RUSSIAN SEGMENT OPERATIONS

2A.2B FLIGHT

Version 1

2000
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For notes
INTRODUCTION

Sections from 1 to 13 have been developed by RSC-E, step 3.7 have been developed by NASA.

Russian Segment Operations book contains crew procedures for RS onboard systems operation, subject to activation and subsequent deactivation during flight 2A.2B.

The book is intended for fully-trained crewmembers.

This document may change pending systems modification and procedure validation at simulators and training facilities.

USED ABBREVIATIONS

АК - air sampling adsorber  
AZC - circuit breaker  
AC - USOS  
6/н - crew (flight) procedure, checklist  
БМП - micropurification unit  
БП - vestibule  
ВД - air duct  
ВКЛ - activate, ON  
ВН - air heater  
ГА - pressurized adapter  
ДДИ - induction pressure sensor  
Дна3 - report to MCC  
ДС-7А - Signal-VM smoke detector  
загл - cap  
ЗАКР - close, closed  
ЗвП ВЧ - high-pitch warble  
ЗвП НЧ - low-pitch warble  
ИПК - gas mask  
КВД - pressure equalization valve  
клав - push button  
КРЛ - command radio link  
ККТ - pressure monitoring valve  
МВ - pressure gauge  
н/с - off-nominal situation  
ОСН - primary, main  
ОСП - backpack fire extinguisher  
ОТКЛ - deactivate, OFF  
ОТКР - open, opened  
п - flight procedure step  
пан - panel  
ПГО - instrumentation cargo compartment  
пл - plane  
поУЗ - On MCC GO  
ППС - system power panel  
пров - verify  
ПУС - Signal-VM control panel  
ПСС - caution and warning panel  
р/г - radiogram  
рез - reserve, backup
рис - figure
РС - Russian segment
СвД - LED, light-emitting diode
см. - see for reference
СМВ - intermodule ventilation system
СУ - docking unit
СУИ - inventory management system
tмб - switch, sw
ФВП - harmful contaminant filter
ЦВ - circulation fan
ЦП - central post (in SM)
ЦУП-М - МСС-Moscow
ЦУП-Х - МСС-Houston
ЩО - lighting panel
шт. - quantity in pieces
IMS - inventory database management system
USED SYMBOLS

- illuminated
- not illuminated
- blinking
- check (in case of discrepancy, attempt a corrective action one time only)
- place physical device in designated state
- disconnect
- connect
- off-nominal situation

SYMBOLS FOR IMS

mouse left double click
mouse left click
mouse right click
verify
press button or key
simultaneously press Alt and F4 keys
on the toolbar
alternative procedures
1. GENERAL INFORMATION

1.1. CREW RESPONSIBILITIES

While performing operations, the crew is responsible for the following actions:

1. Perform operations per these crew procedures and MCC-M instructions (comm passes and radiograms), in accordance with the crew functional responsibilities and current status of the onboard systems.

2. Monitor systems operation per these crew procedures and MCC-M instructions.

3. Prior to operations, perform indicator checks on the control panels to be used.

4. Report to MCC, MCC-H → MCC-M completed operations and any system problems at earliest available comm pass.

5. When working with hardware (panels, cables, etc.) equipped with protective caps and covers:
   - remove caps and covers before operations;
   - re-install caps and covers after operations.

6. Daily update the onboard IMS database and upload the Delta files to MCC-M.

1.2. SAFETY PRECAUTIONS

To ensure nominal systems operation and crew safety, the crew is responsible for the following actions:

- when working with the system, use only hardware, tools, and protective devices designated by the crew procedures or by MCC-M;
- avoid any cable, hoses and air ducts kinks;
- prior to hatch closing, make sure there are no foreign objects in the hatchways;
- upon detection of an off-nominal situation, not documented in these crew procedures, the crew is responsible for the following actions:
  - stop working with the system (deactivate the system);
  - record time when the off-nominal situation was detected;
  - record nature of the off-nominal situation;
  - report to MCC. MCC-H → MCC-M at earliest available comm pass.
2. FGB INGRESS

TOOLS AND EQUIPMENT REQUIRED:
- flashlight
- hatch tool 11Ф732.Г1021-0А (from docking mechanism accessory kit 33У 9962.003)
- screwdriver and 8 mm, 10 mm, 12 mm ratchet wrenches
- wire cutters
- “Return to Houston” bag
- trash bag
- aspirator AM-5 and kits 305, 306 with AK-1 adsorber for air sample collection

2.1. ГА-PMA1 HATCH OPENING

(On MCC-M GO) (00:05:00)
Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR
00:00:00 Rotate hatch tool in the direction of arrow OPEN until it clicks
(3-4 turns)
00:03:00 Open hatch and secure it in the open position
Install protective cover 33У 9936.021 on hatch
(unstow protective cover from bag 33У 9936.022, tethered to hatch handle)
Stow hatch tool in kit and tether kit to hatch handle

√ КВД ГА-NODE1 — ELECTRIC
КВД ГА-ТК → CLOSED

Report to MCC. MCC-H $$ MCC-M$$

2.2. ГА LIGHTING ACTIVATION

(see Figure 2.2) (00:02:00)

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<td>1. GENERAL AUX lights can be activated only after activation of corresponding GENERAL MAIN lights.</td>
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<td>2. Switches №-5 on ЩО-ЛО are not wired.</td>
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<td>3. Burnout of GENERAL MAIN light does not affect operation of corresponding GENERAL AUX light.</td>
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Plane IV  
ЩО-ЛО  
GENERAL MAIN
sw 1,2,3,4-Л1 (four) → On  
■ LED D1,2,3,4 (four)

GENERAL AUX (at crew preference)
sw 1(2,3,4)-Л2 → On  
■ LED Д6 (7,8,9)
Figure 2.2. FGB Lighting Fixture Locations.
2.3. ПГО-ГА HATCH OPENING

(On MCC-M GO) (00:02:00)

КВД ГА-ПГО → OPEN

Wait for hissing to stop (pressure equalization time \( \leq 10 \) min)

Rotate hatch handle in the direction of arrow ОТКРЫТИЕ (Open) to stop
Open hatch until it is secured in the open position

КВД ГА-ПГО → CLOSE

\( \sqrt{\text{КВД ПГО-ГА} \rightarrow \text{ELECTRIC}} \)

Report to MCC. *MCC-H \( \Rightarrow \) MCC-M*

2.4. ПГО LIGHTING ACTIVATION

414,430 GENERAL MAIN

ЩО-ЛО sw 1,2,3,4-Л1 (four) \( \rightarrow \) On

■ LED Д1,2,3,4 (four)

GENERAL AUX (at crew preference)

sw 1(2,3,4)-Л2 \( \rightarrow \) On

■ LED Д6 (7,8,9)

2.5. AIR SAMPLE COLLECTION IN FGB

(00:10:00)

![Diagram of Air Sample Collector](image)

1 – AK-1 Adsorber Housing
2 – AK-1 Cap
3 – Lanyard
4 – AM-5 Aspirator Bellows
5 – Aspirator Bottom Cover
6 – Chain
7 – AM-5 Aspirator Pipe

Figure 2.5. Air Sample Collector.

1. AM-5 ASPIRATOR LEAK CHECK

00:00:00 Compress and hold aspirator bellows, close aspirator pipe with finger tip, release bellows

00:02:00 If aspirator bellows becomes fully expanded (chains are tight):

Aspirator leaks
Report to MCC. *MCC-H \( \Rightarrow \) MCC-M*

If aspirator bellows remains compressed (chains are loose):

Aspirator does not leak
Remove finger tip from aspirator pipe
2. AIR SAMPLE COLLECTION

Unstow adsorber from kit 310 pocket
Unscrew caps (two)
Insert adsorber tip into aspirator pipe (in the direction of arrow)

ПГО
Air sample collection:
Compress aspirator bellows completely and release
Verify bellows is fully expanded (chains are tight)

Repeat 4 more times

Disconnect adsorber from aspirator and promptly re-install caps (two)

Stow adsorber in kit 310 pocket
Label kit pocket with date, time and place of air sample collection

Repeat actions with second adsorber

Report to MCC. MCC-H ⇒ MCC-M

2.6. US AIR SAMPLE COLLECTION IN FGB

(00:10:00)
Collect one air sample inside the FGB using USP Grab Sample Container
Label location and MET on bottle
Stow in the Ingress Equipment Bag
Take three (3) CO2 readings in FGB (forward, mid-axis and aft) using Portable CO2 Monitor
Record CO2 Readings in Logbook and report readings to MCC. MCC-H ⇒ MCC-M
Take three (3) Humidity readings in FGB (forward, mid-axis and aft) using Air Velocity Meter
Report readings to MCC. MCC-H ⇒ MCC-M

2.7. ПГО-ГА HATCH FRAME RING INSTALLATION

(00:05:00)
402 Remove hatch frame ring from storage location and unfold
Attach hatch frame ring brackets to hatch mounting pins
Lower hatch frame ring and rotate hatch handle in the direction of arrow
ЗАКРЫТИЕ (Close) to stop
Report to MCC. MCC-H ⇒ MCC-M
2.8. AIR DUCT (ВД1, ВД2) INSTALLATION

(01:30:00)

2.8.1. ВД2 AIR DUCT INSTALLATION

1. PREPARATION

Unstow mufflers:

Behind 202

Ч-И-4, Ч-II-3, Ч-ЦВ2

2. MUFFLERS INSTALLATION ONTO ВД2 AIRDUCT SEGMENTS

(see Figure 2.8-1)

**CAUTION**

1. Avoid overcompressing airduct during muffler installation.
2. Avoid ВД2 kinking during routing.

1. Segment 50 to segment 100
2. Mate Ч-И-4 and Ч-II-3 mufflers and wrap around stretched segment 50
   (cutout in muffler Ч-II-3 must be aligned with rigid segment 100 latch)
3. Assemble ВД2 air duct per installation diagram (see Figure 2.8-3):
   segment 50 with mufflers must be secured using fixers (if necessary, attach two fixers to one another);
   segment 130 must be secured with Velcro
4. Install Ч-ЦВ2 muffler onto ЦВ-2 fan (covering the open portion of segment 50)

Report to МСС. МСС-Н ⇒ МСС-М

Figure 2.8-1. ВД2 Muffler Installation Locations.
2.8.2. AIR DUCT ВД1 INSTALLATION FROM NODE1 SIDE

1. Unstow mufflers:
   Ч-I-2 (one), Ч-II-2 (three), Ч-ЦВ1

2. Segment 01 →І→ segment 340
   Segment 01 →І→ 02 (if previously demated)

   **CAUTION**

   1. Avoid overcompressing airduct during muffler installation.
   2. Avoid ВД2 kinking during routing.

3. Mate mufflers Ч-II-2 (three) with each other and wrap around stretched ВД1 airduct assembly (starting with segment 340 towards NODE1)
   (see Figure 2.8-2)

4. Install muffler Ч-I-2 (with overlap) on the stretched ВД1 airduct assembly

5. Assemble ВД1 airduct (see Figure 2.8-3) and secure it to frame or to segment 130 using fixers (if necessary, attach two fixers to one another)

6. Install Ч-ЦВ1 muffler onto ЦВ-1 fan

   **PMA1**

7. PMA-1 rigid airduct → Closed

   Report to **MCC.**  **MCC-H ⇒ MCC-M**

---

**Figure 2.8-2. ВД1 Muffler Installation Locations.**
1. When working with ВД1 hinged duct, ensure integrity of ЦВ1 electrical cables and connectors.

