

# Geophysicist

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Geophysicists may find their skills sought after in the search for oil and gas, in the surveying and assessment of potential sites for offshore installations, and in the optimal routing of pipelines and cables.

Different naturally occurring features (such as rocks and fluid-filled sediments) and different types of man-made objects (such as wrecks and pipelines) have different geophysical characteristics. The geophysicist uses state of the art equipment to differentiate between these features in order to map their extent. The different properties measured are electric (resistivity surveys), electromagnetic (ground penetrating radar surveys), seismic (reflection and refraction surveys), field potential (gravity and magnetic surveys) and radioactive (radiometric surveys).

Whether you become an engineering geophysicist profiling bedrock topography and structure, an exploration geophysicist delineating potential hydrocarbon reserves or a seismologist studying and predicting earthquakes, there are certain basic activities that you will be required to master. These include:

- ◆ design of geophysical surveys
- ◆ setup and tuning of geophysical survey equipment in the field
- ◆ online quality control of the geophysical survey data
- ◆ offline interpretation of the geophysical survey data
- ◆ survey report writing



The requirement for design, quality control and interpretation skills makes the geophysicist especially valuable in the offshore survey industry.

Career opportunities in the offshore industry for the geophysicist are good with the offshore producers exploring ever deeper waters for hydrocarbon reserves, and requiring more detailed geological information. As well as opportunities with major oil companies and seismic exploration companies there are a number of other marine survey companies that employ geophysicists in staff and contract positions both onshore and offshore.

## Education and Qualifications Required

A strong background in science, in particular earth sciences and/or physics, is important.

A degree in earth sciences, geology or geophysics is usually required for entry into geophysicist positions. However, persons with strong backgrounds in physics, chemistry, mathematics, or computer science may also qualify for some of these posts.

## Skills and Training Required

Ongoing training and assessment of geophysicists within the offshore industry has now been enhanced by the IMCA guidance on competence assurance and assessment that was launched in January 1999. The scheme sets out specific competence criteria for offshore safety-critical positions including:

- ◆ Geophysicist Grade II
- ◆ Geophysicist Grade I
- ◆ Senior Geophysicist
- ◆ Party Chief

To work offshore in any capacity it is usually necessary to complete a basic offshore safety induction and emergency training (BOSIET) course. This generally includes first aid, safety at sea, the basics of fire and fire fighting and helicopter underwater escape training (HUET). In many regions, someone who has not successfully completed a course of this nature will not be permitted to work offshore.

### Medical Fitness

In many areas of the world, potential offshore workers must undergo and pass a special medical examination. These requirements may vary from country to country, but usually involve a medical leading to a certificate which may be valid for one or more years. The requirements are not unduly onerous for fit and active people but certain common conditions, or previous injuries can be a cause for failure. If in any doubt, interested persons should seek out a doctor knowledgeable about offshore standards, before they seek work or embark on a course of training.

### Working Conditions and Prospects

Geophysicists can expect to experience overseas travel. They have to be resourceful, resilient and be able to work in a team environment. Due to the nature of the geophysicist's role within the industry they also have to be self-motivated and good communicators.

After 5-7 years field experience it is possible for a geophysicist to become a party chief (supervisor of a multi-disciplined offshore team). Many move on into managerial or technical support roles onshore. Prospects for moving up through the ranks are good, for the ambitious there is no limit to what can be achieved.

### Further Information

For a list of educational establishments, including details of entry qualifications, visit

[www.imca-int.com/divisions/survey/profile/personnel/training/](http://www.imca-int.com/divisions/survey/profile/personnel/training/)

For contact details of offshore survey contractors in IMCA membership contact IMCA or visit

[www.imca-int.com/members/survey.html](http://www.imca-int.com/members/survey.html)