	**INSIDE AIM RETICLE**
2. PARAMETERS FOR LAUNCH	**CHECK**
3. WEAPONS RELEASE TRIGGER If using the 2A42 30mm cannon.	**RAISE** To uncover cannon trigger
4. CANNON/WEAPONS RELEASE TRIGGER	**PRESS and HOLD**

NOTE

The cannon aiming can also be done wholly manually using the stand-by reticle rather than laser range-finding. To do so, move the HUD mode switch to GRID/СЕТКА.

END

S-13 AND S-8 ROCKET AUTO-TRACKING EMPLOYMENT

Preparation

1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- LNG-MED-SHORT/ДЛ-СР-КОР SWITCH** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	**AUTO/ABT** **AS DESIRED** **PER POD PLACEMENT** **ON**

Short burst = 1 rocket/launcher; Medium = one quarter of stores; Long = half of rockets from each launcher.

2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH** **- A/A, A/A HO and MOV GND TGT/ВЦ, ППС and НПЦ BUTTONS**	**MOV/ППУ** **LAS/ИЗЛ** **ON** **ON PER TARGET TYPE**
3. UGM B / НП/АКС DIAL On back panel to select ballistics regime.	**AS REQUIRED**

0	S-8KOM AT/AP rockets	3	S-24 heavy rockets
1	S-8TsM smoke rockets	4	S-8M HE rockets
2	S-13 rockets	5	UKP-23 gun pods

4. TGT LOCK/ABT ЗАХВ BUTTON To ground stabilise Shkval. “ТГ” symbol will show on display.	**PRESS**
5. TARGET TRACKING GATE	**SLEW AND ADJUST**
6. TGT LOCK/ABT ЗАХВ BUTTON To lock target. “ТА” symbol will show on display; “ТА-ИД” (auto-tracking) symbol will show on HUD.	**PRESS**
7. AUTO TURN/АДВ BUTTON	**PRESS**
8. TRACKING GATE ON APPROACH	**ADJUST AS NEEDED**

Launch

1. MANOEUVRE TO POSITION TARGET	**INSIDE AIM RETICLE**
2. PARAMETERS FOR LAUNCH Within acceptable range, speed, and angle. “C” (launch permitted) symbol displayed on HUD.	**CHECK**
3. WEAPONS RELEASE TRIGGER	**LOWER**
4. WEAPONS RELEASE TRIGGER	**PRESS and HOLD**
5. TARGET MODE RESET/СБРОС BUTTON Once target is hit – cages Shkval sensor; resets tracking and weapon selection settings.	**PRESS**

NOTE

The rocket aiming can be overridden by setting the mode to MANUAL/РУЧН. In this mode, launch permission is granted even if launch parameters are not met.

END

S-13 AND S-8 ROCKET MANUAL EMPLOYMENT

Preparation

1. WEAPON MODES **- MAN–AUTO/РУЧН-АВТ MODE SWITCH** **- LNG-MED-SHORT/ДЛ-СР-КОР SWITCH** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	**MAN/РУЧН** **AS DESIRED** **PER POD PLACEMENT** **ON**

Short burst = 1 rocket/launcher; Medium = one quarter of stores; Long = half of rockets from each launcher.

2. TARGETING MODE **- CANNON/ОСН РЕЖ SELECTOR** **- LAS-OFF/ИЗЛ-ОТКЛ SWITCH** **- AT/AC SWITCH**	**FIX/НПУ** **OFF/ОТКЛ** **OFF**
3. UGM B / НП/АКС DIAL On back panel to select ballistics regime.	**AS REQUIRED**

0	S-8KOM AT/AP rockets	3	S-24 heavy rockets
1	S-8TsM smoke rockets	4	S-8M HE rockets
2	S-13 rockets	5	UKP-23 gun pods

4. MANOEUVRE TO POSITION TARGET	**INSIDE AIM RETICLE**
5. TGT LOCK/АВТ ЗАХВ BUTTON To lase target and measure range. The aim reticle will move to the calculated impact point for the range based on the selected ballistics regime.	**PRESS**

Launch

1. MANOEUVRE TO POSITION TARGET	**INSIDE AIM RETICLE**
2. PARAMETERS FOR LAUNCH	**CHECK**
3. WEAPONS RELEASE TRIGGER	**LOWER**
4. WEAPONS RELEASE TRIGGER	**PRESS and HOLD**

NOTE

The rocket aiming can also be done wholly manually using the stand-by reticle rather than laser range-finding. To do so, move the HUD mode switch to GRID/СЕТКА.

END

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

BOMB EMPLOYMENT

Preparation	1. **WEAPON MODES** **- HARDPOINTS** **- MASTER ARM/ГЛАВНЫЙ SWITCH**	**PER BOMB PLACEMENT** **ON**
	2. **CALCULATE RELEASE POINT**	**CHECK**
	3. **UGM B / НП/АКС DIAL** On back panel to select ballistics regime.	**AS REQUIRED**

7	FAB-250 bombs	9	KMGU-2 RT cluster bombs
8	FAB-500 bombs	10	KMGU-2 KO cluster bombs

Launch	1. **MANOEUVRE TO POSITION TARGET**	**INSIDE AIM RETICLE**
	2. **ALTITUDE >200m**	**CHECK**
	3. **PARAMETERS FOR LAUNCH**	**CHECK**
	4. **WEAPONS RELEASE TRIGGER**	**LOWER**
	5. **WEAPONS RELEASE TRIGGER**	**PRESS and HOLD**