2. Do not kink flexible air duct segments during installation. Inward bend radius must not be less than 2 diameters of air duct.

**LEGEND**

- Flexible air duct section. Lettering on air duct = labeling.
- Rigid air duct section. Lettering on air duct = labeling.
- Connected using cord.
- Quick disconnect interface
- Connected using Velcro

*Outlined in red* – emergency disconnect interface

- Fan
- Air flow direction

**CAUTION**

- During air duct installation, rotate toward hatchway
- ВД2 – hinged duct mounting interface uses two bolts (S=8)
- During air duct installation, rotate into working position
- Secure in hatchway between planes II и III
- ВД2 – hinged duct installation, connect to NODE1 air duct to NODE1 air duct

**Figure 2.8-3. ВД1 and ВД2 Air Duct Installation in ПГО-ГА Area (mufflers are not shown).**
2.8.3. **БД1 AIR DUCT PREPARATION FOR SM SIDE**

430 Unstow БД1 FGB-SM segment (77КМ-7660-260) from container 77КМ-7660-280

425, 426 Prepare FGB, SM rigid segments (77КМ-7660-150)
Release rigid segment (two) by removing 2 clamps from each side
(secured with bolts (two) S=8)
Discard clamps

Assemble БД1 air duct from SM side per installation schematic
(see Figure 2.8-4). Secure FGB-SM segment assembly along installation route with Velcro after ПГО-СУ and ПхО-СУ hatch opening

Report to **MCC. MCC-H ⇒ MCC-M**

**CAUTION**

During БД air duct installation do not allow kinks. БД air duct bend internal radius is not less than two diameters.

Figure 2.8-4. БД1 Air Duct Installation Schematic in ПГО-СУ Hatch Area.
2.9. US FIRE EXTINGUISHER TRANSFER FROM FGB TO NODE1

103, double bag Retrieve NODE-1 Fire Extinguisher from FGB Stowage location and place in NODE-1 PFE locker

2.10. HARMFUL CONTAMINANT FILTER (ΦВП) CARTRIDGE REPLACEMENT (on MCC-M GO) (00:10:00)

**WARNING**

ΦВП fan deactivation must be completed prior to filter changeout.

Retrieve new ΦВП cartridge (delivered by Orbiter)

Behind 411 Remove spent ΦВП cartridge

  Unscrew four winged screws
  Release and rotate away four clamps
  Remove replaceable cartridge from ΦВП by pulling it until guide pin is released from slot

Install new replaceable cartridge

  Retrieve new cartridge from plastic bag
  Orient with rubber seal towards ΦВП and install it so that ΦВП guide pin is fully seated into central slot on the replaceable cartridge

  Re-engage four clamps
  Tighten four winged screws to the stop

Discard spent cartridge (place in plastic bag from new cartridge)

Report to **MCC. MCC-H ➔ MCC-M**
2.11. BACTERIAL AND FUNGAL GROWTH IN FGB — IDENTIFICATION AND COUNTERMEASURES

(01:30:00)

Signs of microorganisms:
- smell;
- blooms of different colors;
- corrosion and caverns on metal;
- moisture spots

2.11.1. MICROORGANISM GROWTH IDENTIFICATION STEPS

1. Visually inspect hardware, cargo (see Sect. 2.11.2)

   NOTE
   If crew identifies any areas with microorganism growth during visual inspection of FGB interior or during operations in locations not specified in Sect. 2.11.2, go to step 2.

2. Photograph or film areas with microorganism growth using photo and video cameras

3. Collect microorganism samples into test tubes (see Sect. 2.11.3)

4. Determine the size of microorganism growth area(s)

   NOTE
   If during inspection no microorganisms were found, collect samples using test tubes. Treatment with FUNGISTAT solution and repeated sample collection is not required.

5. Treat the microorganism growth area(s) with Fungistat solution (see Sect. 2.11.4)

6. Repeat microorganism sample collection into test tubes (see Sect. 2.11.3) and then treat the microorganism growth area(s) with Fungistat solution (see Sect. 2.11.4)

Report to MCC. MCC-H => MCC-M
2.11.2. LIST OF ITEMS TO INSPECT

1. STOWAGE BAGS INTERIOR AND EXTERIOR INSPECTION

<table>
<thead>
<tr>
<th>Location</th>
<th>Equipment to inspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>104 (closer to 107 from SS4 instrument side)</td>
<td>Bag with ММД item (single)</td>
</tr>
<tr>
<td>109 (from 218 side)</td>
<td>Bag with APO5 VOLTAGE/CURR STAB item (single)</td>
</tr>
<tr>
<td>107</td>
<td>Bag with ASK item (triple)</td>
</tr>
<tr>
<td>behind 303 (access via 304)</td>
<td>Any bag</td>
</tr>
<tr>
<td>behind 405 (from surface facing plane I)</td>
<td>Bag with SFO5 ECOSPHERE item</td>
</tr>
</tbody>
</table>

2. PANEL CELL INSPECTION

<table>
<thead>
<tr>
<th>Location</th>
<th>Equipment to inspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>behind 405 (closer to plane I)</td>
<td>behind air duct or on it</td>
</tr>
<tr>
<td>behind 304</td>
<td>on assembly or cable harnesses</td>
</tr>
<tr>
<td>behind 418</td>
<td>on assembly</td>
</tr>
</tbody>
</table>

2.11.3. SAMPLE COLLECTION USING KIT WITH TEST TUBES

Orbiter

1. Unstow kit with test tubes

2. Unfold kit cover, secure it in working area using Velcro

   CAUTION

   Do not touch capillary tube and cotton swab with hands.

3. Obtain test tube from the pocket, unscrew cap with capillary tube and cotton swab

4. Perform microflora sample collection:
   clean surface of 10x10 cm, turning swab around cover

5. Insert used cotton swab into test tube, without touching the edges of the tube, and screw the cap back on to stop

6. Stow the test tube into kit pocket, record sample collection location on attached label tab.

Orbiter

Stow kit in nominal storage location for return
2.11.4. FUNGISTAT SET OPERATION

One package is intended for treatment of 1.5 sq. m.

Orbiter Prepare:
- scissors
- FUNGISTAT kit

1. Unstow package from FUNGISTAT kit, remove protective film from opening, close opening with finger tip

2. Cut off the color-marked stripe on the package inlet. Open leaf valve, connect to water dispenser

3. Add 75 mL of cold water into package

   NOTE
   1. Avoid water spillage.
   2. Squeeze remaining water drops in valve to the package by fingers.

4. Disconnect package from water dispenser

5. Compress the package with the wipe in it several times for better dissolution of FUNGISTAT agent

6. Unstow and don rubber gloves from FUNGISTAT kit

7. Using scissors, cut open the side of the package opposite to inlet with leaf valve

8. Retrieve the wipe from the package and treat affected surfaces with it. Discard the wipes after use

9. Wipe the rubber gloves with dry wipe, stow into FUNGISTAT kit
Russian Segment Operations 3—1 E 10 Aug 00

3. SM INGRESS

3.1. ПхО INGRESS

3.1.1. EQUALIZE PRESSURE IN ENTIRE FGB-ПхО VOLUME
(00:10:00)

NOTE
Opening КВД РО-ПрК inside SM is performed via КРЛ.

On MCC-M GO
КВД ПГО-СМ → OPEN
(pressure equalization time ≤ 10 min)

3.1.2. ПГО-СУ HATCH OPENING
(00:05:00)

230 Retrieve hatch tool 11Ф732.Г1021-0А from СтА accessories kit
11Ф732.Г4000А1-30

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR

00:00:00 Rotate hatch tool in the direction of arrow OPEN until it clicks (3-4 turns)

√ All rollers protrude from beneath cover plates
Remove hatch tool from socket HATCH ACTUATOR and use it to
open SM ПхО-СУ hatch

00:03:00 Pull hatch along guides to the stop
Open hatch and secure it in the open position

КВД ПГО-СМ → ELECTRIC

Report to MCC. MCC-Н ⇒ MCC-М
3.1.3. ПхО-СУ HATCH OPENING

(00:05:00)

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR
00:00:00 Rotate hatch tool in the direction of arrow OPEN until it clicks (3-4 turns)
FGB 230 Stow hatch tool into СтА accessories kit 11Ф732.Г4000А1-30

00:03:00 Remove hatch from alignment pins holding the cone
Cables X56 A1 and X84 A1 ↔ connectors X56, X84 on hatch
Install caps on cable connectors X56, X84
Install protective cover 11Ф732.Г9400А1-400 on hatch
(tethered to hatch handle)
plane IV, ПхО Secure hatch with the cone to the ПхО center

√ КВД ПхО-СУ (FGB) — ELECTRIC
√ КВД ПхО-СУ (SSP) — CLOSED
√ КВД ПхО-СУ (UDM) — CLOSED

Report to МСС. МСС-H ⇒ МСС-M

3.1.4. ПхО LIGHTING ACTIVATION

(See Figure 3.1.4 SM Lighting Assembly Diagram)

ЩО (plane II) NIGHT  pb Л1,2 (two) → Press
cone part ADDITIONAL ■ LED Д1,2 (two)
  pb Л1,2 (two) → Press
  ■ LED Д3,4 (two)
Figure 3.1.4. SM Lighting Assembly Diagram.
3.2. [PO] INGRESS

3.2.1. STATION NITROGEN PRESSURIZING BY SHUTTLE MEANS
(00:15:00)
Perform GENERIC REPRESS (SODF:ISS OPS:JOINT OPS).
√ MCC for desired target pressure

3.2.2. PO-ПхО HATCH OPENING
(on MCC-M GO) (00:15:00)

КВД ПхО-РО → OPEN

Wait for hissing to stop (pressure equalization time ≤ 10 min)
Rotate hatch handle in the direction of arrow ОТКРЫТИЕ (Open) to the stop
Open hatch until it is secured in the open position

КВД ПхО-РО → CLOSE
√ КВД ПО-ПхО — ELECTRIC
Report to MCC. MCC-H ⇒ MCC-M

3.2.3. [PO] LIGHTING ACTIVATION
(00:02:00)

NOTE
Auxiliary lights on ЩО-ЛО and ЩО-ШО can be activated only when corresponding main light fixture is on.

