Milestones and influences in US offshore history (1947-1997)

1940 - 1949

KEY EVENTS

- 1945 - Louisiana holds first offshore lease sale.
- 1945 - US government claims all offshore water bottoms.
- 1945 - World War II ends.
- 1946 - First independent platform offshore (Magnolia - Creole, Louisiana).
- 1947 - Platform built nine miles offshore (Ship Shoal - Kerr-McGee).
- 1947 - United Nations-US dispute over continental shelf ownership settled.
- 1947 - US government, states dispute offshore water bottom ownership.
- 1947 - First use of tender platform support (Kerr McGee - Ship Shoal).
- 1949 - 11 fields found in Gulf of Mexico with 44 exploratory wells.

KEY TECHNOLOGIES

- 1940 - Steel/concrete caissons used to support rig (Lake Maracaibo).
- 1941 - First neutron log.
- 1943 - First subsea completion (Lake Erie).
- 1945 - Power tongs and slips introduced.
- 1945 - Piston corer for ocean bottom developed (Kullenberg).
- 1947 - Oceanographer predicts 32-ft wave maximums for US Gulf.
- 1946 - First US use of steel platform pilings (Eugene Island - Magnolia).
- 1947 - First tender-supported platform (Ship Shoal - Kerr-McGee).
- 1948 - Humble Oil buys 19 Navy LSTs for tender conversion.
- 1949 - First offshore heavy lift barge (150 tons - McDermott).
- 1949 - First offshore submersible barge (Breton Sound 20 - Hayward).

1950 - 1959

KEY EVENTS

- 1950 - First application of wave force studies (Morrison).
- 1952 - US Congress grants states water bottom to 3-mile limit.
- 1953 - Texas holds first offshore lease sale.
- 1953 - US federal-states tideland dispute resolved.
- 1954 - Federal OCS program begins.
- 1955 - George Bush becomes president of Zapata.
- 1955 - Platform installation depth reaches 100 ft.
- 1955 - Five mobile drilling units in operation.
- 1957 - First discovery off Texas (High Island - Stanolind).
- 1957 - First US Gulf gas flows ashore (Shell).
- 1958 - Subsea completions proposed (McEvoy).
- 1958 - Last year that production depth equaled drilling depth (135 ft).
- 1958 - First commercial helicopter service (US Gulf - PHI).
- 1959 - Operators plan 100 wells in Lake Erie.
- 1959 - Jacket installation depths reach 200 ft

KEY TECHNOLOGIES

- 1953 - First platform jacked into position
- 1954 - First hydraulic rotary rig developed.
- 1954 - First platform for 100 ft water depths (McDermott).
- 1954 - First jackup drilling unit built (Barge No. 1 - Delong design).
- 1954 - First mat-supported jackup driller (Mr. Gus - Bethlehem design).
- 1954 - First offshore pipeline laid (Gulf of Mexico - Brown & Root).
- 1954 - First directional control bottom-hole assembly.
- 1954 - First purpose-build submersible (Mr. Charlie - Odeco).
- 1955 - First three-leg jackup driller (Scorpion - LeTourneau design).
- 1955 - Analog computers used to study ocean wave data.
- 1955 - Modern supply vessel designed (Laborde - Tidewater).
- 1956 - First deepwater bottle submersible (Rig 46 - Kerr-McGee).
- 1956 - First drillship launched (CUSS I - California).
- 1956 - First jacket launched from a barge in US Gulf (McDermott)
- 1958 - First purpose-built pipelayer (BAR 207 - Brown & Root).
- 1958 - Through-tubing workover begin offshore.
- 1958 - First wireline retrievable subsurface safety valve (Camco).
- 1959 - High temperature cement developed (Halliburton).
- 1959 - Flexible flowline installed (US Gulf - Shell).
- 1959 - Offshore rotating hoists lift 800 tons.
- 1959 - Sealed bearing drill bit developed.
- 1959 - First offshore gas compression platform (US Gulf/Shell).

1960 - 1969

KEY EVENTS

- 1960 - First multi-platform complex in US Gulf (Freeport).
- 1960 - First offshore sulfur mine completed (Freeport).
- 1960 - OPEC founded.
- 1962 - Fixed platform depth reaches 200 ft (US Gulf - Gulf Oil).
- 1963 - Oil strike in Cook Inlet, Alaska (Shell).
- 1963 - Pipelay water depth reaches 264 ft (California - Shell).
- 1965 - JOIDES deepwater coring begins (Florida - Glomar Challenger).
- 1965 - Mobile drilling fleet reaches 75 units.
- 1965 - Offshore Company becomes largest rig owner (16 units).
- 1966 - Two jackup drilling units sink (Gulf of Mexico).
- 1967 - Diving depths reach 600 ft.
- 1967 - Oil struck at Prudhoe Bay, Alaska.
- 1968 - First Offshore Technology Conference held.
- 1968 - 2,000 platforms installed, 9,000 wells drilled in US Gulf.
- 1969 - Santa Barbara (California) blowout and pipeline leak.