END

EGRESS FROM TARGET AREA

Left, Front, Centre Panel	1. **TARGET MODE RESET/СБРОС BUTTON**	**PRESS**
	2. **RESET LA/СБРОС ЛДП BUTTON**	**PRESS**
	3. **STDBY-NORM/ЛДП-ЛД MODE SWITCH**	**NORM/ЛД and COVERED**
	4. **MASTER ARM/ГЛАВНЫЙ SWITCH**	**ON**
Overhead, Wall Panel	1. **CANNON/ППУ LIGHT OFF**	**CHECK**
	2. **NAV LIGHTS/АНО КОД**	**AS REQUIRED**
	3. **BLADE TIP LIGHTS/КОНТУР ОГНИ СВ**	**AS REQUIRED**

END

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

MENU / МЕНЮ

MENU / МЕНЮ

DATA / ДАНЫЕ

	DATE SETUP / ЧИСЛО: [DATE]
NAVIGATION DATA / НАВИГАЦИЯ	[DATE]-NO / НЕТ
TOPO DATA / ТОПОГРАФИЯ	[DATE]-NO / НЕТ
COMPANY ROUTES / КОМП. МАРШРУТЫ	[#] [DATE]-NO / НЕТ
ADDITIONAL INFO / ДОП. ИНФОРМАЦИЯ	[#] [DATE]-NO / НЕТ
TERRAIN DATA / РЕЛЬЕФ	[DATE]-NO / НЕТ
PERF / TTX	[DATE]-NO / НЕТ
ROUTES / МАРШРУТЫ	[#]-NO / НЕТ
METEO / METEO	[DATE]-NO / НЕТ
SEA CHARTS / МОРСКИЕ КАРТЫ	[#]-NO

NAV. SENSORS / НАВ. ДАТЧИКИ

GNSS / ГНСС	READY-NO / ГОТОВ-НЕТ
ALTIMETER / ВЫСОТОМЕР	READY-NO / ГОТОВ-НЕТ
RESOURCE / РЕСУРС	[#]
S/N / С/Н	[#]
VERSION S.W. / ВЕРСИЯ ПО	[#]

OPTION/ОПЦИИ	CTRL/УПРАВ	PLAN/ПЛАН	GNSS/СНС	NAV/НАВ

OPTION MENU / МЕНЮ ОПЦИЯ

OPTIONS > SETUP > MAIN / ОПЦИИ > УСТАН > ОСНОВН

OPTION / ОПЦИИ

MAIN / ОСНОВНЫЕ НАСТРОЙКИ

MAP MOTION / ДВИЖЕМОЕ КАРТЫ	**RELATIVE**-TRUE / **ОТНОСИТ**-ИСТИННОЕ
MAP ORIENTATION / ОРИЕНТАЦИЯ КАРТЫ	**HEADING**-TRACK-NORTH / **КУРС**-ПУ-СЕВЕР
MAP SCALE / МАСШТАБ	**USER**-AUTO / **ВРУЧНУЮ**-АВТО
TRACK/HEADING / НУ/КУРС	**TRUE**-MAG / **ИСТ**-МАГ
ALTITUDE / ВЫСОТА	**GNSS**-BARO-RADIO / **ГНСС**-БАРО-РАДИО
LOCAL TIME / ЧАСОВОЙ ПОЯС	[TIME ZONE]
TIME SETUP / ВРЕМЯ	[TIME]
DATE SETUP / ЧИСЛО	[DATE]
AFT START / ВРЕМЯ ПОЛЕТА	**AUTO**-USER / **АВТО**-ВРУЧНУЮ
FLIGHT RECORDER / САМОПИСЕЦ	1–(**5**)–60
WPT SEQUENCE / ВЫБОР ППМ	**AUTO**-USER / **АВТО**-ВРУЧНУЮ
STP PASSED / ПРОЛЕТ ППМ	0–(**5**)–10 КМ
XTE SCALE / ШКАЛА ЛБУ	
MIN	1-2-**5**-10-20 КМ
MAX	1-2-**5**-10-20 КМ
RMI1 / РМИ1	**ТО STP**-FROM STP-VOR-RADIO-OFF / **НА ППМ**-ОТ ППМ-VOR-АРК-ВЫКЛ
RMI2 / РМИ2	TO STP-FROM STP-VOR-**RADIO**-OFF / НА ППМ-ОТ ППМ-VOR-**АРК**-ВЫКЛ
RAIM THRSHLD / ПОРОГ RAIM	-99–(**100**)–999 М
SELECT THRSHLD / ВИБОР ПОРОГА	**AUTO**-USER / **АВТО**-ВРУЧНУЮ
CHECK PSEUDORANGE / УЧЕТ ПСЕВДОДАЛЬНОСТИ	**ON**-OFF / **ВКЛ**-ВЫКЛ