417

COMPARTMENTS LIGHTING (main)
ЩО-ШО
sw 1,2-Л1 (two) → On
■ LED Д1,3 (two)

COMPARTMENT LIGHTING (aux) (at crew preference)
sw 1,2-Л2 (two) → On
■ LED Д2,4 (two)

417

COMPARTMENTS LIGHTING (main)
ЩО-ШО1
sw 1,2-Л1 (two) → On
■ LED Д1,3 (two)

COMPARTMENT LIGHTING (aux) (at crew preference)
sw 1,2-Л2 (two) → On
■ LED Д2,4 (two)

417

ADDITIONAL
ЩО
pb Л1,2 (two) → Press
■ LED Д3,4 (two)
3.2.4. SM AIR SAMPLE COLLECTION

(00:10:00)

Unstow adsorber from kit 311 pocket
Unscrew caps (two)
Insert adsorber tip into aspirator pipe (in the direction of arrow)

Central Post Air sample collection:
Compress aspirator bellows completely and release
Verify bellows is fully expanded (chains are tight)
Repeat bellows compression cycle 4 more times
Disconnect adsorber from aspirator and promptly re-install caps (two)
Stow adsorber in kit 311 pocket
Label kit pocket with date, time and place of air sample collection
Repeat actions with second adsorber
Report to **MCC. MCC-H ⇒ MCC-M**

3.2.5. US AIR SAMPLE COLLECTION IN SM

(00:10:00)

Collect one air sample inside the SM using USP Grab Sample Container
Label location and MET on bottle
Stow in the Ingress Equipment Bag
Take three (3) CO2 readings in SM (forward, mid-axis and aft) using Portable CO2 Monitor
Record CO2 Readings in Logbook and report readings to **MCC. MCC-H ⇒ MCC-M**
Take three (3) Humidity readings in SM (forward, mid-axis and aft) using Air Velocity Meter
Report readings to **MCC. MCC-H ⇒ MCC-M**
3.2.6. INDUCTION PRESSURE SENSOR (ДДИ) ACTIVATION

308 sw ДДИ-1 → On
ППС-22 Report to MCC. MCC-H ⇒ MCC-M

3.2.7. C&W PANEL (ПСС) ACTIVATION

(02:00:00)

1. C&W PANEL OUTFITTING

in the cable harness behind panel 412 (near ППС432)
Plug #32 of cnctr x10Ю-X196 of cbl 17КС.10Ю.8210A-4390 →і→ socket #32 of cbl 17КС.10Ю.8210A-930 (bayonet cnctr)

ППС-421 (behind pnl 404)
Remove external cover from stationary air duct by unscrewing 20 bolts on each cover (8 mm wrench)

308, ППС-22 sw BT2, BTK2 → Off
Remove internal cover from stationary air duct by unscrewing 20 bolts on each cover (8 mm wrench)
Plug #32 of cnctr x10Ю-X195 of cbl 17КС.10Ю.8210A-4380 →і→ socket #32 of cbl 17КС.10Ю.8210A-930 (bayonet cnctr)
Install internal cover on stationary air duct by screwing 20 bolts on each cover (8 mm wrench)

308, ППС-22 sw BT2, BTK2 → On
Install external cover on stationary air duct by screwing 20 bolts on each cover (8 mm wrench)

2. SM C&W PANEL ACTIVATION

308 sw C&W PWR1 → ON
ППС-22 sw C&W PWR2 → ON
Central Post, ПСС
sw POWER → ON
■ FUSE F1
√ sw <ТТС> / LOCAL — LOCAL

pb TEST → Press and hold for ≤ 30 sec
☐ All indicators
☒ General Alarm Light
Alarm signal (high-pitched warble)

pb TEST → Release
☐ All indicators (with no emergency signal input)
Alarm stops
pb ACK → Press
3. FGB C&W PANEL ACTIVATION

429 (FGB) ΠΣ (330)

sw POWER → ON
■ LED F1
√ sw <TTC> / LOCAL — LOCAL
pb TEST — Press and hold for ≤ 30 sec
□ All indicators
■ General Alarm Light
Alarm signal (high-pitched warble)

pb TEST — Release
■ All indicators (with no emergency signal input)
Alarm stops
pb ACK — Press

Report to MCC. MCC-H ⇒ MCC-M

3.2.8. CHECKING Signal-VM SYSTEM

ПУС (330)  
√ sw PNL PWR — OFF
√ sw DETECTOR POWER 1—10 (все) — ON
√ sw DETECTOR TEST — OFF

3.2.9. ИНПУ ACTIVATION

(00:10:00)

CAUTION

1. Panel is activated only during operation.
2. Do not operate two panels simultaneously.

ППС-21  sw INT CTRL PNL → On
ППС-22  sw INT CTRL PNL → On

00:00:00 ИНПУ

Press pb POWER ON
□ POWER ON
■ SCRN
■ PANEL

There are: - OS loading
- functional check

≤ 00:00:15

SM FORMAT STRUCTURE
Verify “SELF TEST RESULTS – OPERATIONAL”

Press pb POWER OFF
■ POWER ON
Report to MCC. MCC-H ⇒ MCC-M

Repeat check for the second ИНПУ
when the first one is deactivated (press pb POWER OFF)
Set current time for the second \textit{ИnPУ}:

\begin{verbatim}
SM FORMAT STRUCTURE
EDIT TIME ENTER □ EDIT TIME
\end{verbatim}

The field to enter the current time will light up in the center of the screen

\begin{verbatim}
NOTE
To reset error time press pb RESET.
\end{verbatim}

Enter using CODE key:

\begin{verbatim}
___hr___min___sec
\end{verbatim}

Press pb ENTER

\begin{verbatim}
□ EDIT TIME
\end{verbatim}

On display CURRENT TIME readout will begin

The field to enter the current time will de-illuminate in the center of the screen

Keep panel activated for SM comm control

Report to MCC. MCC-H \Rightarrow MCC-M

3.3. \textit{ПрK INGRESS}

3.3.1. \textit{РО-ПрK HATCH OPENING}

\begin{verbatim}
(On MCC-M GO) (00:02:00)
\end{verbatim}

КВД РО-ПрK → OPEN

Rotate hatch handle in the direction of arrow \textit{ОТКРЫТИЕ} (Open) to the stop

Open hatch until it is secured in the open position

КВД РО-ПрK → ELECTRIC

\begin{verbatim}
√ КВД ПрK-РО → CLOSE
\end{verbatim}

Report to MCC. MCC-H \Rightarrow MCC-M

3.3.2. \textit{ПрK LIGHTING ACTIVATION}

\begin{verbatim}
466
ADDITIONAL
ЩО pb Л1,2 (two) → Press
\end{verbatim}

\begin{verbatim}
□ LED D3,4 (two)
\end{verbatim}

\begin{verbatim}
NIGHT pb OFF → Press
\end{verbatim}

\begin{verbatim}
□ LED D1,2 (two)
\end{verbatim}
3.3.3. PO-ПрК HATCH FRAME RING INSTALLATION  
(00:03:00)  
138 Remove hatch frame ring by releasing two winged screws on dark blue
launch brackets and by releasing two fixing cords  
РО-ПрК Rotate frame ring and install ring brackets on hatch mounting axis
hatch  
Lower protective ring and rotate hatch handle in the direction of arrow
ЗАКРЫТИЕ (Close) to the stop  
138 Remove and discard launch brackets and screws in trash bag
Report to МСС. МСС-Н ⇒ МСС-М

3.3.4. FIRE EXTINGUISHER (ОСП-4) AND GAS MASK (ИПК-1) ACTIVATION  
(00:20:00)  
408 Remove clamps (two) from fire extinguisher
(8 mm wrench). Discard clamps and bolts in trash bag  
221, 421 Remove lockwire from gas mask cover
Discard in trash bag
Report to МСС. МСС-Н ⇒ МСС-М

3.4. SM VENTILATION SYSTEM ACTIVATION

3.4.1. ПхО DUCT FAN SETUP  
(00:20:00)  
308 ППС-22 √ sw ВВПхО — Off  
ПхО (plane I) Remove bolts (seven) of launch restraint brackets (four)
(8 mm, 10 mm wrenches)  
ВВПХО Discard bolts and launch restraint brackets
Report to МСС. МСС-Н ⇒ МСС-М

3.4.2. ПхО FAN SETUP  
(00:20:00)  
306 ППС-21 √ sw ВПхО — Off  
ПхО (plane IV) Remove bolts (six) of launch restraint brackets (three) (10 mm wrench)
ВПХО Discard bolts and launch restraint brackets
Report to МСС. МСС-Н ⇒ МСС-М

3.4.3. [BH1] and [BH2] SETUP  
(00:20:00)  
219,305 Remove bolts (six) from launch restraint brackets (three) (10 mm wrench)
Discard bolts and launch restraint brackets
Report to МСС. МСС-Н ⇒ МСС-М
3.4.4. ПрК FAN SETUP

(00:20:00)

338
ППС-23 √ sw ВПРК — Off

ПрК (plane I)
ВПРК Remove bolts (six) from launch restraint brackets (three) (10 mm wrench)
Discard bolts and launch restraint brackets
Report to MCC. МСС-Н ⇒ МСС-М

3.4.5. SM AIR DUCT ASSEMBLY

(00:45:00)

ПрК, container Unstow ВПхО1, ВПхО2, ЦВ1 soft segments (two),
with air duct 0 (two), 03 (two) from container for two assemblies

ПхО, Unfasten rigid segment labeled РО-ПхО (untie cord)
near hatch Install РО-ПхО air duct, connect with FGB-SM segment and route in
РО-ПхО ПхО behind ПхО-СУ hatch per air duct installation schematic
(Figure 3.4.5-1)

Secure air duct segments along installation route (with Velcro)

ПрК Unfasten ПрК air duct rigid segment (untie cord)
container Rotate segment into РО-ПрК hatchway
with air duct

252 Connect rigid segment in [PO] with rigid segment in ПрК
(see Figure 3.4.5-2)

Install SM-Progress air duct per air duct installation schematic
(see Figure 3.4.5-2) and secure air duct segments along
installation route (with Velcro) after ПрК-СУ and Progress-СУ hatch
opening

Report to MCC. МСС-Н ⇒ МСС-М
Figure 3.4.5-1. Air Duct Installation in PO-ПхO Area.

