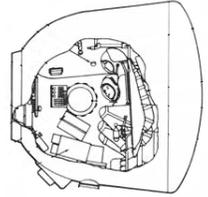


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SOYUZ ESCAPE CAPSULE RESPONDING INSTRUCTIONS



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1. _____ astronauts from the International Space Station were forced to land on board of the Russian Soyuz vehicle in the United States in the vicinity of _____ N Latitude, _____ W Longitude. (Actual landing site may be within a 150 _____ mile radius of these coordinates.) Updated coordinates of the landing site may be obtained from AFRCC or DDMS. These instructions are for the Search And Rescue (SAR) organizations and Law Enforcement Officials rendering assistance.
2. All federal, state and local Search & Rescue actions must be coordinated through the Air Force Rescue Coordination Center (AFRCC) at [DELETED].
3. Contact the Department of Defense Manned Space Flight Support Office (DDMS) with questions at [DELETED]. Call collect if necessary.
4. **HAZARDS AND SAFETY:** Minimize risk to rescuers and the astronauts inside the capsule.
 - a. Capsule weighs 5,000lbs - shaped like drawing at top of page - If on its side chock capsule with rocks or other items before opening hatch.
 - b. Parachute cover and heat shield will fall separately from Soyuz capsule. If found, mark and secure..
 - c. "Soft-Landing" thrusters fire at 3 feet above ground - STAY CLEAR until after touchdown.
 - d. DO NOT APPROACH capsule for at least 10 minutes after landing - antenna covers will explosively jettison - STAY CLEAR 150 foot radius from capsule (see Slide #1).
 - e. There is a low level radiation hazard area clearly marked on the bottom of the capsule (SEE Slide #2 for hazards) STAY CLEAR 15 foot radius from bottom of capsule.
 - f. If one set of risers is separated by pyro device, there is no hazard-if both risers are still attached, radio contact (communication) with the crew has to be established and the crew has to be advised to activate pyro device and separate one set of risers. AVOID until riser separation task is performed by the crew. Otherwise wind gust can move the capsule. In case if the crew is unable to perform this task manually cut one set of risers to deflate parachute as shown on slide # 4.
 - g. If capsule side roll is required proceed with caution in accordance with the Note in Section 9.
5. **LOCATING SOYUZ CAPSULE:**
 - a. Main Parachute about 75 feet in diameter - red and white stripes like a bulls-eye.
 - b. Light Beacon operating in a strobe mode.
 - c. Morse code: "AN" (dot, dash, dash, dot) broadcast on VHF 121.5 during descent.
 - d. Emergency Locator Transmitter warble on VHF 121.5 interrupted only by crew broadcasts.
 - e. Crew has a survival radio with beacon and voice capability on VHF 121.5 and UHF 243.0 if crew had left capsule.
 - f. Survival kit also includes: signal mirror, smokes, flares, and light signals.

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6. APPROACH:

- a. Before approaching the capsule, STOP at 150 feet. Visually inspect capsule to ensure antennas have deployed. Ensure parachute is deflated.
- b. Ensure ALL rescuers are aware of hazards.

7. COMMUNICATING WITH CREW (after Soyuz Capsule is located):

- a. Communicating with the astronauts is ESSENTIAL. They can help rescuers with information about rescue, extraction, and medical issues.
- b. Attempt voice communication on VHF 121.5.
- c. If no radio, use “knocking signals” below on window or side of Soyuz Capsule. Use rock or other hard object (be careful not to break window).

Signal	Rescuers “say...”	Astronauts “say...”
Series of frequent knocks (5 or more) (.....)	“How are you?”	“We are good.”
One knock or silence (.)		“We are bad.”
Three double knocks (.. ..)	“Prepare for lift of Soyuz capsule with crew onto ship.”	“We are ready to evacuate.”
Two separate knocks (. .)	“Prepare to exit.”	“We are ready to exit.”
Three separate knocks (. . .)	“Evacuate capsule.”	“We are exiting capsule.”

8. MEDICAL ISSUES:

- a. Known serious pre-existing medical problems will be forwarded on an additional sheet of paper.
- b. “Space Sickness” may result with astronauts return to gravity -- takes approx. 20 minutes to re acclimate -- Astronauts WILL need assistance exiting capsule.
- c. Sokol space suits have a single zipper, but can be cut off to facilitate medical treatment.
- d. Crew should be taken ASAP to the nearest/best medical facility (preferably a Trauma-rated hospital).
- e. Crew can stay sealed inside for up to 15 hours. If necessary, they can activate a vent for outside air.
- f. Upon landing, the crew undergoes heavy physical and mental stress (shock). They should be MEDEVAC’d in a prone position if possible.
- g. For more detailed information see “Crew Extraction and Medical Support at a Contingency Landing Site”.