SETUP/УСТАН	\/	/\	CHANGE/СМЕНА	MENU/МЕНЮ

OPTION MENU / МЕНЮ ОПЦИЯ

OPTIONS > SETUP > UNITS / ОПЦИИ > УСТАН > ЕДИНИЦЫ

OPTION / ОПЦИИ

UNITS / ЕДИНИЦЫ

LATITUDE / ШИРОТА	__°__'__**"N/S**-__°__.__'N/S / __°__'__**"С/Ю**-__°__.__'С/Ю
LONGITUDE / ДОЛГОТА	___°__'__**"E/W**-___°__.__'E/W / ___°__'__**"В/З**-___°__.__'В/З
SPEED / СКОРОСТЬ	**КМН**-KNOTS-M/S / **КМ/Ч**-УЗЛ-М/С
RANGE / РАССТОЯНИЕ	**КМ**-AM-MM / **КМ**-АМ-ММ
ALTITUDE / ВЫСОТА	**М**-FT / **М**-ФТ
WEIGHT / ВЕС	**KG**-LB / **КГ**-ФНТ
ELLIPSOID / ЭЛЛИПСОИД	**KRASOVSKY**-WGS84 / **КРАСОВСКОГО**-WGS84

SETUP/УСТАН	\/	/\	CHANGE/СМЕНА	MENU/МЕНЮ

BP = Back Panel — CP = Centre Panel — FP = Front Panel — LP = Left panel — LWR = Laser Warning Receiver
OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

OPTION MENU
МЕНЮ ОПЦИЯ

OPTIONS > SETUP > PERF / ОПЦИИ > УСТАН > ТТХ
OPTION / ОПЦИИ
PERFORMANCE SETUP

SPEEDS AND BANKS / СКОРОСТИ И КРЕНЫ	
V1	0–(**120**)-350 KMH
V2	0–(**160**)–350 KMH
V4	0–(**120**)–350 KMH
V SPEED IN CLIMB / НАБОРА НОРМАЛЬНАЯ	0–(**130**)–350 KMH
V ECONOMIC SPEED IN CLIMB / НАБОРА МД	0–(**130**)–350 KMH
V CRUISING SPEED / КРЕЙС НОРМАЛЬНАЯ	0–(**200**)–350 KMH
V ECONOMIC SPEED / КРЕЙС МД	0–(**180**)–350 KMH
V SPEED IN DESCENT / СНИЖЕНИЯ НОРМАЛЬНАЯ	0–(**120**)–350 KMH
V ECONOMIC SPEED IN DESC. / СНИЖЕНИЯ МД	0–(**120**)–350 KMH
VY RATE OF CLIMB / НАБОР	0–(**5**)–50 M/S
VY RATE OF DESCENT / СНИЖЕНИЕ	0–(**4**)–50 M/S
ENROUTE BANK / КРЕН НА МАРШРУТЕ	0–(**15**)–60°
BANK ON APPROACH / КРЕН Б РА	0–(**15**)–60°
FUEL / ТОПЛИВО	
TAXI FUEL / РУЛЕНИЕ	0–(**20**)–100 KG
TAKEOF FUEL / ВЗЛЕТ	0–(**20**)–100 KG
CRUISE CONSUMPTION / ЭШЕЛОН РАСХОД НОРМ	0–(**786**)–1500 KG
ECONOMIC CONSUMPTION / ЭШЕЛОН РАСХОД МД	0–(**1000**)–1500 KG

SETUP/УСТАН	\/	/\	CHANGE/СМЕНА	MENU/МЕНЮ

OPTION MENU
МЕНЮ ОПЦИЯ

OPTIONS > SETUP > SIGNAL / ОПЦИИ > УСТАН > СИГНАЛ
OPTION / ОПЦИИ
ALARMS / СИГНАЛИЗАЦИЯ

APPROACH TO / ПОДХОД К	
WPT / ППМ	0–(**1**)–20 MIN
TOP-OF-CLIMB / ТОЧКА НАБОРА	0–(**1**)–20 MIN
TOP-OF-DESCENT / ТОЧКА СИНЖЕНИЯ	0–(**1**)–20 MIN
POINT OF TURN / ТОЧКА НАЧАЛА РАЗВ	0–(**1**)–20 MIN
FIR/UIR BOUNDARY / ГРАНИЦА РПИ	0–(**1**)–20 MIN
RESTRICTED / ГРАНИЦА ЗОРП	0–(**1**)–20 MIN
CONTROLLED / ГРАНИЦА ЩОНЫ УВД	0–(**1**)–20 MIN
LIMITS / ЛИМИТ	
XTE / ПО ЛБУ	0–(**1**)–20
CDI / ПО ПУ	0–(**20**)–90°

SETUP/УСТАН	\/	/\	CHANGE/СМЕНА	MENU/МЕНЮ

CTRL MENU
МЕНЮ УПРАВ

CTRL > SETUP > MSG / УПРАВ > УСТАН >СООБШЕН
CTRL / УПРАВЛЕНИЕ
MESSAGES / СООБШЕНИЯ

[MESSAGE]	[TIME]

SETUP/УСТАН	\/	/\	LAST/ПОСЛ	MENU/МЕНЮ

CTRL MENU
МЕНЮ УПРАВ

CTRL > SETUP > K-041 / УПРАВ > УСТАН > K-041
CTRL / УПРАВЛЕНИЕ
K-041

MODE / РЕЖИМ	**WORK**-CHECK
TIME OUT	[TIME]
LATITUDE / ШИРОТА	[LATITUDE]
LONGITUDE / ДОЛГОТА	[LONGITUDE]
HDNG / КУРС	[ANGLE]
TRK / ФПУ	[ANGLE]
SPEED / СКОРОСТЬ	[SPEED]