Figure 3.4.5-2. Air Duct Installation in PO-ΠрK Area.
3.4.6. VENTILATION SYSTEM FANS ACTIVATION
(00:05:00)

**NOTE**

ЦВ1 (circulation fan, FGB) is activated via КРЛ.

306    sw ВП04, ВП06, ВПхО, ВТК1 → On
ППС-21  sw ВП02, ВАП2, ВТ1        — On
308    sw ВП03, ВВПхО, ВТК2 → On
ППС-22  sw ВП05, ВАП1, ВП01, ВТ2 — On
338    sw ВП07, ВП09, ВП011, ВПРК → On
ППС-23  sw ВП1РО, ВГЖТ3            — On
338    sw ВВ2РО, ВВПРК               → On
ППС-24  sw ВП08, ВП010, ВЕЛП1, ВГЖТ1, ВГЖТ2, ВГЖТ4 — On
        sw ВП012 — Off
Report to **MCC.  MCC-H ⇒ MCC-M**

3.5. INSTALLATION OF CAPS ON GROUND REPRESSURIZATION INLETS
(00:20:00)

**NOTE**

Caps are tethered near inlets.

ПхО, between planes III and IV
Install caps ЗГ320, ЗГ33 on inlets Б8, Б11

РО, between planes I and IV
Remove panel 401 (7mm wrench or screwdriver)
Install caps ЗГ31, ЗГ34 on inlets Б9, Б10
Install panel 401 (7mm wrench or screwdriver)

ПрК, plane II on КВД ПрК-СУ mounting bracket
Remove caps ЗГ26, ЗГ27 from mounting point (10mm wrench)
Install caps ЗГ26, ЗГ27 on inlets Б35, Б36 (10mm wrench)
Report to **MCC.  MCC-H ⇒ MCC-M**
3.6. ЕДВ-CB REFILLING FROM CWC
(00:30:00)

Prepare:
- Hose adapter US/RSA-Б
- CWC
- ЕДВ-CB
- fill indicator (tethered to ЕДВ-CB)

behind 138 cnctr РЗ (ШЛАНГ-ТРОЙНИК (hose tee) РУ1,РУ6,Р3) ↔ cnctr РЗ
(on ЕДВ-CB)
behind 138, cap ↔ fitting ПОДАЧА ДАВЛЕНИЯ (pressure supply)
ЕДВ-CB Install fill indicator on ЕДВ-CB

Configure equipment:

![Diagram of ЕДВ-CB refilling from CWC](image)

Figure 3.6. Filling ЕДВ-CB from CWC diagram.

Refill ЕДВ-CB, by squeezing CWC container until red guide mark appears on fill indicator
Disassemble equipment:
- hose US/RSA-Б ↔ ЕДВ

behind 232 stow hose US/RSA-Б and fill indicator to storage location
(in bag with Rodnik accessories)
behind 138 cap ↔ fitting ПОДАЧА ДАВЛЕНИЯ (pressure supply)
behind 138 cnctr РЗ (ШЛАНГ-ТРОЙНИК (hose tee) РУ1,РУ6,Р3) ↔ cnctr РЗ
(on ЕДВ-CB)
Install ЕДВ-CB in nominal location

Report to МСС. МСС-Н ⇒ МСС-М
3.7. US LIOH OPERATION IN SERVICE MODULE

ECLSS SSR 4: US LIOH OPERATION IN SERVICE MODULE
(ISS MAL/2A.2B/FIN B)(HC) Page 1 of 1 pages

TOOLS AND EQUIPMENT REQUIRED:
US LiOH Cannister (1)
US to Russian LiOH Can Adapter Assembly

1. LiOH CANNISTER SETUP

1.1 If required, unstow
   LiOH Adapter Plates (2)
   Rods (2)
   Hose Adapter (Part No: SDG33113618-301)

1.2 Unstow a fresh LiOH cannister.

1.3 If an old LiOH cannister is already installed
   Loosen (do not remove) wing nuts (two) on adapter.
   Remove adapter plate.
   Remove, label, stow old LiOH cannister.

1.4 Slide Adapter Rods (two) through the holes in Adapter Base Plate.
   Slide Adapter Rods through the holes in Adapter Top Plate and attach wing
   nuts (1 or 2 turns) to secure plate.
   Refer to Figure 1.

1.5 Install fresh US LiOH cannister in adapter so that the hole in the cannister
   lines up with the hole in the Adapter Base Plate.
   Tighten wing nuts to secure in place (finger tight).

1.6 LiOH Adapter Base Plate →|← Hose Adapter

2. CO2 ABSORBER ACTIVATION

2.1 Open Panel 417.
   Remove cap N7 from Fan Hose.

   Fan Hose attached to outlet of Fan so that airflow is consistent with Figure 1

   LiOH Adapter Assembly →|← Fan Hose
   Close Panel 417.

   WARNING
   Fan hose must be installed at the outlet of the Fan so that air blows into the cannister’s axial port and out radially as
   shown in Figure 1. If air is flowing in the opposite direction, then toxic byproducts will be produced.

2.2 On MCC GO

ППС-23 sw ВП1(2) → On

19 JUL 00
3. CO2 ABSORBER DEACTIVATION

3.1 On MCC GO

ΠΠС-23

sw ВП1(2) → Off

3.2 Open Panel 417.

LiOH Adapter Assembly ←|→ Fan Hose

Close Panel 417.

3.3 LiOH Cannister ←|→ LiOH Adapter Assembly

Label, stow used LiOH cannister.

Disassemble, stow LiOH Adapter Assembly.

Figure 1.- US-Russian LiOH Adapter Assembly and LiOH Cannister.
4. AUDIO SUBSYSTEM ([CTTC])

4.1. [CTTC] SETUP

<table>
<thead>
<tr>
<th>ИнПУ</th>
<th>SM: SM COMM CONTROL</th>
<th>SM COMM - STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>SM COMM CONTROL</td>
<td>VHF1 SQUELCH PWR OFF</td>
</tr>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>SM COMM CONTROL</td>
<td>VHF2 SQUELCH PWR OFF</td>
</tr>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>SM COMM - STATUS</td>
<td>RCVR VHF1</td>
</tr>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>SM COMM - STATUS</td>
<td>RCVR VHF2</td>
</tr>
</tbody>
</table>

4.2. VHF1 COMM

<table>
<thead>
<tr>
<th>ИнПУ</th>
<th>SM: SM COMM CONTROL</th>
<th>SM COMM - STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>VHF1 ON</td>
<td>RCVR VHF1</td>
</tr>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>VHF2 DUPLEX ON</td>
<td>RCVR VHF2</td>
</tr>
</tbody>
</table>

To complete comm

- Press pb CHANNEL 2
- Press pb XMIT — Pressed
- LED XMIT 2
- CHANNEL 2
- RCVR VHF1

Release pb CHANNEL 2
- LED XMIT 2
- CHANNEL 2
- RCVR VHF1

4.3. VHF2 DUPLEX COMM

<table>
<thead>
<tr>
<th>ИнПУ</th>
<th>SM: SM COMM CONTROL</th>
<th>SM COMM - STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>VHF2 DUPLEX ON</td>
<td>RCVR VHF2</td>
</tr>
<tr>
<td><img src="image" alt="СТТС" /></td>
<td>VHF2 DUPLEX ON</td>
<td>RCVR VHF2</td>
</tr>
</tbody>
</table>

To complete comm

- Press pb CHANNEL 3
- Press pb XMIT — Pressed
- LED XMIT 3
- CHANNEL 2
- RCVR VHF2

Release pb CHANNEL 2
- LED XMIT 2
- CHANNEL 2
- RCVR VHF2
4.4. PACKET COMM  
(ON MCC-M GO)

NOTE

1. **MCC-M** outputs commands to power up and power down telephone-telegraph comm УС via КРЛ.

2. Files to be transmitted to **MCC-M** should not have more than 8 symbols in their names (only English letters and digits) and should not have attribute «Only reading».

3. Do not add files to folder `D:\US_TTS\D_SEND\TTSEND` until transmission of previous files is complete.

Prior to comm pass

Assemble the hardware circuit per 2А.2В SM/FGB IFM IVA Inst/Deinst Tasks, 4.2

Wiener Power

1. Prepare and place files to `D:\US_TTS\D_SEND\TTSEND`

During comm pass

ΠА-4 2. Set up comm for packet transmission (on MCC GO) 
       Regulator ТЛФ 2 → maximum

ΠА-4 3. ꙱ XMIT 
       □ LED XMIT 1(2, 3)

Wiener Power

4. Start program WS_TTS3 from folder `D:\US_TTS`

After comm pass is complete, message ‘Comm pass was performed without mistakes’ (‘Comm pass was performed with mistakes’) appears in window ‘Reports about comm pass’

Comm pass result is shown in windows ‘List of transmitted files’ (files which were not transmitted during comm pass) and ‘List of received files’

After comm pass is complete exit program WS_TTS3.EXE

Report to MCC-M that comm pass is complete

ΠА-4 5. ☑ XMIT 
       ■ LED XMIT 1, 2, 3

After comm pass

Wiener Power

6. Take files sent by **MCC-M** from `D:\US_TTS\D_RECV\OTP`
5. PROGRESS INGRESS

5.1. ПрК-СУ HATCH OPENING

(00:05:00)

КВД ПрК-ТК → OPEN

ПрК
Retrieve КСД cap, hatch tool 11Ф732.Г1021-0А and hatch tool extension 11Ф732.Г4022-0 from СтА accessories kit 11Ф732.Г4000А1-30

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR

00:00:00 Rotate hatch tool in the direction of arrow OPEN until it clicks (6-7 turns)
√ All rollers protrude from beneath hatch
Remove hatch tool from hatch socket

00:03:00 Open hatch and secure it in the open position
Use hatch tool 11Ф732.Г1021-0А and hatch tool extension 11Ф732.Г4022-0 for Progress (ТКГ)-СУ hatch opening

КВД ПрК-ТК → ELECTRIC

Progress
КСД cap →](" fitting МЕСТО ЗАГЛУШКИ КСД
Report to MCC. MCC-H ⇒ MCC-M

5.2. PROGRESS-СУ HATCH OPENING

(00:05:00)

NOTE
Progress-СУ hatch opening and cargo transfer operations should be performed while wearing protective goggles and dust masks.

