



LLC "ZAO AMT"

Automation of
Oil and Gas

Industry
Technologies

Monitoring

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AMT-241

SHELF AND OFFSHORE DRILLING TRAINING SIMULATOR

AMT-241 training simulator is designed for training the drilling crews and engineering staff of the oil and gas production enterprises, well-kill teams and students of drilling specialties in shelf and offshore drilling technological operations using subsea blowout preventers



The simulator allows the trainees to understand the mechanisms of interaction of a bit, tools, drilling fluid, surface and subsea equipment with the well and to see processes occurring in the well and hidden from direct observation, as well as appearance and development of complications and emergencies. It allows the trainees to check and compare different solutions to technological problems.

Imitation in Real and Fast Time Scale

- Well drilling processes at the stages of face advance, tripping, casing;
- Reaction of drilling equipment, tools, well to the trainee's work on drilling equipment control panels and stations;
- Appearance and development of complications and emergencies, including oil and gas shows and blowouts;
- Elimination of oil and gas shows and blowouts (in different ways);
- Processes occurring in control panels of subsea blowout preventers, diverter and in hydraulic accumulators;
- Tripping under pressure through the closed subsea preventer;
- Integrity test of the reservoir below the casing shoe;
- Well drilling controller readings characterizing the condition of the drilling equipment, tools, well;
- Different (without limitation) geotechnical conditions of drilling: Well log, design, set of drilling equipment, tools, turbine and rotary drilling;
- Non-standard situations during drilling and tripping.



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Instructor Operation Station

The simulator software includes training task (training scenario) design tools with any geotechnical drilling conditions and non-standard situations.

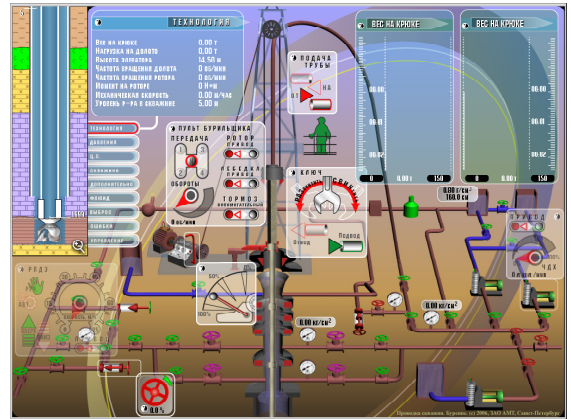
The instructor may create complications and emergencies while the trainee is performing the task, in addition to preplanned complications and emergencies in the training task scenario.

It is possible to stop and restart the technological process simulation in any place, to repeat the situation and conditions of the training task performance.

During technological process simulation the following data are displayed: Numerical characteristics of geotechnical conditions, graphs of the most important controlled technological parameters and animation displaying real-time operation of the rig equipment and condition of the well.

The software keeps a training process log for each trainee, forms a training report, enables to assess the trainee's actions using time graphs of technological parameters after the training session and prints these graphs.

We help to create training scenarios on the simulator according to the geotechnical conditions of the drilling process performed by the customer.



Противовыбросовое оборудование	
Расстояние от ротора до дивертора, м	1.50
Дивертор	Дивертор - 350 - 35
Макс. давление уплотнения пакера дивертора, бар	25.0
Макс. давление уплотнения линии дивертора, бар	25.0
Макс. давление в шаровом шарнире, бар	25.0
Универсальный превентор (верхний)	ПУГ - 350 - 350
Высота соединителя райзера, м	1.0
Универсальный превентор (нижний)	ПУГ - 350 - 350
Срезающий превентор	ППГ - 350 - 700
Плашечный превентор (верхний)	ППГ - 350 - 700
Плашечный превентор (средний)	ППГ - 350 - 700
Плашечный превентор (нижний)	ППГ - 350 - 700
Высота соединителя блока превенторов, м	1.2

Противовыбросовое оборудование	
Блок дросселирования	Др-80-700
Общая длина линии дросселирования, м	250.00
Общая длина линии глушения, м	250.00
Внутренний диаметр линии дросселирования, мм	76.2
Внутренний диаметр линии глушения, мм	76.2
Кoeff. сопротивления в линии дросселирования	0.0300
Кoeff. сопротивления в линии глушения	0.0300
Объем жидкости для закрытия гидрозаводки, м ³	0.0021
Объем жидкости для открытия гидрозаводки, м ³	0.0019

Противовыбросовое оборудование	
Рабочее давление гидромолотатора, бар	210.0
Рабочее давление насоса превентора, бар	105.0
Давление в насосе гидромолотатора, бар	190.0
Давление в насосе превентора, бар	210.0
Мин. допуст. давление гидромолотатора, бар	85.0
Макс. допуст. давление гидромолотатора, бар	221.0
Давление пред. аварийного гидромолотатора, бар	92.0
Кол-во баков гидромолотатора, шт	30
Кол-во баков блока превенторов, шт	8
Объем баков гидромолотатора, м ³	0.042
Подъем насоса гидромолотатора, м/с	0.8
Объем резервуара в резервуаре НАС, м ³	2.000
Объем резервуара в резервуаре НАС, м ³	1.000
Объем резервуара в резервуаре НАС, м ³	1.200
Мин. давление воздуха в линии управления, бар	6.0