SETUP/УСТАН			CHANGE/СМЕНА	MENU/МЕНЮ

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

OPTION MENU / МЕНЮ ОПЦИЯ

OPTIONS > SETUP > CHARTS / ОПЦИИ > УСТАН > КАРТЫ

OPTION / ОПЦИИ

CHARTS SETUP / НАСТРОЙКА КАРТЫ

MAP / КАРТА	**SEL**-ALL-OFF / **ВИБ**-ВСЕ-ВЫКЛ
AIRPORTS / АЭРОДРОМЫ	+/-
RUNWAYS / ВПП	+/-
AIRPORT COMM / СВЯЗЬ АЭРОДРОМА	+/-
ILS	+/-
ILS MARKERS / ILS МАРКЕРЫ	+/-
TERMINAL NDB / NDB АЭРОДРОМА	+/-
VHF NAVAID / СРЕДСТВА ОВЧ	+/-
NDB	+/-
ENROUTE AIRWAYS / ВОЗДУШНЫЕ ТРАССЫ	+/-
FAN MARKERS / ВЕЕРНЫЕ МАРКЕРЫ	+/-
ENROUTE WAYPOINTS / ТРАССОВЫЕ ППМ	+/-
HOLDING PATTERNS / ЗОНЫ ОЖИДАЛИЯ	+/-
ENROUTE COMM / ЧАСТОТЫ СВЯЗИ	+/-
RESTRICTED AIRSPACE / ОГР. ВОЗДЫШНЫЕ ЗОНЫ	+/-
TACTICAL SITUATION / ТАКТИКА	+/-
POPULATION PLACES / НАС. ПУНКТЫ	+/-
LAKES / ОЗЕРА	+/-
RIVERS / РЕКИ	+/-
RAILWAYS / ЖЕЛ. ДОРОГИ	+/-
ROADS / ДОРОГИ	+/-
CABLE/PIPELINES / ЛИНИИ ЛЭП	+/-
TEXT / ТЕКСТ	+/-
LINE OBJECTS / ЛИНЕЙНЫЕ ОБЬЕКТЫ	+/-
ГЕО. СЕТКА	+/-
UTM СЕТКА	+/-

SETUP/УСТАН	∨	∧	CHANGE/СМЕНА	MENU/МЕНЮ

CTRL MENU / МЕНЮ УПРАВ

CTRL > SETUP > DTB / УПРАВ > УСТАН > БЗД

CTRL / УПРАВЛЕНИЕ

ONBOARD LOADER / БОРТОВОЙ ЗАГРУЗЧИК

NAVIGATION DATA / НАВИГАЦИЯ	[#]-NO / НЕТ
TOPO DATA / ТОПОГРАФИЯ	[#]-NO / НЕТ
COMPANY ROUTES / КАМП. МАРШРУТЫ	[#] [DATE]-NO / НЕТ
ADDITIONAL INFO / ДОП. ИНФОРМАТЦИЯ	[#] [DATE]-NO / НЕТ
TERRAIN DATA / РЕЛЬЕФ	[#]-NO / НЕТ
PERF / ТТХ	[DATE]-NO / НЕТ
ROUTES / МАРШРУТЫ	[#]-NO / НЕТ
METEO / METEO	[DATE]-NO / НЕТ
SEA CHARTS / МОРСКИЕ КАРТЫ	[DATE]-NO / НЕТ

ONBOARD STORAGE / БОРТОВОЙ НАКОПИТЕЛЬ

NAVIGATION DATA / НАВИГАЦИЯ	[DATE]
TOPO DATA / ТОПОГРАФИЯ	[DATE]
COMPANY ROUTES / КАМП. МАРШРУТЫ	[#] [DATE]
ADDITIONAL INFO / ДОП. ИНФОРМАТЦИЯ	[#] [DATE]
TERRAIN DATA / РЕЛЬЕФ	[DATE]
PERF / TTX	[DATE]
ROUTES / МАРШРУТЫ	[#]-NO / НЕТ
METEO / METEO	[DATE]
SEA CHARTS / МОРСКИЕ КАРТЫ	[#]-NO / НЕТ

SETUP/УСТАН		LOAD/ЗАГРУЗ	SAVE/СОХРАН	MENU/МЕНЮ
SETUP/УСТАН			COPY/КОПИР	MENU/МЕНЮ
SETUP/УСТАН	∨	∧	SAVE/СОХРАН	MENU/МЕНЮ

PLAN / ПЛАН

PLAN > SELECT > REVISE / ПЛАН > ВЫБРАТЬ > ВОЗВРАТ

PLAN / ПЛАН

TC / ЗИПУ	WIND / A°	TAS / V	DST / СППМ	ETA / ТППМ	FUEL / ОЧАС	ALT / H
TH / ИК	KMH / M/C	GS KMH / WM/C	REM KM / СОСТКМ	ETA / ТПРОЛ	REM / GOCT	T°C
TO / HA >[#]		[LATITUDE] [LONGITUDE]				
[ANGLE]	[ANGLE]	[#]	[#]	[TIME]		[#]
				[TIME]	[#]	
[ANGLE]	[ANGLE]	[#]	[#]			[#]

SELECT/ВЫБРАТЬ	EDIT/РЕДАКТ		ACTIV/АКТ	MENU/МЕНЮ

BP = Back Panel — CP = Centre Panel — FP = Front Panel — LP = Left panel — LWR = Laser Warning Receiver
OhP = Overhead Panel — RP = Right Panel — WP = Wall Panel