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool extension into socket ГЕРМЕТИЗАЦИЯ КРЫШКИ
(hatch actuator)
Secure hatch tool extension on SM passive docking unit cone
Fully insert hatch tool into socket on hatch tool extension

00:00:00 Rotate hatch tool in the direction of arrow ОТКРЫТИЕ (Open) until it clicks (6-7 turns)

ПрК
Stow hatch tool and hatch tool extension into СтА accessories kit 11Ф732.Г4000А1-30

00:03:00 Open hatch and secure it in open position
Report to MCC. MCC-H ⇒ MCC-M
5.3. PROGRESS SYSTEMS OPERATION

(00:05:00)

ЩО-ЛО
GENERAL MAIN
sw 1,2,3,4-Л1 (four) → On
■ LED Д1,2,3,4 (four)

GENERAL AUX (at crew preference)
sw 1,2,3,4-Л2 (four) → On
■ LED Д1,2,3,4 (four)

ΠБК
sw → ВКЛ БЛ РРСТ (undocking enable override)
Manual valve ГЖА БО → ГЖА ОТКЛ (gas-liquid unit off)
Report to МСС. МСС-Н ⇒ МСС-М
6. PROGRESS EGRESS

6.1. SM-PROGRESS AIRDUCT DISASSEMBLY

(00:05:00)
Secure SM-Progress airduct segments assembly in ПрК (location at crew preference), making sure segments do not prevent normal closure of ПрК-СУ hatch
Hinged duct ↔ from stationery ВД air duct in [PO]
Report to МСС. МСС-Н ⇒ МСС-М

6.2. SYSTEMS DEACTIVATION

(00:05:00)
ПБК
sw → ОТКЛ БЛ РРСТ (undocking inhibit override)
Manual valve ГЖА БО → ГЖА ВКЛ (gas-liquid unit on)
ЩО-ЛО
GENERAL AUX
sw 1,2,3,4-П2 (four) → Off
GENERAL MAIN
sw 1,2,3,4-П1 (four) → Off
Report to МСС. МСС-Н ⇒ МСС-М

6.3. PROGRESS-СУ HATCH CLOSING

(00:10:00)
Unstow hatch tool 11Ф732.Г1021-0А and hatch tool extension 11Ф732.Г4022-0 from СтА accessories kit 11Ф732.Г4000А1-30
Verify rubber seals integrity
Wipe rubber seals with cleaning pads from docking mechanism accessory kit 33У 9962.003
Release hatch and press firmly closed
Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool extension into socket ГЕРМЕТИЗАЦИЯ КРЫШКИ (hatch actuator)
Secure hatch tool extension on SM passive docking unit cone
Fully insert hatch tool into socket on hatch tool extension
Rotate hatch tool in the direction of arrow ЗАКРЫТИЕ (Close) until it clicks (6-7 turns)
КСД cap ↔ fitting МЕСТО ЗАГЛУШКИ КСД
ПрК
Stow КСД cap and hatch tool extension 11Ф732.Г4022-0 into СтА accessories kit 11Ф732.Г4000А1-30
Retain hatch tool 11Ф732.Г1021-0А for ПрК-СУ hatch closing
Report to МСС. МСС-Н ⇒ МСС-М
6.4. ПрК-СУ HATCH CLOSING

(00:10:00)

Verify rubber seals integrity
Wipe rubber seals with cleaning pads from docking mechanism
accessory kit 33У 9962.003

Release hatch and press firmly closed
Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR

Rotate hatch tool in the direction of arrow CLOSE until it clicks (6-7 turns)
√ All rollers are retracted beneath cover plates

ПрК
Stow hatch tool into СтА accessories kit 11Ф732.Г4000А1-30
√ КВД ПрК-ТК — ELECTRIC

Report to MCC. MCC-H ⇒ MCC-M

6.5. SM-PROGRESS DOCKING INTERFACE LEAK CHECK

(00:25:00)

On MCC-M GO (after depressurization of vestibule)

449 Retrieve pressure gauge [MB]

1. PRESSURE GAUGE [MB] LEAK CHECK
3Г19 ↔ KKT2 (pressure monitoring valve)
[MB] →ККТ2

00:00:00 KKT2 → OPEN
00:01:00 KKT2 → CLOSE
Monitor ∆Р([МВ]) ≤ 30 mm Hg for 1 min

2. TRANSFER HATCH LEAK CHECK

00:00:00 KKT2 → OPEN
00:05:00 Monitor ∆Р([МВ]) ≤ 1 mm Hg for 15 min

00:20:00 KKT2 → CLOSE
[МВ] ↔ККТ2
cap 3Г19 ↔ККТ2

449 Put pressure gauge [MB] into storage location
Report to MCC. MCC-H ⇒ MCC-M
7. SM EGRESS

7.1. REMOVAL OF РО-ПрК HATCH FRAME RING

(00:03:00)

РО Rotate hatch tool in the direction of arrow ОТКРЫТИЕ (Open)
Release bottom end of hatch frame ring alignment pin from sealing mechanism slot

138 Detach ring from hatch, fold it and secure in brackets

Report to МСС. МСС-Н ⇒ МСС-М

7.2. РО-ПрК HATCH CLOSING

(00:02:00)

√ КВД ПрК-РО — CLOSE

466, ЩО NIGHT
pb Л1,2 (two) → Press
■ LED Д1,2 (two)
ADDITIONAL
pb OFF → Press

РО-ПрК hatch Close hatch, ensuring hatch is firmly seated
Rotate hatch tool in the direction of arrow ЗАКРЫТИЕ (Close)

√ КВД РО-ПрК — ELECTRIC
Report to МСС. МСС-Н ⇒ МСС-М

7.3. FAN DEACTIVATION USING SYSTEM POWER PANEL (ППС)

(00:05:00)

306 ППС-21 sw ВПхО, ВПО4, ВПО6, ВТК1 → Off

308 ППС-22 sw ВПО3, ВВПхО, ВТК2 → Off

338 ППС-23 sw ВПО9, ВПО11, ВПРК → Off

338 ППС-24 sw ВВПРК → Off
Report to МСС. МСС-Н ⇒ МСС-М
7.4. PO-ПхО AIR DUCT DISASSEMBLY

(see Figure 3.4.5-1) (00:10:00)
Disconnect PO-ПхО air duct from FGB-SM air duct assembly
Secure PO-ПхО air duct in ПхО at crew preference making sure the segments do not impede ПхО-СУ hatch closure
Secure FGB-SM air duct assembly in ПГО at crew preference making sure the segments do not impede ПГО-СУ hatch closure
Report to MCC. MCC-H ☞ MCC-M

7.5. SM AIR SAMPLE COLLECTION

(00:10:00)
Unstow adsorber from kit 311 pocket
Unscrew caps (two)
Insert adsorber tip into aspirator pipe (in the direction arrow)

Central Air sample collection:
Compress aspirator bellows completely and release
Verify bellows is fully expanded (chains are tight)
Repeat bellows compression cycle 4 more times
Disconnect adsorber from aspirator and promptly re-install caps (two)
Stow adsorber in kit 311 pocket
Label kit pocket with date, time and place of air sample collection
Report to MCC. MCC-H ☞ MCC-M

7.6. US AIR SAMPLE COLLECTION IN SM

(00:10:00)
Collect one air sample inside the SM using USP Grab Sample Container
Label location and MET on bottle
Stow in the Ingress Equipment Bag
Take three (3) CO2 readings in SM (forward, mid-axis and aft) using Portable CO2 Monitor
Record CO2 Readings in Logbook and report readings to MCC. MCC-H ☞ MCC-M
Take three (3) Humidity readings in SM (forward, mid-axis and aft) using Air Velocity Meter
Report readings to MCC. MCC-H ☞ MCC-M
7.7. Signal-VM DEACTIVATION
(on MCC-M GO) (If manual check was performed)

330 ПУС
sw DETECTOR POWER1 (2---10) → OFF
sw PNL PWR → OFF

Report to MCC. MCC-H ⇒ MCC-M

7.8. C&W PANEL (ПСС) DEACTIVATION

1. FGB C&W PANEL DEACTIVATION
plane 429 (FGB) sw POWER → OFF

2. SM C&W PANEL DEACTIVATION
Central Post (SM) sw POWER → OFF

SM, 308 sw C&W PWR1 → OFF
ППС-22 sw C&W PWR2 → OFF

Report to MCC. MCC-H ⇒ MCC-M

7.9. SM LIGHTING DEACTIVATION

434 GENERAL AUX
ЩО-ЛО sw 1,2,3,4-ЛИ (four) → Off

GENERAL MAIN
sw 1,2,3,4-ЛИ1 (four) → Off

434,417 COMPARTMENT LIGHTING (aux)
ЩО-ШО1 sw 1-Л2, 2-Л2 (two) → Off

COMPARTMENT LIGHTING (main)
sw 1-Л1, 2-Л1 (two) → Off

417 COMPARTMENT LIGHTING (aux)
ЩО-ШО sw 1-Л2, 2-Л2 (two) → Off

COMPARTMENT LIGHTING (main)
sw 1-Л1, 2-Л1 (two) → Off

417 ADDITIONAL
ЩО pb OFF → Press

ЩО (ПхО) ADDITIONAL
plane II pb OFF → Press
cone part NIGHT pb OFF → Press

Report to MCC. MCC-H ⇒ MCC-M
7.10. ПхО-СУ HATCH CLOSING

(00:15:00)

✓ КВД ПхO-СУ (FGB) — ELECTRIC
✓ КВД ПхO-СУ (SSP) — CLOSED
✓ КВД ПхO-СУ (UDM) — CLOSED

FGB 230

Unstow hatch tool 11Ф732.Г1021-0А from СтA accessories kit 11Ф732.Г4000А1-30

Release hatch
Remove protective cover from ПхO-СУ hatch
(tether to hatch handle)
Verify rubber seals integrity
Wipe rubber seals with cleaning pads from docking mechanism accessory kit 33У 9962.003

Connectors X56 A1 and X84 A1 — «|» connectors X56 and X84 on hatch

✓ color marks on housing and on hatch match
(yellow – yellow, black - black)
Install hatch onto guide pins and pull until hatch is firmly captured

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR
Rotate hatch tool in the direction of arrow CLOSE until it clicks (3-4 turns)
Remove hatch tool from socket HATCH ACTUATOR and use it later to close ПГО-СУ hatch
Report to МСС. МСС-Н ⇒ МСС-М

7.11. ПГО-СУ HATCH CLOSING

(00:10:00)

Verify rubber seals integrity
Wipe rubber seals with cleaning pads from docking mechanism accessory kit 33У 9962.003

Release hatch and press firmly closed

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR
Rotate hatch tool in the direction of arrow CLOSE until it clicks (3-4 turns)
✓ all rollers are retracted beneath cover plates

230

Stow hatch tool in СтA accessories kit 11Ф732.Г4000А1-30

✓ КВД ПГО-СМ — ELECTRIC
Report to МСС. МСС-Н ⇒ МСС-М
7.12. FGB-SM DOCKING INTERFACE LEAK CHECK
(00:40:00)

Behind 405 (FGB) Retrieve pressure gauge [MB]

Cap 3Г19 ↔ KKT3 (pressure monitoring valve)
[MB] ➔ KKT3

00:00:00 KKT3 ➔ OPEN
00:05:00 Monitor Δ P([MB]) ≤ 2 mm Hg for 30 min

00:35:00 KKT3 ➔ CLOSE
[MB] ➔ KKT3
Cap 3Г19 ➔ KKT3

Behind 405 (FGB) Store pressure gauge [MB] in storage location
Report to MCC. MCC-H ⇒ MCC-M
8. FGB EGRESS

8.1. FGB AIR DUCTS DISASSEMBLY

(On MCC-M GO) (00:15:00)

**NOTE**
Circulation fan 1 (ЦВ1) is deactivated via КРЛ.

ПМА 1
Disconnect flexible air duct (77КМ-7660-330) from PMA1 rigid air duct inlet

**CAUTION**
When working with ВД1 hinged duct, ensure integrity of circulation fan 1 (ЦВ1) electrical cables and connectors.