KEY TECHNOLOGIES

- 1960 - Towed fish locates underwater pipelines (Shell).
- 1960 - Cement bond log developed (Schlumberger).
- 1961 - Dynamically positioned CUSS I drills first MOHO well (La Jolla, California).
- 1961 - First use of dynamic-positioning (Eureka - H. Shatto).
- 1961 - Spool pipelaying developed (Aquatic Contractors).
- 1961 - Seafloor blowout preventer developed.
- 1961 - First remote control unmanned production platforms (Gulf Oil).
- 1961 - First moving seismic collection method (Socony Mobil).
- 1961 - First underwater pipeline trencher (Orinoco/Phillips).
- 1961 - First computer program for fracture/acidizing (Dowell).
- 1961 - First subsea well completed (Gulf of Mexico - Shell).
- 1962 - Divers reach 285 ft. depth (US Gulf - Ketchman).
- 1962 - Robotic forerunner of ROV begins operation (Shell).
- 1962 - Submersible for 175 ft depths (Rig 54 - Kerr-McGee).
- 1962 - Second generation drillship (Glomar II).
- 1962 - Catamaran drillship (C.P. Baker - Reading & Bates).
- 1962 - First converted semisubmersible (Blue Water No. 1 - B. Collipp).
- 1963 - First newbuilt semisubmersible (Ocean Driller - Laborde/Graham).
- 1962 - First commercial reel pipelay vessel launched (U-303).
- 1963 - Custom-built drilling fluid transport vessel developed (Baroid).
- 1964 - Twin derricks mounted on platform (US Gulf - Humble).
- 1964 - Microwave data transmission begins in US Gulf (Shell).
- 1964 - Second generation semisubmersible (Blue Water No. 2).

- 1965 - Single buoy mooring system tested (Qatar - Shell).
- 1965 - First 500-ton derrick barge introduced.
- 1965 - Common depth point seismic technique employed.
- 1965 - Low temperature steels introduced.
- 1965 - First triangular semisubmersible (Sedco 135 - Southeastern).
- 1966 - Second generation pipelay barge (North Sea - Brown & Root).
- 1966 - Twin pipelines laid in 8-knot cross current (McDermott - Cook Inlet).
- 1966 - Gas source seismic profiling introduced (Shell).
- 1967 - Stinger and tensioner used on pipelaying operation.
- 1967 - One-mile offset wellbore achieved (Whitley Bay - Safari).
- 1967 - Pipeline hot-tap developed (Ocean Systems - Union Carbide).
- 1967 - Computerized well data monitoring developed (Humble).
- 1967 - Diverless subsea completion (Brown Oil Tools).
- 1967 - First barge launch of platform jacket.
- 1968 - US satellite transit navigation system set up.
- 1968 - Bright Spot seismic technology developed.
- 1968 - First oil transshipment takes place (Shell).
- 1969 - Doppler sonar improves marine seismic accuracy.
- 1969 - First coiled tubing rig job (Bowen - Itco).
- 1969 - First center-ramp pipelay vessel launched (LB 22 - McDermott).
- 1969 - First semisubmersible pipelay vessel (Choctaw I - Sante Fe).

1970-1979

KEY EVENTS

- 1970 - Deep ocean mining operations begin (Deepsea Ventures).
- 1970 - US requires environmental impact statements.
- 1972 - Congress passes Coastal Zone Management Act.
- 1973 - Investment in US Gulf rises to $16 billion.
- 1973 - Mideast embargo of crude oil.
- 1974 - Glomar Explorer lifts Soviet submarine from 11,000 ft depths.
- 1974 - First strike in Canadian Arctic (Adgo/Imperial).
- 1974 - US Gulf's Destin Dome found to be dry (Exxon).
- 1974 - 800 platforms installed to date in US Gulf.
- 1975 - First Campeche Bay strike off Mexico (Chac).
- 1976 - OPEC producing two-thirds of free world's oil.
- 1978 - 140 subsea completions installed worldwide.
- 1979 - Iranian embargo of oil.
- 1979 - Three Mile Island nuclear accident.
- 1979 - Ixtoc I well blows out off Mexico.
- 1979 - Fixed platform depth exceeds 1,000 ft.