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

PLAN MEN. МЕН.ПЛАН

PLAN > SELECT > LOAD / ПЛАН > ВЫБРАТЬ > ЗАГР

PLAN / ПЛАН

LOAD ROUTE / ЗАГРУЗКА МАРШРУТА

[ROUTE]

	\/	/\	LOAD/ЗАГР	CANCEL/ОТМЕНА

PLAN MEN. МЕН.ПЛАН

PLAN > SELECT > SAVE / ПЛАН > ВЫБРАТЬ > ЗАПИСЬ

PLAN / ПЛАН

NAME OF ROUTE / ИМЯ МАРШРУТА

[ROUTE]

>	\/	/\	SAVE/ЗАПИСЬ	CANCEL/ОТМЕНА

PLAN ПЛАН

PLAN > SELECT > UNLOAD / ПЛАН > ВЫБРАТЬ > ОЧИСТ

PLAN / ПЛАН

SELECT/ВЫБРАТЬ	DRAW/РИСОВ		ACTIV/АКТ	MENU/МЕНЮ

PLAN MEN. МЕН.ПЛАН

PLAN > SELECT > DELETE / ПЛАН > ВЫБРАТЬ > УДАЛИТЬ

PLAN / ПЛАН

DELETE ROUTE / УДАЛЕНИЕ МАРШРУТА

[ROUTE]

	\/	/\	DELETE/УДАЛИТЬ	CANCEL/ОТМЕНА

PLAN MENU МЕНЮ ПЛАН

PLAN > SELECT > INVERT / ПЛАН > ВЫБРАТЬ > ИНВЕРТ

PLAN / ПЛАН

TC / ЗИПУ	WIND / A°	TAS / V	DST / СППМ	ETA / ТППМ	FUEL / QЧАС	ALT / H
TH / ИК	KMH / M/C	GS KMH / WM/C	REM KM / СОСТКМ	ETA / ТПРОЛ	REM / GOCT	T°C
TO / HA >[#]		[LATITUDE] [LONGITUDE]				
[ANGLE]	[ANGLE]	[#]	[#]	[TIME]		[#]
				[TIME]	[#]	
[ANGLE]	[ANGLE]	[#]	[#]			[#]

SELECT/ВЫБРАТЬ	EDIT/РЕДАКТ		ACTIV/АКТ	MENU/МЕНЮ

PLAN ПЛАН

PLAN > SELECT > SAR / ПЛАН > ВЫБРАТЬ > СЛМ

PLAN / ПЛАН

SELECT/ВЫБРАТЬ	DRAW/РИСОВ		ACTIV/АКТ	MENU/МЕНЮ

PLAN MENU МЕНЮ ПЛАН

PLAN > SELECT > ADD INF / ПЛАН > ВЫБРАТЬ > ДОП. ИНФ

ADD INF/ДОП. ИНФ | POINT / ТОЧКА

LAT / ШИР	[LATITUDE]
LON / ДОЛ	[LONGITUDE]
ALTITUDE / ВЫСОТА	[ALTITUDE]
MVR / СКЛ	[ANGLE]
NAME / ИМЯ | CALLSIGN / ПОЗЫВНОЙ	[POINT INFO]

ADD PNT/ДОБ.ТЧК	ADD LIN/ДОБ.ЛИН	SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН
	DELETE/УДАЛИТЬ	SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН

PLAN MENU МЕНЮ ПЛАН

ADD INF > ADD PNT > DIRECTLY / ДОП. ИНФ > ДОБ. ТЧК > НАПРЯМУЮ

POINT / ТОЧКА

NAME / ИМЯ	[NAME]
LAT / ШИР	[LATITUDE]
LON / ДОЛ	[LONGITUDE]
CALLSIGN / ПОЗЫВНОЙ	[CODE]
AIRPORT-NDB-LANDMARK-OBSTACLE-REFPOINT-VOR / АП-ОПРС-ГЕОТОЧКА-ПРЕПЯТСТВИЕ-ОРИЕНТИР-VOR	
BAND / ЧАСТОТА	[FREQUENCY]
ALTITUDE / ВЫСОТА	[ALTITUDE]

ENTER / ВВОД	MOVE / СДВИГ	>>	TYPE / ТИП	CANCEL/ОТМЕНА

PLAN MENU МЕНЮ ПЛАН

ADD INF > ADD PNT > RELATIVE / ДОП. ИНФ > ДОБ. ТЧК > ОТНОСИТ

POINT / ТОЧКА

NAME / ИМЯ	[NAME]
LAT / ШИР	[LATITUDE]
LON / ДОЛ	[LONGITUDE]
CALLSIGN / ПОЗЫВНОЙ	[CODE]
AIRPORT-NDB-LANDMARK-OBSTACLE-REFPOINT-VOR / АП-ОПРС-ГЕОТОЧКА-ПРЕПЯТСТВИЕ-ОРИЕНТИР-VOR	
BAND / ЧАСТОТА	[FREQUENCY]
ALTITUDE / ВЫСОТА	[ALTITUDE]
WPT / ППМ	[#]
BEARING / АЗИМУТ	[#]
RANGE / ДАЛЬНОСТЬ	[#]