ГА, ПГО
Remove mufflers and stow
Partially disconnect (at crew preference), remove mufflers from ВД1 and secure ВД1 and ВД2 air ducts, so that they do not impede ПГО-ГА and ГА-ПМА1 hatch closing
Report to MCC. МСС-Н ⇒ MCC-M

8.2. REMOVAL OF ПГО-ГА HATCH FRAME RING
(00:05:00)

ПГО
Rotate hatch handle in the direction of arrow ОТКРЫТИЕ (Open)
Release bottom end of hatch frame ring alignment pin from sealing mechanism slot

402
Detach ring from hatch, fold it and secure in brackets
Report to MCC. МСС-Н ⇒ MCC-M

8.3. FGB AIR SAMPLE COLLECTION
(00:10:00)

Unstow adsorber from kit 310 pocket
Unscrew caps (two)
Insert adsorber tip into aspirator pipe (in the direction of arrow)

ПГО
Air sample collection:
Compress aspirator bellows completely and release
Verify bellows is fully expanded (chains are tight)
Repeat bellows compression cycle 4 more times
Disconnect adsorber from aspirator and promptly re-install caps (two)

Stow adsorber in kit 310 pocket
Label kit pocket with date, time and place of air sample collection

Stow aspirator and kits 310, 311 in “Return to Houston” bag
Report to MCC.  MCC-H ⇒ MCC-M

8.4. US AIR SAMPLE COLLECTION IN FGB
(00:10:00)
Collect one air sample inside the FGB using USP Grab Sample Container
Label location and MET on bottle
Stow in the Ingress Equipment Bag
Take three (3) CO2 readings in FGB (forward, mid-axis and aft) using Portable CO2 Monitor
Record CO2 Readings in Logbook and report readings to MCC.  MCC-H ⇒ MCC-M
Take three (3) Humidity readings in FGB (forward, mid-axis and aft) using Air Velocity Meter
Report readings to MCC.  MCC-H ⇒ MCC-MM

8.5. ПГО LIGHTING DEACTIVATION

414, 430  GENERAL AUX
ЩО-ЛО  sw 1,2,3,4 - Л2 (four) → Off

GENERAL MAIN
sw 1,2,3,4 - Л1 (four) → Off
Report to MCC.  MCC-H ⇒ MCC-M

8.6. ПГО-ГА HATCH CLOSING
(00:02:00)
√ КВД ПГО-ГА — ELECTRIC
Close hatch, ensuring hatch is firmly seated
Rotate hatch handle in the direction of arrow ЗАКРЫТИЕ (Close)
√ КВД ГА-ПГО — CLOSE
Report to MCC.  MCC-H ⇒ MCC-M
8.7. ПГО-ГА HATCH LEAK CHECK

(00:35:00)
Perform GENERIC DEPRESS (SODF: ISS OPS: JOINT OPS)
√ MCC for desired target pressure
Standby for MCC-M GO to proceed
Report to MCC. MCC-H ⇒ MCC-M

8.8. ГА EGRESS

(00:05:00)
Remove protective cloth cover (stow in bag 33У 9962.022, tether bag to hatch handle)
Verify rubber seals integrity
Wipe ГА-PMA1 hatch seals with cleaning pads from from docking mechanism accessory kit 33У 9962.003

ЩО-ЛО GENERAL AUX
(plane IV)
sw 1,2,3,4 - Л2 (four) → Off

GENERAL MAIN
sw 1,2,3,4 - Л1 (four) → Off
Report to MCC. MCC-H ⇒ MCC-M

8.9. ГА-PMA1 HATCH CLOSING

(00:05:00)
КВД ГА-ТК → ELECTRIC
√ КВД ГА-NODE1 — ELECTRIC

Unstow hatch tool 11Ф732.Г1021-0А from kit 33У 9962.003 (tethered to ГА-PMA1 hatch handle)
Release hatch and press firmly closed
Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)
Fully insert hatch tool into socket HATCH ACTUATOR
Rotate hatch tool in the direction of arrow CLOSE until it clicks (3-4 turns)
Stow hatch tool in kit 33У 9962.003
Prepare kit for later transfer to NODE1
Report to MCC. MCC-H ⇒ MCC-M

8.10. ГА-PMA1 HATCH LEAK CHECK

(00:35:00)
Perform GENERIC DEPRESS (SODF: ISS OPS: JOINT OPS)
√ MCC for desired target pressure
Standby for MCC-M GO to proceed
Report to MCC. MCC-H ⇒ MCC-M
9. ADDITIONAL OPTION OF PRESSURE EQUALIZATION USING CAP

9.1. ADDITIONAL OPTION OF PRESSURE EQUALIZATION (ГА-РМА1 HATCH)

**on MCC-M GO**

**Orbiter**

Unstow hatch tool 11Ф732.Г1021-0A from kit 33У 9962.003

Hatch tool → АВАРИЙНОЕ ПОЛОЖЕНИЕ (Emergency Position)

Fully insert hatch tool into hatch socket VALVE

Rotate hatch tool in the direction of arrow OPEN by 1/2 turn (unlock cap)

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)

Rotate hatch tool in the direction of arrow OPEN by 2 turns (open cap)

Verify air flow stops (by ear)

Rotate hatch tool in the direction of arrow CLOSE until it clicks (close cap)

Use hatch tool 11Ф732.Г1021-0A for hatch opening

Report to **МСС. МСС-Н ⇒ МСС-М**

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9.2. ADDITIONAL OPTION OF PRESSURE EQUALIZATION (ПхО-СУ HATCH)

**on MCC-M GO**

**FGB 230**

Unstow hatch tool 11Ф732.Г1021-0A from СтА accessories kit 11Ф732.Г4000А1-30

Hatch tool → АВАРИЙНОЕ ПОЛОЖЕНИЕ (Emergency Position)

Fully insert hatch tool into hatch socket PRESSURE EQUALIZATION VALVE

Rotate hatch tool in the direction of arrow OPEN by 1/2 turn (unlock cap)

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)

Rotate hatch tool in the direction of arrow OPEN by 2 turns (open cap)

Verify air flow stops (by ear)

Rotate hatch tool in the direction of arrow CLOSE until it clicks (close cap)

Use hatch tool 11Ф732.Г1021-0A for hatch opening

Report to **МСС. МСС-Н ⇒ МСС-М**
9.3. ADDITIONAL OPTION OF PRESSURE EQUALIZATION (PROGRESS-CУ HATCH) on MCC-M GO

ПрК Unstow hatch tool 11Ф732.Г1021-0А and extension 11Ф732.Г4022-0 from СтA accessories kit 11Ф732.Г4000А1-30

Hatch tool → АВАРИЙНОЕ ПОЛОЖЕНИЕ (Emergency Position)

Fully insert hatch tool into hatch socket ВЫРАВНИВАНИЕ ДАВЛЕНИЯ (pressure equalization) (use extension 11Ф732.Г4022-0)

Rotate hatch tool in the direction of arrow ОТКРЫТИЕ (Open) by 1/2 turn (unlock cap)

Hatch tool → РАБОЧЕЕ ПОЛОЖЕНИЕ (Working Position)

Rotate hatch tool in the direction of arrow ОТКРЫТИЕ (Open) by 2 turns (open cap)

Verify air flow stops (by ear)

Rotate hatch tool in the direction of arrow ЗАКРЫТИЕ (Close) until it clicks (close plug)

ПрК Stow extension into accessories kit СтA 11Ф732.Г4000А1-30

Use hatch tool 11Ф732.Г1021-0А

Report to МСС. МСС-Н ⇒ МСС-М
10. SIGNAL-VM DETECTOR MANUAL TEST  
(On MCC-M GO) (00:10:00 for 2 operators)

Get MCC-M confirmation on fire detection mode deactivation

330  \( \sqrt{\text{sw PNL PWR}} \) \( \rightarrow \) ON  
ПУС  \( \sqrt{\text{sw DETECTOR POWER } 1 \rightarrow 10 \text{ (ten)}} \) \( \rightarrow \) ON  
ПУС  \( \sqrt{\text{sw DETECTOR TEST}} \) \( \rightarrow \) OFF

ПУС  pb DETECTOR TEST \( \rightarrow \) 1  
ПСС  Verify □ SMOKE  
ПУС  Verify ■ General Alarm Light ALARM

ПУС  Verify □ LED DETECTOR SIGNAL 1

**************************************************************************  
If ■ LED Д1 (Д2 \( \rightarrow \) Д10) DETECTOR POWER (ДС-7А failure)  
pb DETECTOR RESET \( \rightarrow \) Press  
sw DETECTOR POWER (failed) \( \rightarrow \) OFF  
Report to MCC. MCC-H \( \Rightarrow \) MCC-M

If □ LED Д1 (Д2 \( \rightarrow \) Д10) DETECTOR POWER  
(fuse failure)  
pb DETECTOR RESET \( \rightarrow \) Press  
Report to MCC. MCC-H \( \Rightarrow \) MCC-M

**************************************************************************  
pb DETECTOR RESET \( \rightarrow \) Press  
■ LED DETECTOR SIGNAL 1

ПСС  pb ACK \( \rightarrow \) Press  
Verify ■ SMOKE  
Verify ■ General Alarm Light  
Repeat for each ДС-7А from 2 to 10

ПУС  sw DETECTOR TEST \( \rightarrow \) OFF

on MCC-M GO  sw PNL PWR \( \rightarrow \) OFF

Report to MCC. MCC-H \( \Rightarrow \) MCC-M
11. TRANSFER PROCEDURES

11.1. TRANSPORT VEHICLE UNLOADING

Wiener Power

1. Start IMS control software per 12.1

2. \[\text{on IMS toolbar}\]

3. Confirm the unloading plan for delivered cargo items per 12.6.1.1.

If delivered hardware was stowed onboard the ISS not according to the stowage plan, note this in the IMS database per 12.4.2.