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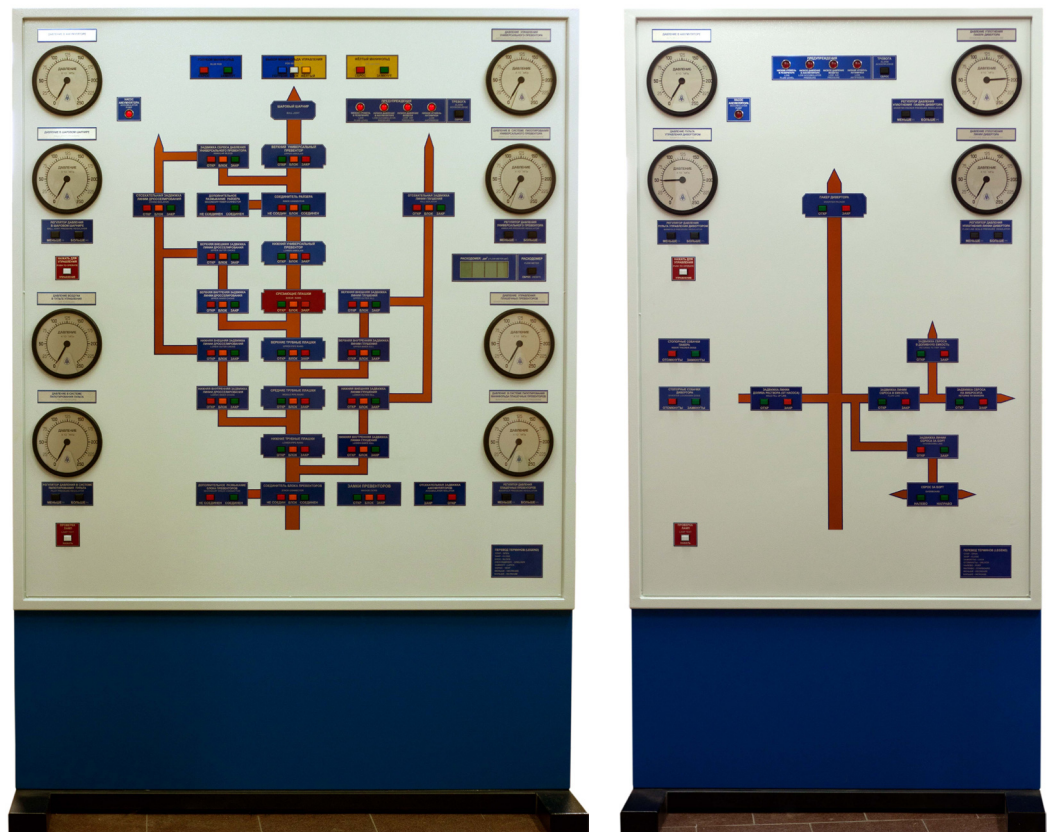
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Complex of Subsea Equipment Control Panels and Stations

AMT-241 simulator is a hard-ware-software extension for AMT-231 drilling simulator and cannot be used independently. Equipment of both simulators is working simultaneously under AMT-241 software control allowing for training in the basic technological operations during shelf and offshore well construction.

The simulator provides successful training in offshore well drilling in a safe and controlled environment. Training in critical and costly operations before the trainee faces them in practice contributes to conservation of human lives, protection of equipment and well against possible consequences of on-site errors.



Model control panels of subsea preventer and diverter simulate the real rig equipment to the greatest possible extent.



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Main characteristics of the simulator

Number of panels and stations	2
Number of simulated technological tasks	3
Number of simulated parameters characterizing the technological process, condition of the well, drilling tools and drilling equipment, well log	more than 120
Number of messages of complications, emergencies and trainees' errors	more than 120
Number of displayed parameter graphs:	not less than
• Drill-ahead	36
• Tripping	36
• Elimination of oil and gas shows	36
Simulated condition sampling rate	adjustable
AC power supply	220 V/50 Hz
Simulated condition sampling rate	up to 100 W
Footprint	not less than 5 m ²
Weight	max. 250 kg
Ambient temperature	from +15° to +35°C
Ambient humidity	max. 90%
Continuous operation time	not limited
Service life	not less than 6 years

Supply package

	Designation of simulator components	Quantity
1	Complex of panels and stations for offshore control of well drilling equipment: <ul style="list-style-type: none"> • Subsea preventer control panel • Diverter control station 	1 1
2	Software of simulation and training tasks for AMT-241 simulator	1
3	Data and power cables, self-adhesive cable ducts	set
4	Operational documentation	set

We supply our equipment, provide training and warranty support.

We support software during entire service life.

We continuously improve our products.

Thousands of oil & gas specialists in Russia and CIS were trained on our simulators.