9. REMOVING CREW FROM CAPSULE:

NOTE: If necessary, capsule can be rolled to the upright position (from the side position) by 5-6 men. THIS IS EXTREMELY DANGEROUS FOR THE RESCUE CREW. Only attempt this in an emergency or if requested by the crew and after notifying the crew of your intentions. STAY CLEAR from capsule for 10 minutes after completion of this operation, one of antennas can deploy automatically.

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- a. Opening the crew hatch requires a special tool. There are three tools safety-wired to the outside edge of the bottom of the capsule. They can be easily removed in both upright and side landing scenarios (see Slides #2 & #3 for location and instructions). The crew can open the hatch from inside but may be too weak to do so.
- b. To gain access to the hatch in the upright capsule orientation, rescuers will need ladders or a vehicle nearby to step on.
- c. Once you open the hatch, only 1 astronaut can be removed at a time. Begin with the one in the center seat. Depending on the orientation of the capsule and the status of the astronauts, rescuers may have to make a harness to lift the astronaut out of the hatch.
- d. Upon completion of the crew extraction hatch has to be closed per slide # 3.

10. AFTER CREW IS TAKEN TO HOSPITAL:

- a. Senior Law Enforcement Officer: Arrange security watch for capsule. NASA contractors will arrive within 24 hours to begin processing of the capsule. Upon their arrival, they will assume control and security requirement for the capsule.
- b. Guard all items--capsule, parachute, and all other items--as EVIDENCE. DO NOT enter the capsule or remove any items.

11. WATER LANDING RESCUE: Water evacuation of astronauts is the MOST DIFFICULT of all scenarios.

- a. The above procedures must be adjusted to deal with a landing in lake or in the ocean. Several factors must be taken into account: crew condition, wave height, bottom depth, current, etc. Actual response will be dictated by real-time conditions and On-Scene Command Authority. NOTE: In case of water landing crew will immediately release both sets of parachute risers.
- b. Prior to attempting rescue, communicate with astronauts on VHF 121.5. If they are able to exit the capsule on their own, this is best. Crew is trained to exit capsule on its own and possesses necessary survival skills in water. Exit from capsule to water can be performed only if crew is in good medical condition. If not, all subsequent rescue actions should be coordinated with the crew. All available rescue boats/ships and/or helicopter have to approach capsule. SECURE the Soyuz Capsule to side of boat/ship prior to rescue attempt. Unless it is secured, the capsule will tip when rescuers attempt to get to the hatch. The capsule can fill with water and sink if waves wash into hatch.
- c. If the situation is grave and a hoist or crane is available onboard ship (or if helicopter can be utilized), capsule can be lifted (or towed) by steel cable that attaches to the harness of parachute system remaining on capsule after separation of the parachute risers (see slide # 4). NOTE: Soyuz Capsule weighs about 5,000 lbs. Allowable towing speed is 2 knots at sea state up to 3.
- d. Once the crew is rescued, attempt to save/secure capsule if at all possible. Close capsule hatch if possible.

NOTE TO ALL RESCUERS: Because of the national and international importance of rescuing the International Space Station astronauts, it is imperative to accomplish this mission as quickly, safely, and as efficiently as possible. **If you have questions about the overall rescue effort, contact the Air Force Rescue Coordination Center at the telephone number at the bottom of this page.**

If you have any questions about the instructions above or need additional information regarding the astronauts or capsule, contact the Department of Defense Manned Space Flight Support Office

Air Force Rescue Coordination Center
Department of Defense Manned Space Flight Support Office

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at the telephone numbers at the bottom of this page. The Department of Defense Manned Space Flight Support Office (DDMS), located at Patrick Air Force Base, Florida, is the sole organization tasked to command and control Department of Defense support to the Space Shuttle Program. This tasking has evolved into supporting International Space Station and its astronauts as well. DDMS experts can help you with questions and requests for additional help in your attempts to rescue the astronauts inside the Soyuz capsule.

NOTE TO ON-SCENE COMMANDER: The Department of Defense Manned Space Flight Support Office (DDMS) is your liaison with NASA. Please keep us informed of status of astronauts and the capsule. We will assist with follow-on support and bringing NASA personnel to the site. **Please contact DDMS at the phone number at the bottom of this page at your earliest convenience. Call collect if necessary.**

ADD SLIDE #4 (WILL BE SUPPLIED BY RSC ENERGIA) SEPARATION OF PARACHUTE FROM SOYUZ CAPSULE.

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