11.2. HARDWARE CHANGEOUT/INSTALLATION

11.2.1. SCHEDULED CHANGEOUTS

Wiener Power

1. Start IMS control software per 12.1.

2. \[\text{on IMS toolbar}\]

3. Confirm the hardware changeout plan per 12.6.1.1.

11.2.2. NON-SCHEDULED CHANGEOUTS

Wiener Power

1. Start IMS control software per 12.1.

2. Per 12.4.3., find in \[\text{Tree window}\] within stowage structure the hardware to be installed or removed.

3. Per 12.4.2., perform hardware relocation in the IMS database.
12. INFORMATION SYSTEM

12.1. STARTING THE IMS CONTROL SOFTWARE

1. \(\text{IMS}\) on Desktop.

2. \(<\) Inventory Management System - Microsoft Internet Explorer. \\
   \(\text{(Connect to Database)}\)

3. \(\) OK.

**CAUTION**

1. Exiting Internet Explorer will inevitably result in closedown of the IMS control software.

2. If other program needs to be started via Internet Explorer, a new Internet Explorer window should be opened.

4. \(<\) IMS

In the process of work, six different work areas may be sequentially accessed.

For that \(\text{(Search, Graph, Plan, Audit)}\) on IMS tab panel.

12.2. CONTROL COMMANDS

Control commands can be issued using window toolbars, dropdown menus or by pressing assigned hotkeys.

To open dependent windows, issue commands from window toolbar or dropdown menu.
### 12.2.1. TOOLBARS

#### 12.2.1.1. IMS TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td>![ ]</td>
<td>Refresh data</td>
</tr>
<tr>
<td>![ ]</td>
<td>New tree window</td>
</tr>
<tr>
<td>![ ]</td>
<td>New graphical window</td>
</tr>
<tr>
<td>![ ]</td>
<td>New search window</td>
</tr>
<tr>
<td>![ ]</td>
<td>New plan window</td>
</tr>
<tr>
<td>![ ]</td>
<td>New audit window.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Get selected item(s)</td>
</tr>
<tr>
<td>![ ]</td>
<td>Move item(s)</td>
</tr>
<tr>
<td>![ ]</td>
<td>Create a new item</td>
</tr>
<tr>
<td>![ ]</td>
<td>Delete selected item(s)</td>
</tr>
<tr>
<td>![ ]</td>
<td>Undo last operation</td>
</tr>
</tbody>
</table>

#### 12.2.1.2. TREE WINDOW TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td>![ ]</td>
<td>Show dependant graphical window</td>
</tr>
<tr>
<td>![ ]</td>
<td>Show details window</td>
</tr>
</tbody>
</table>
### 12.2.1.3. OBJECT PROPERTIES WINDOW TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Save" /></td>
<td>Save</td>
</tr>
<tr>
<td><img src="image" alt="Save and create as copy" /></td>
<td>Save and create as copy</td>
</tr>
<tr>
<td><img src="image" alt="Revert to old values" /></td>
<td>Revert to old values</td>
</tr>
<tr>
<td><img src="image" alt="Call HazMat application" /></td>
<td>Call HazMat application</td>
</tr>
</tbody>
</table>

### 12.2.1.4. SEARCH WINDOW TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Start /Stop search" /></td>
<td>Start /Stop search</td>
</tr>
<tr>
<td><img src="image" alt="Logic" /></td>
<td>Logic (toggles multiword search logical AND /logical OR parameter)</td>
</tr>
<tr>
<td><img src="image" alt="Add row" /></td>
<td>Add row</td>
</tr>
<tr>
<td><img src="image" alt="Remove row" /></td>
<td>Remove row</td>
</tr>
<tr>
<td><img src="image" alt="Previous query /next query" /></td>
<td>Previous query /next query</td>
</tr>
<tr>
<td><img src="image" alt="Query dropdown list" /></td>
<td>Query dropdown list</td>
</tr>
<tr>
<td><img src="image" alt="Delete query" /></td>
<td>Delete query</td>
</tr>
<tr>
<td><img src="image" alt="Save existing queries" /></td>
<td>Save existing queries</td>
</tr>
<tr>
<td><img src="image" alt="Show dependent tree window" /></td>
<td>Show dependent tree window</td>
</tr>
<tr>
<td><img src="image" alt="Show dependent graphical window" /></td>
<td>Show dependent graphical window</td>
</tr>
<tr>
<td><img src="image" alt="Show details window" /></td>
<td>Show details window</td>
</tr>
</tbody>
</table>
### 12.2.1.5. GRAPHICAL NAVIGATOR TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Back to parent" /></td>
<td>Back to parent</td>
</tr>
<tr>
<td><img src="image" alt="Show dependent tree window" /></td>
<td>Show dependent tree window</td>
</tr>
<tr>
<td><img src="image" alt="Show details window" /></td>
<td>Show details window</td>
</tr>
<tr>
<td><img src="image" alt="Zoom out" /></td>
<td>Zoom out (minimum — 50%)</td>
</tr>
<tr>
<td><img src="image" alt="Zoom in" /></td>
<td>Zoom in (maximum — 400%)</td>
</tr>
</tbody>
</table>

### 12.2.1.6. PLAN WINDOW TOOLBAR

<table>
<thead>
<tr>
<th>button</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Show dependent trees" /></td>
<td>Show dependent trees</td>
</tr>
<tr>
<td><img src="image" alt="Show details window" /></td>
<td>Show details window</td>
</tr>
<tr>
<td><img src="image" alt="New plan" /></td>
<td>New plan</td>
</tr>
<tr>
<td><img src="image" alt="Edit plan" /></td>
<td>Edit plan</td>
</tr>
<tr>
<td><img src="image" alt="Delete plan" /></td>
<td>Delete plan</td>
</tr>
</tbody>
</table>
27 КС

12.2.2. HOTKEYS

<table>
<thead>
<tr>
<th>keystrokes</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl+C</td>
<td>Get selected item(s)</td>
</tr>
<tr>
<td>Ctrl+V</td>
<td>Move item(s)</td>
</tr>
<tr>
<td>Ctrl+P</td>
<td>Add item(s) to Plan</td>
</tr>
<tr>
<td>Alt+↓</td>
<td>View properties window for the selected item</td>
</tr>
<tr>
<td>F5</td>
<td>Refresh data</td>
</tr>
<tr>
<td>Delete</td>
<td>Delete selected item(s)</td>
</tr>
<tr>
<td>Ctrl+N</td>
<td>Create new item(s)</td>
</tr>
<tr>
<td>Ctrl+ Alt+↓</td>
<td>View a dependent graphical window for tree window</td>
</tr>
</tbody>
</table>

12.2.3. DROPDOWN MENU.

↓ in Tree window or in Graphical Navigator window to view dropdown menu

12.3. WORKING WITH TREE WINDOW

To work in location tree, ↓ select Storage location structure

NOTE

The item, being deleted from Storage location structure, is automatically moved to Lost & Found structure. Do not delete any objects contained in Lost & Found structure.
12.4. WORKING WITH ITEMS

12.4.1. ITEM PROPERTIES

1. ‡ to select item in Tree window.

2. ‡ Alt+‡

or Properties on dropdown menu.

or ‡ on toolbar of Tree window.

Object properties window contains tabs for main and detailed description of each object, its relocation history and photograph. ‡ the required tab to view the corresponding panel.
12.4.2. MOVING ITEMS

1. ▼ [IMS] toolbar

2. ▼ to select the item in [Tree window] to be moved.

3. Select ▶ [Get selected item(s)] Ctrl+C from dropdown menu,

   or ▼ on [IMS] toolbar.

   or ▼ Ctrl+C

4. ▼ to select the object where the item needs to be placed.

5. Select ▶ [Move item(s)] Ctrl+V from dropdown menu,

   or ▼ on [IMS] toolbar.

   or ▼ Ctrl+V

When including the item in work:

Open [Object properties] per 12.4.1.
Click Main tab.
Open STATUS list
▼ to select ‘Installed’
▼ on toolbar of [Object properties].

12.4.3. SEARCHING FOR ITEM ON THE SYSTEM

1. ▼ on [IMS] toolbar.

2. Search window:

   Search parameters
   Search condition
   Parameter value

   ▼ to obtain queries list

   ▼ to obtain search parameters list

   ▼ to obtain search conditions list

   Item search results display area
3. ▼ to select the search parameter

<table>
<thead>
<tr>
<th>Search window</th>
</tr>
</thead>
<tbody>
<tr>
<td>START AND ▼</td>
</tr>
<tr>
<td>ACRONYM ▼</td>
</tr>
<tr>
<td>▼ F/ND NUMBER</td>
</tr>
<tr>
<td>▼ S/N</td>
</tr>
<tr>
<td>▼ CAGE CODE</td>
</tr>
<tr>
<td>▼ ACRONYM</td>
</tr>
<tr>
<td>▼ RUSSIAN NAME</td>
</tr>
<tr>
<td>▼ ENGLISH NAME</td>
</tr>
<tr>
<td>▼ BARCODE</td>
</tr>
</tbody>
</table>

If it is required to add other search parameters:

> ▼ ▼ on Search window toolbar

If it is required delete some search parameters:

> ▼ ▼ on Search window toolbar

4. ▼ to select search condition:

[Image: equal sign]

5. Input value for selected parameter in the line to the right

NOTE

"*" in parameter value string can mean any symbol.

6. ▼ START on Search window toolbar.

The search results field will display:
structure, where the item is located,
part number, serial number, acronym, barcode and location
of the searched item in the ISS.

To display the searched item in Tree window:

7. ▼ this item in Search window

> ▼ on Search window toolbar

or ▼ this item in Search window.
12.4.4. REMOVING THE SELECTED ITEM

1.  on [IMS] toolbar.

2.  select the item to be removed in [Tree window].

3.  on [IMS] toolbar.

or  to select Delete selected item(s) Delete from dropdown menu,

or  Delete key on the computer keyboard.

12.4.5. CREATING A NEW ITEM

**CAUTION**

1. The software will not allow a user to create a new item with the part and serial numbers that are already registered in the IMS database.

