

and English realize that when a well is located in a body of water, where drilling is 10 times more expensive than on dry land, this method must be used. In the Soviet Union we used this method before, during, and after the war, yet today we do not use it, and even the equipment has been discarded.

Apart from hydraulic fracturing, there are other methods aimed at increasing output - specially directed explosions, treating the shaft with various chemical solutions, and using ultrasound on the oil deposits to reduce the oil's viscosity. Drilling into other 'levels' in a timely fashion after a preliminary search for fields with high-yield seams would also reduce total expense.

The costs of exploration could also be reduced by using contemporary scientific and technical achievements, above all, aerial photography with infra-red techniques, the latest forms of seismic and electrical exploration, and geochemical methods which would make it possible to discover and chart hydrocarbon deposits without drilling. These are so-called 'direct' methods, which are revolutionizing raw material exploration. In order to understand the innovative nature of the methods, suffice it to say that before this method was discovered, out of 100 test wells drilled, only 30 had oil or gas deposits, while 70 were empty - and this was true both in the Soviet Union and abroad. Using the new exploration methods, these figures are reversed. Exploratory drilling becomes essentially a confirmation of the predictions made by 'direct' methods.

This past year I repeatedly proposed to assist the Ministries for the Oil and Gas Industries and the Ministry of Geology in establishing a