ENTER / ВВОД	SEARCH / ПОИСК	>>	TYPE / ТИП	CANCEL/ОТМЕНА

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

PLAN MENU / МЕНЮ ПЛАН

ADD INF > ADD LIN / ДОП. ИНФ > ДОБ.ЛИН

LINE / ЛИНИЯ

LAT / ШИР	[LATITUDE]
LON / ДОЛ	[LONGITUDE]
ALTITUDE / ВЫСОТА	[ALTITUDE]
MVR / СКЛ	[ANGLE]
RANGE / РАССТОЯНИЕ	[RANGE]
BEARING / АЗИМУТ	[ANGLE]
OPPOSITE / ОБРАТНЫЙ	[ANGLE]

ENTER / ВВОД	COLOR / ЦВЕТ	SCALE+/МСШТБ+	SCALE-/МСШТБ-	CANCEL/ОТМЕНА

PLAN MENU / МЕНЮ ПЛАН

PLAN > EDIT > DRAW / ПЛАН > РЕДАКТ > РИСОВ

PLAN / ПЛАН

[#] [NAME]	FBY-OVR-FIN / ТНП-ТОП-ТЗП	MVR / СКЛ	[#]	[LATITUDE]
	TCA / ИПУ [ANGLE]	TH / ИК	[ANGLE]	[LONGITUDE] DIST / РСТ [DISTANCE]
EDIT/РЕДАКТ	DELETE/УДАЛИТЬ	SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН
ADD/ДОБАВ		SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН
ENTER/ВВОД	MOVE/СДВИГ	>>	SEARCH/ПОИСК	CANCEL/ОТМЕНА

PLAN MEN. / МЕН.ПЛАН

PLAN > EDIT > SPEED / ПЛАН > РЕДАКТ > СКОР

PLAN / ПЛАН

	TAS / ИВС	DIST / РСТ	TENR / ТУЧ	ETA / ТППМ
[#] [NAME]	[#]	[#]	[TIME]	[TIME]
EDIT/РЕДАКТ		SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН

PLAN MEN. / МЕН.ПЛАН

PLAN > EDIT > VNAV / ПЛАН > РЕДАКТ > ВНАВ

PLAN / ПЛАН

	S	ALT / H	VY	
[#] [NAME]	[#] @	[#]	[#[	
EDIT/РЕДАКТ	CLEAR/ОЧИСТКА	SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН

PLAN MEN. / МЕН.ПЛАН

PLAN > EDIT > METEO / ПЛАН > РЕДАКТ > METEO

PLAN / ПЛАН

	WIND DIR/VEL / ВЕТЕР	T°C		
[#] [NAME]	[ANGLE]° / [#] KMH	[#]	[TIME]	
EDIT/РЕДАКТ		SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН

PLAN MEN. / МЕН.ПЛАН

PLAN > EDIT > FUEL / ПЛАН > РЕДАКТ > ТОПЛИВО

PLAN / ПЛАН

	REM / GOCT	FUEL / QЧАС	TENR / ТУЧ	
[#] [NAME]	[#]	[#]	[TIME]	
EDIT/РЕДАКТ		SCALE+/МСШТБ+	SCALE-/МСШТБ-	PLAN/ПЛАН

GNSS / СНС

GNSS / СНС

GNSS INFORMATION / ИНФОРМАЦИЯ ГНСС

SENSOR / ДАТЧИК	[ID]
LAST FIX / ПОСЛ ВРМ	[TIME]
POS / ПОЗ	[LAT/LONG]
ALT / ВЫС	[ALTITUDE]
GS / ПС	[SPEED]
TRK / ФПУ	[ANGLE]
PREC HOR / ТОЧН ГОР	[DISTANCE]
PREC VER / ТОЧН ВЕР	[DISTANCE]
PDOP	[#]
HDOP	[#]
VDOP	[#]
TDOP	[#]
SYSTEM / СИСТЕМА	[ID]
SV TRACK / КА СЛЕЖ	[#]
USE / ИСП	[#]
RAIM	[#]
OK / ХОРОШО	USER-AUTO / МАРШР-ВРУЧНУЮ

MENU/МЕНЮ	USER/РУЧН	CALC/РАСЧ	SYST/СИСТ	NAV/НАВ

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

GNSS MENU
МЕНЮ СНС

GNSS > CALC / СНС > РАСЧ
CALC / РАСЧ
GNSS INFORMATION / ИНФОРМАЦИЯ ГНСС

SENSOR / ДАТЧИК	[ID]
LAST FIX / ПОСЛ ВРМ	[TIME]
POS / ПОЗ	[LAT/LONG]
ALT / ВЫС	[ALTITUDE]
GS / ПС	[SPEED]
TRK / ФПУ	[ANGLE]
PREC HOR / ТОЧН ГОР	[DISTANCE]
PREC VER / ТОЧН ВЕР	[DISTANCE]
PDOP	[#]
HDOP	[#]
VDOP	[#]
TDOP	[#]
SYSTEM / СИСТЕМА	[ID]
SV TRACK / КА СЛЕЖ	[#]
USE / ИСП	[#]
DESTINATION AIRDROME / АЭРОДРОМ НАЗНАЧЕНИЯ	[NAME]
ETA / ВРЕМЯ ПРИБЫТИЯ	[TIME]
POS / ПОЗ	[LAT/LONG]
PRAIM ETA	[TIME DIFF.]

