

## Texan Deployment Information

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### Description of Texan

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- Hold the Texan so that the connectors are facing toward you and the words are right side up, you are now looking at the face of the Texan. Located on the face are the Terminal connector (the large connector), the sensor connector (the small connector), the LED light (indicates the State of the Texan) and the Status button (push to activate the LED).
- The Texan's Serial Number is located on the right side of the Texan face just above the words "SINGLE CHANNEL DIGITIZER". Use this Serial Number for deployment sheets.
- The Barcode of the Texan is the seven digit number located on the cylindrical body of the Texan. Do not cover this with any markings or warning labels. Also located on the barcode sticker is again the serial number of the Texan, this is a 2 to 4 digit number.

### Description of a Geophone

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- The geophone consists of an orange or red sensor with a spike on one end, the geophone cable and the geophone connector. The round brass tag that is on some of the geophone cables is NOT the serial number to report on the deployment sheets.

### Demonstration of how to put together a geophone and Texan

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- Put the geophone connector on to the sensor connector on the face of the Texan, spin the geophone connector clockwise until it falls into place then push down and turn 1/8th of a turn more until the geophone connector is secured onto the sensor connector of the Texan.
- Give a gentle tug on the geophone connector to make sure it is secure.
- Hint: use a very small amount of water/ saliva to wet the o-ring to make the connection easier.

### Demonstration of how to properly change the batteries in a Texan

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- Insert the 3/8in breaker bar at the base of the Texan. Turn counter clockwise to undo the battery case lid. Beware that the threads are greased.
- Hold the Texan with the open battery case parallel to the floor.
- Insert D-Cell batteries - positive (+) post toward the face of the Texan. Do not drop batteries into the battery case, this can cause damage to the small spring at the top of the battery case.
- Replace the battery case lid - make sure the threads are aligned correctly.
- Do not "crank-down" on the battery case lid. Just tighten to the point of gentle resistance.
- Make sure the battery case lid is flush with the bottom of the Texan

case. If not, open the battery case lid and realign the threads.

#### Description of a typical Deployment/Retrieval Sheet

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(PI and team should do this if PI is providing Deployment/Retrieval Sheet).

#### Typical Deployment/Retrieval Sheets Include:

- Stake or site number
  - Place for Texan Serial Number (deployment and retrieval).
  - Place for GPS waypoint number and written location (fill in both at deployment and retrieval).
  - Place for Texan Status
  - Place for time of deployment/retrieval
  - Place for Notes
- (See Passcal Example Deployment Sheet)

#### Demonstration of basic GPS functions

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(PI and team should show GPS functions if PI is providing GPS).

Specific GPS function menus will vary depending on the type of GPS used.

- Know how to tell if GPS is locked and number of satellites it sees.
- Know how to determine the position format and map datum and change if required. (Recommended settings: hdd.dddd and WGS84 respectively)
- Know how to make and follow a saved track.
- Know how to mark a waypoint and change the waypoint name.
- Know how to find a saved waypoint.

#### Deploying a Texan

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#### Before leaving the instrument center:

- Push all of the status buttons to make sure the LED's blink green. If there is no LED light or the LED is red, see a Passcal Staff member to fix the problem.
- Count your Texans and make sure you have the correct number you need to deploy.
- Count out only as many geophones as you will need (plus 1 extra if available) and remember to take them with you.

#### At each deployment site:

- Push the status light on the Texan before deploying it. If it is green, deploy it. If it is red, do not deploy it.
- Write down the Texan serial number deployed at that spot.
- Texan and connector end plus the connector cap into a plastic bag. Twist bag closed and tape to hold. It is not necessary to tape to the geophone cable.

Don't pickup or carry the instrument set by the geophone cable.

#### Planting a Texan

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- Make an oblong hole about 6in (0.15m) to 18in (0.45m) deep for the geophone end of the hole. The depth of the hole depends on the type of soil.
- Put the geophone in the deepest part of the hole, spike down and tightly coupled to the ground. Watch out for rocks - do not use

shovel or tool to pound geophone into the ground, this could bend the geophone spike.