2. The systems ensures the uniqueness of every barcode.

Different ways to create a new item:

<table>
<thead>
<tr>
<th>Creating a new item</th>
<th>Creating a new item from prototype</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  on [IMS] toolbar</td>
<td>1.  on [IMS] toolbar</td>
</tr>
<tr>
<td>2. Select the location to place the new item into.</td>
<td>2. select the item to be used as a prototype</td>
</tr>
<tr>
<td>3.  on [IMS] toolbar</td>
<td>3.  on Tree window toolbar</td>
</tr>
<tr>
<td>or on [Ctrl+N].</td>
<td>4.  on Object properties window toolbar. The new window will have ‘duplicate’ in the status line</td>
</tr>
<tr>
<td>4. Complete data input fields in new Object properties window. Data is to be typed into empty fields</td>
<td>5. In Object properties window, edit the existing information inherited from the prototype as required</td>
</tr>
<tr>
<td>5.  on Object properties window toolbar.</td>
<td>6.  on Object properties window toolbar.</td>
</tr>
</tbody>
</table>
12.5. GRAPHICAL DISPLAY OF ITEMS

1. ![Image](image1.png)
   ISS modules and compartments will be enclosed within borders

2. ![Image](image2.png)
   Inside border shows contents of modules, compartments, panels, stowage bags

3. ![Image](image3.png)
   Inside border will display a graph window with contents of modules, compartments, panels, and stowage bags
12.6. SYSTEM MODES

12.6.1. WORKING ACCORDING TO PLAN

12.6.1.1. PLAN APPROVAL

1. "on IMS toolbar

2. " on Plan window toolbar to bring up two Tree windows, one window showing the current locations of items, the other – their planned locations.

   NOTE
   When " on Plan window toolbar, two Tree windows become superimposed on one another, drag them apart.

3. " select the plan.

4. " to mark the moved items.

5. " in Plan window.
   The current locations of the items will be overwritten with the planned locations; the checkmarked lines will be deleted from the list.
12.6.2. EXPORTING THE DELTA FILES

1. Start the IMS control software per 12.1.

2.IMS menu.

3. to select

A Delta file containing the latest changes will be automatically generated.

4. After message 'Successfully completed' appears: OK to accept

or in upper right corner of Export window

When getting an export error message:

record the name of export operation where process has failed.

on Export window.

Report to MCC-M

5. Move Delta file from IMS_EXPORT folder on Desktop to Ttsend folder on Desktop (D:\Us_tts\D_send\Ttsend).
12.6.3. IMPORTING THE DELTA FILES

Wiener Power

1. Open Otp folder on Desktop (D:\Us_tts\D_recv\Otp).

2. Move the required Delta files from Otp folder on Desktop to IMS_IMPORT folder on Desktop.

3. Start the IMS control software per 12.1.

4. вт IMS in IMS menu.

5. Select .

4. Import completion confirmation:

6. After message 'Successfully completed' appears:

↓ OK to accept

or ↓ in upper right corner of Import window.

When getting an import error message:

record the name of import operation where process has failed.

↓ Cancel on Import window

4 -cancel process

↓ Yes

↓ OK in Import

Report to MCC-M
12.6.4. REPORT GENERATION

1. Wiener Power on Desktop.

2. In address field, select from dropdown list:

3. Соединение с MsSQL (Connecting to MsSQL Server)

4. Input name, password (crew,123), Да (Yes) to accept.

5. Отчеты (Reports)

   ![Diagram of report generation process]

   ↓ to select report

   ↓ report object

   ↓ Load Report
6. Отчет Crystal Report

7. в Отчет Crystal Report to create a report file.

8. OK
12.7. EXITING THE PROGRAM

1. To save workspace
   ‡ on IMS toolbar

2. ‡ in upper right corner IMS.

   or ‡ on IMS menu.

   ‡ to select Exit IMS

3. ‡ close application

4. ‡ YES

5. Exit Inventory Management System - Microsoft Internet Explorer
13. WIENER POWER NOTEBOOK PC OPERATION

13.1. NOTEBOOK CONTROLS AND COMPONENTS

Front View:

1. Display Panel Latches
2. LCD Display
3. Built-in Microphone
4. System Status Panel
5. Auto Tilt-up Keyboard
6. Trackpoint
7. Built-in Stereo Speakers
8. Cursor Button
9. Removable Storage Device Bay
10. Power Button
11. Power LED
12. Battery Charging LED
13. Removable Battery Module
14. PCMCIA Slots (two)
Bottom View:

1. Battery Pack Latch  
2. Memory Compartment Screw  
3. Hard Disk Module Screws  
4. Storage Device Module Latch

Rear and Side View:

1. ⌠ External Microphone-in Jack  
2. ⌠ Audio Line-in Jack  
3. ⌠ Headphone Jack  
4. ⌠ IR Infrared Port  
5. ⌠ Kensington Lock  
6. ⌠ DC-in DC-in Jack  
7. ⌠ Serial Port  
8. ⌠ Parallel Port  
9. ⌠ Game/MIDI Port  
10. ⌠ VGA Port  
11. ⌠ TV Video Out Port  
12. ⌠ Docking Connector  
13. ⌠ PS/2 Keyboard/Mouse Port  
14. ⌠ USB Port  
15. Cooling Fan Outlet
13.2. NOTEBOOK STATUS INDICATORS

Status indicators include two LEDs and System Status Panel

13.2.1. LED INDICATORS

<table>
<thead>
<tr>
<th>LED</th>
<th>System</th>
<th>Status</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power</td>
<td>□ Green</td>
<td>Computer is in the ON mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Green</td>
<td>Computer is in the Standby or Suspend Mode</td>
</tr>
<tr>
<td>2</td>
<td>Battery</td>
<td>□ Orange</td>
<td>Battery pack is fully charged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Orange</td>
<td>Battery pack is charging</td>
</tr>
</tbody>
</table>
13.2.2. SYSTEM STATUS PANEL
Status Panel is located under the LCD display panel
Status Panel indicators informs you about the Wiener Power PC's current operating status

<table>
<thead>
<tr>
<th>Key</th>
<th>Element</th>
<th>Status</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Management Status</td>
<td><img src="image1" alt="Icon" /></td>
<td>Indicates that the system is in the ON state</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image2" alt="Icon" /></td>
<td>Indicates that the power is ON and the system is in the Standby or Suspend Mode</td>
</tr>
<tr>
<td>2</td>
<td>AC Power-in</td>
<td><img src="image3" alt="Icon" /></td>
<td>Indicates that the system is operating on AC power.</td>
</tr>
<tr>
<td>3</td>
<td>Battery Gauge &amp; Charging Status (four bar gauge)</td>
<td><img src="image4" alt="Icon" /></td>
<td>All four bars are black (battery is fully charged).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image5" alt="Icon" /></td>
<td>Blinks when battery is charging.</td>
</tr>
<tr>
<td>4</td>
<td>FDD Activity</td>
<td><img src="image6" alt="Icon" /></td>
<td>Indicates that the system is accessing the floppy drive</td>
</tr>
<tr>
<td>5</td>
<td>HDD Activity</td>
<td><img src="image7" alt="Icon" /></td>
<td>Indicated that the hard disk is being accessed.</td>
</tr>
<tr>
<td>6</td>
<td>CD-ROM Activity</td>
<td><img src="image8" alt="Icon" /></td>
<td>Indicated that the CD-ROM is being accessed.</td>
</tr>
<tr>
<td>7</td>
<td>PC Cards Activity</td>
<td><img src="image9" alt="Icon" /></td>
<td>Indicated that no PC cards are inserted</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image10" alt="Icon" /></td>
<td>Indicated that a PC card is inserted in the lower slot.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image11" alt="Icon" /></td>
<td>Indicated that a PC card is inserted in the upper slot.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image12" alt="Icon" /></td>
<td>Indicated that PC cards are inserted in both slots.</td>
</tr>
<tr>
<td>8</td>
<td>Caps Lock</td>
<td><img src="image13" alt="Icon" /></td>
<td>Indicates that [Caps Lock] is activated.</td>
</tr>
<tr>
<td></td>
<td>Num Lock</td>
<td><img src="image14" alt="Icon" /></td>
<td>Indicates that [Num Lock] is activated.</td>
</tr>
<tr>
<td></td>
<td>Embedded Numeric Keypad Lock</td>
<td><img src="image15" alt="Icon" /></td>
<td>Indicates that the Embedded numeric keypad is activated.</td>
</tr>
<tr>
<td></td>
<td>Scroll Lock</td>
<td><img src="image16" alt="Icon" /></td>
<td>Indicates that [Scroll Lock] is activated.</td>
</tr>
</tbody>
</table>
13.3. POWERING UP PC AND BOOTING INTO OPERATING SYSTEM

1. Open computer cover
2. Power LED
3. (hold for 1-2 sec) power button
4. Power LED
5. Window "Begin Logon"
6. Prompt "Press Ctrl+Alt+Del to log on"
7. Ctrl+Alt+Del.
8. Logon Information.
9. Input username and password

<table>
<thead>
<tr>
<th>Name: input field «User name»</th>
<th>crew</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password: input field «Password»</td>
<td>123</td>
</tr>
</tbody>
</table>

10. OK
11. Desktop
13.4. UPGRADING IMS SOFTWARE

Wiener Power

1. Power up computer per 13.3
2. Install CD entitled «ИЗМЕНЕНИЯ IMS» (Upgrading IMS Software)
3. Copy folder IMS from the CD to folder C:\InetPub\wwwroot\ims

3. <Confirm File Replace>

4. ↓ Yes to All

5. Copy file IMS.dat from the CD (F:\Mssql\Backup) to folder D:\Mssql\Backup

13.4.1. UPDATING DATABASE

Wiener Power

1. ↓ Microsoft SQL Server 6.5 folder icon on Desktop
   ↓ SQL Enterprise Manager
   or ↓ Start/Programs/Microsoft SQL Server 6.5/SQL Enterprise Manager.
2. <Microsoft SQL Enterprise Manager>
3. <Server Manager>
4. SQL 6.5\Wiener (SQL Server 6.50)\Databases

5. IMS_joint

6. menu:

7. Backup/Restore

8. Database Backup/Restore - WIENER

9. menu item «Restore»
10. IMS_Joint

11. From Device...

12. Restore From Device On Server – WIENER
13. Add File...

14. Add Backup Disk File - WIENER

15. to select File Name

16. Locate Backup File - WIENER

17. D:\MSSQL\BACKUP\IMS.dat

18. IMS.dat

19. Add Backup Disk File - WIENER

20. OK

21. Restore From Device On Server – WIENER

22. Restore Now
23. Restore Progress

![Restore Progress](image1)

Database update process takes about 2 min

24. Restore Progress

![Restore Progress](image2)

25. OK

26. to close all currently open windows

27. Exit «Microsoft SQL Enterprise Manager» program
13.5. SHUTTING DOWN AND RESTARTING PC

1. **Alt+F4**
   - Start on Desktop
   - select 'Shut down…' option

2. **Shut Down Windows**

![Shut Down Windows](image)

3. To shut down the PC, select ‘Shut down the computer?’ option, **YES**
   or to restart the PC, select ‘Restart the computer?’ option, **YES**.

4. **Shutdown computer**
   to shutdown the PC - **(hold for 3---5 sec)** power button,
   or to restart the PC - **Restart**.