MENU/МЕНЮ	GNSS/СНС	>>	ENTER/ВВОД	NAV/НАВ

GNSS MENU
МЕНЮ СНС

GNSS > SYST / СНС > СИСТ
SYST / СИСТ
MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

FLASH 988 MB / РПЗУ 988МБ	**NAV SENSOR / НАВ.ДАТЧИК**
[#]	**POWER / БЛОК ЭП**
RAM 2048MB / ОЗУ 2048МБ	**RS**
[#]	**ANALOG / ЦАП**
	1234
	DIGITAL / АЦП
	12345
	ARINC
	TX RX
	0 0
	1 1
	2 2
	3 3
1 2 3 4 5	ARINC-429
	X-PCB
RESOURCE / РЕСУРС	[#]
S/N / С/Н	[#]
VERSION SW / ВЕРСИЯ ПО	[#]

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > ARINC / СНС > СИСТ > УСТ > ARINC
SYST / СИСТ
MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > RS-232 / СНС > СИСТ > УСТ > RS-232
SYST / СИСТ
MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > ANALOG / СНС > СИСТ > УСТ > ЦАП
SYST / СИСТ
MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > DIGITAL / СНС > СИСТ > УСТ > АЦП
SYST / СИСТ
MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

GNSS MENU
МЕНЮ СНС

GNSS > SYST > SETUP > BUILT / СНС > СИСТ > УСТ > ВСТРОЕН

SYST/СИСТ

BUILT-IN SENSOR SETUP

SENSOR / ДАТЧИК	ASHTECH GG12
COM PORT / ПОРТ	BUILT
BAUD RATE / СКОРОСТЬ БОД	1200-2400-4800-9600-**19200**-3844-57600-115200
DATA BITS / БИТЫ ДАННЫХ	4-5-6-7-**8**
PARITY / ЧЕТНОСТЬ	**NO**-ЧЕТ-НЕЧЕТ-MARKER-ПРОБЕЛ / **НЕТ**-ЧЕТ-НЕЧЕТ-MARKER-ПРОБЕЛ
STOP BITS / СТОП БИТ	**1.0**-1.5-2.0
FLOW CONTROL / КОНТРОЛЬ	**HARDWARE**-XON/XOFF-NO / **АППАРАТНОЕ**-XON/XOFF-НЕТ
SYSTEM / ИСП ГПС	**GPS/GLONASS**-GPS / **GPS/ГЛОНАСС**-GPS
PDOP MASK / МАСКА PDOP	[**4.0**]
ELEV MASK / МАСКА ВОЗВ	[**5**]°
EXCLUDE SV / ИСКЛЮЧИТЬ КА	[**0**]
SAVE & TEST / СОХР И ТЕСТ	-

SETUP/УСТ	\/	/\	CHANGE/СМЕНА	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > AUDIO / СНС > СИСТ > УСТ > АУДИО

SYST / СИСТ

MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > D/C / СНС > СИСТ > УСТ > РК

SYST / СИСТ

MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > TEST / СНС > СИСТ > УСТ > ТЕСТ

SYST / СИСТ

MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > LOG / СНС > СИСТ > УСТ > ТРАССА

SYST / СИСТ

MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

GNSS
СНС

GNSS > SYST > SETUP > SOFT / СНС > СИСТ > УСТ > ПО

SYST / СИСТ

MAIN CPU-YES / ОСН. ПРОЦЕССОР-ДА

SETUP/УСТ	GNSS/ГНСС		TEST/ТЕСТ	NAV/НАВ

NAV
НАВ

NAV / НАВ

TRK/ФЮУ [#]° T

GS / ПС	[#] КМН	TO / НА	[ID]	[ID]
BRG / ПНГ	[#] °	DTA / ЗПУ	[#] °	[#] °
AFT / T	[TIME]	DST / РСТ	[#] KM	[#] KM
ALT / ВЫС	[#]	ETA / ТППМ	[TIME]	[TIME]
	[LATITUDE]		[TIME]	
	[LONGITUDE]			

SEARCH/ПОИСК	MAP/КАРТА	FPL/ШБЖ	SUSP/РУЧН	ARC/ОБЗОР

NAV MENU
МЕНЮ НАВ

NAV > SEARCH > AIRPORT / НАВ > ПОИСК > АЭРОДРОМ

SEARCH / ПОИСК

/\ \/ NEAREST AIRPORTS / БЛИЖАЙШИЕ АЭРОДРОМЫ

[#]	[NAME]		[ANGLE] ° T
	[ALTITUDE]	CIVIL-MIL / ГРАЖД-ВОЕН	[DISTANCE]
	RUNWAYS / ВПП [LENGTH]		

SEARCH/ПОИСК	TO/НА	INFO/ИНФО	NAME/ИМЯ	NAV/НАВ

NAV MENU
МЕНЮ НАВ

NAV > SEARCH > VOR / НАВ > ПОИСК > VOR

SEARCH / ПОИСК

/\ \/ NEAREST VOR / БЛИЖАЙШИЕ VOR

[#]	[NAME]		[ANGLE] ° T
	D [FREQUENCY]	[CODE] VOR	[DISTANCE]
	(L) [MORSE SIGNAL]		