- Level the geophone with a bubble level - put the bubble level on the top of the geophone and make sure that the bubble is within the circle. Secure geophone in this position with soil around the base.
- Extend the geophone cord away from the geophone and place the Texan either in the hole with the geophone, point the connector side angled down towards the geophone, or on the ground well hidden by bushes or rocks and secured so it will not roll around in weather elements.
- Recheck the level on the geophone and completely bury geophone and the Texan if you are burying the Texan.
- Mark a waypoint in the GPS of the exact location of the Texan on the ground. Write in your notes and on the deployment sheet the GPS location reading and the accuracy of the GPS at the time.
- Pace off about 10-15 steps in any direction away from the Texan (N, S, E, W) and then 2 paces left or right. Note number of steps, direction of each paced segment in your notes. The same person should do this every time for uniform stride length. Mark this spot with flagging tape or paint. If you are near a road - walk to the road from the paced off spot and write the number of paces from the road. Mark this area with flagging tape and write this location in your notes as well.
- Look around you. Make lots of notes about the area; take digital pictures if you think it will help.

#### Deployment Hints =====

- Don't rush deploying. Take your time and be methodical about what you are doing.
- Make many notes. Things can look different when you return (it could have rained, they mowed the grass, etc.)
- Do not deploy instruments in cultivated areas. Tillage implements easily destroy an instrument. If a station is located in a cultivated field or garden, talk to the land owner about the state of the field or move the station to a hedge or fence on the edge of the area and if required call for a resurvey.
- Do not deploy in dry river beds, gullies, washes or any depressions in the land. These can easily flood or fill with water and either bury the instrument further or wash the instrument away, making it very difficult to find. Be aware of your surroundings and do not deploy in areas prone to flooding.
- If it is raining, try to keep your notes and deployment sheets as dry as possible.
- Do not let the instruments roll around in the vehicle. Secure loose instruments that do not have cases and if available use padded sleeves to cushion.

#### Anti-Theft Hints

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- Do not deploy an instrument when there are witnesses. Wait for them to leave or turn their back or come back to the station later.
- If there have been witnesses, make an obvious decoy hole about 5m away from the actual station. Hide the actual station very well.
- When deploying instruments near houses, talk with the owners and explain what you are doing. Ask them to help by watching over the instrument.
- When talking to people stress that the instrument has no monetary value (detering reward seekers), however the data obtained from the instrument is important for furthering studies about earthquakes, volcanoes, the earth structure in the area (which ever is applicable to the experiment) in simple terminology.

#### Retrieving a Texan

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- At each retrieval site, fill in all appropriate information on the instrument retrieval sheet. Note Texan LED state (red or green).
- Texans must be cleaned before putting them in the cases. Wipe down the outside with a rag if they are muddy.
- Put the connector caps (if available) back on the geophone connectors as soon as you have disconnected the geophone from the Texan.
- Return each instrument to its assigned slot in the transit cases. If you do not have the transit case corresponding to an instrument, use a spare slot or leave out of case. This can be done upon returning to the instrument center or as you retrieve the instrument.
- Clean the geophones - spike, geophone, cable and connector. These can be hosed down and then wiped off.
- Check your instrument deployment sheet against the instrument retrieval sheet and count to make sure you have all of the instruments you deployed before leaving your deployment area. If you are missing an instrument it is your responsibility to find it. Return the rest of the instruments to the instrument center first and then go back to look for the missing one.

#### Pickup Hints

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- Use the same sets of eyes to retrieve the instruments as were used to deploy the instruments.
- Do not use a pick, a shovel, or other tool to dig up a Texan. Only use your hands. Tools can damage the instrument or geophone cable.
- Do not let the instruments roll around in the vehicle. Secure loose instruments that do not have cases and if available use padded sleeves to cushion.