SEARCH/ПОИСК	TO/НА	INFO/ИНФО	NAME/ИМЯ	NAV/НАВ

NAV MENU
МЕНЮ НАВ

NAV > SEARCH > NDB / НАВ > ПОИСК > ОПРС

SEARCH / ПОИСК

/\ \/ NEAREST NDB / БЛИЖАЙШИЕ ОПРС

[#]	[NAME]		[ANGLE] ° T
	D [FREQUENCY]	[CODE]	[DISTANCE]
	(L) [MORSE SIGNAL]		

SEARCH/ПОИСК	TO/НА	INFO/ИНФО	NAME/ИМЯ	NAV/НАВ

NORMAL STEP	FULL PROCEDURE STEP	CONDITIONAL STEP	NON-FUNCTIONAL STEP

ABRIS PAGE TRANSLATIONS

NAV MENU / МЕНЮ НАВ

NAV > SEARCH > WPT / НАВ > ПОИСК > ППМ

SEARCH / ПОИСК

/\ \/ NEAREST WPT / БЛИЖАЙШИЕ ППМ

[#]	[NAME] INT-REFPOINT	[ANGLE] ° T [DISTANCE]

SEARCH/ПОИСК	TO/НА	INFO/ИНФО	NAME/ИМЯ	NAV/НАВ

NAV MENU / МЕНЮ НАВ

NAV > SEARCH > TOWN / НАВ > ПОИСК > ГОРОД

SEARCH / ПОИСК

/\ \/ NEAREST TOWN / БЛИЖАЙШИЕ ГОРОДА

[#] [NAME]

SEARCH/ПОИСК	TO/НА	INFO/ИНФО	NAME/ИМЯ	NAV/НАВ

NAV MENU / МЕНЮ НАВ

MAP / КАРТА

TRK/ФЮУ [#]° T

GS / ПС	[#] KMH	TO / НА	[ID]	[ID]
BRG / ПНГ	[#] °	DTA / ЗПУ	[#] °	[#] °
AFT / T	[TIME]	DST / РСТ	[#] KM	[#] KM
ALT / ВЫС	[#]	ETA / ТППМ	[TIME]	[TIME]
	[LATITUDE]		[TIME]	
	[LONGITUDE]			

INFO/ИНФО	ERBL/МЕРИТЬ	SCALE+/МСШТБ+	SCALE-/МСШТБ-	NAV/НАВ

NAV MENU / МЕНЮ НАВ

NAV > MAP > ERBL / НАВ > КАРТА > МЕРИТЬ

MAP / КАРТА

TRK / ФПУ	[ANGLE] °	ERB	[LATITUDE] [LONGITUDE]
GS / ПС	[#] KMH	BRG	[ANGLE] ° / [ANGLE) °
BRG / ПНГ	[ANGLE] °	DST	[#]
AFT / T	[TIME]	ALT / БЫС	[#]
ALT / БЫС	[#] M	MVR / ЦКЛ	[ANGLE] °

INFO/ИНФО	MARKER/МАРКЕР	SCALE+/МСШТБ+	SCALE-/МСШТБ-	NAV/НАВ

NAV MENU / МЕНЮ НАВ

NAV > FPL / НАВ > ШБЖ

FPL / ШБЖ

[NAME]

TC / ЗИПУ	WIND / A°	TAS / V	DST / SППМ		ETA / ТППМ	FUEL / QЧАС	ALT / H
TH / ИК	KMH / KM/Ч	GS KMH / WKM/Ч	REM KM / SOCTKM		ETA / ТПРОЛ	REM / GOCT	T°C
> OT [#] [NAME]		[LATITUDE] [LONGITUDE]					
[ANGLE]	[ANGLE]	[#]	[#]	[TIME]		[#]	
				[TIME]	[#]		
[ANGLE]	[ANGLE]	[#]	[#]			[#]	
TO / HA> [#] [NAME]		[LATITUDE] [LONGITUDE]					
REM /SOCT	[#] KM ETE	[TIME]	FUEL	[#] KG			

VNAV/ВНАВ	TO/НА		WPT/ППМ	NAV/НАВ

PLAN MEN. / МЕН.ПЛАН

NAV > FPL > VNAV / НАВ > ШБЖ > ВНАВ

VNAV / ВНАВ

	S	ALT / H	VY
[#] [NAME]	[#] @	[#]	[#[

EDIT/РЕДАКТ	VNAV TO/ВНАВ НА	TGT VS/ЗАД ВУ	ACTIV/АКТ	NAV/НАВ

ARC / HSI / ОБРОЗ / ПНП

ARC / ОБРОЗ and HSI / ПНП

TRK/ФЮУ [#]° T

[ANGLE] ° TO STP / НА ППМ — VNAV / ВНАВ

[ANGLE] ° RADIO / АРК — [SCALE]

GS / ПС	[#] KMH	TO / НА	[ID]	[ID]
BRG / ПНГ	[#] °	DTA / ЗПУ	[#] °	[#] °
AFT / T	[TIME]	DST / РСТ	[#] KM	[#] KM
ALT / ВЫС	[#]	ETA / ТППМ	[TIME]	[TIME]
	[LATITUDE]		[TIME]	
	[LONGITUDE]			

SEARCH/ПОИСК	MAP/КАРТА	FPL/ШБЖ	SUSP/РУЧН	HSI/ПНП
SEARCH/ПОИСК	MAP/КАРТА	FPL/ШБЖ	SUSP/РУЧН	MENU/МЕНЮ