KEY TECHNOLOGIES

- 1970 - Habitat, alignment frame developed for pipeline repair.
- 1970 - First deepwater re-entry (Glomar Challenger -13,000 ft).
- 1970 - Offshore survival capsules deployed.
- 1970 - Tanker transits Northwest Passage in winter (Manhattan).
- 1971 - PDC bits tested (Christensen/Shell).
- 1972 - Landsat becomes available for remote sensing.
- 1973 - Portable satellite rig positioning system developed
- 1973 - Small scale tension-leg platform concept tested (California).
- 1973 - Gravity/magnetics data added to seismic picture.
- 1974 - 3-D seismic data acquisition tested (Gulf)
- 1974 - Pipelay exceeds 1,000 ft water depth (Castoro V - Saipem).
- 1974 - First one-atmosphere diving suit used (North Sea - Oceaneering).
- 1974 - Drilling water depth hits 2,150 ft (Gabon - Shell).
- 1975 - Reel pipelay exceeds 1,000 ft water depth (Chickasaw).
- 1975 - First floating production system begins work (Argyll - Hamilton).
- 1976 - Seismic data streamer tracking introduced.
- 1976 - Exxon's Hondo platform installed in 850 ft water depth.
- 1976 - Pipelay barges with 1,000 ft capability (Viking Piper, ETPM 1601).
- 1976 - First subsea alignment/welding frame developed.
- 1977 - Comex simulates dives to 2,000 ft.
- 1977 - Bottom-tow pipeline installation tested.
- 1977 - First tanker production system installed (Castellon - Shell).

- 1977 - First manipulator arm developed for underwater vehicles
- 1978 - First measurement-while-drilling system introduced (Teleco).
- 1978 - Deepwater welding (300 meters) certified.
- 1978 - Shell's Cognac platform installed in 1,022 ft water depths.
- 1978 - Radio telemetry used on towed seismic receivers.
- 1978 - First bottom-towed pipeline (Statfjord).
- 1978 - Computers convert velocity data into geological information.
- 1979 - Pipelay exceeds 2,000 ft water depths (Castoro VI - Sicily).
- 1979 - First semisubmersible construction vessel (Uncle John).

1980 - 1989

KEY EVENTS

- 1980 - Iraq invades Iran.
- 1980 - Global economic recession reduces oil demand.
- 1980 - Louisiana Offshore Oil Port completed.
- 1981 - Area-wide leasing begins in US Gulf.
- 1982 - Ocean Ranger semisubmersible driller sinks (Hibernia - Odeco).
- 1982 - First artificial drilling island built off Alaska.
- 1982 - 108 mobile new drilling units delivered (total - 574).
- 1983 - NYMEX oil trading begins.
- 1983 - Record $3.5 billion bid at Central OCS lease sale.
- 1983 - Demand for oil continues decline, inventories rising.
- 1983 - Transworld Rig 46 completes 18-year contract (Nigeria - Gulf).
- 1984 - Offshore production surpasses 14 million b/d (26% of total world).
- 1984 - Saudi Arabia reduces large oil output to support prices.
- 1984 - Buyouts and takeovers of US oil companies escalate.
- 1985 - Support vessel fleet peaks at 5,000 worldwide.
- 1984 - Mobile drilling unit fleet peaks at 603 units.
- 1984 - Production water depth exceeds 2,000 ft.
- 1985 - Demand for mobile drilling units peaks at 530.
- 1985 - Oil prices drop to $10/bbl.
- 1986 - Chernobyl nuclear disaster.
- 1987 - Demand for mobile drilling units drops to 275.
- 1988 - Oil prices remain below $18/bbl.
- 1988 - Kerr McGee leases tract in 10, 942 ft water depth.
- 1989 - Exxon Valdez tanker accident (Valdez, Alaska).
- 1989 - Platform removals outpace installations in US Gulf.

KEY TECHNOLOGIES

- 1981 - First long single piece jacket launched (Union - Cerveza -968 ft)
- 1981 - First offshore horizontal well drilled (Rospo Mare- Elf).
- 1982 - Mechanical tie-in executed in 650 ft depths (Big Inch).
- 1983 - First guyed tower installed (Lena - Exxon).
- 1984 - First steerable drilling system (Norton Christensen).
- 1984 - First tension-leg platform in operation (Hutton - Conoco).
- 1985 - First floater installed in US Gulf (1,400 ft - Placid Oil).
- 1986 - Deepest US offshore well drilled (25,000 ft - Apache).
- 1986 - Derrick barge lift capacity reaches 13,200 tons (McDermott)
- 1987 - Alaska's first arctic offshore field onstream (Endicott).
- 1988 - Drilling water depth reaches 7,512 ft (US Gulf - Shell).
- 1988 - Deepest fixed platform installation (1,353 ft - Bullwinkle/Shell).
- 1988 - First minimal platforms emerge in US Gulf.
- 1989 - First floater installed in US Gulf (Placid).
- 1989 - First US tension leg platform (Jolliet - 1,760 ft - Conoco).
- 1989 - 3D seismic processing begins.
- 1989 - Subsalt drilling begins.

1990 - 1997

KEY EVENTS

- 1990 - Iraq invades Kuwait; oil prices rise to $35/bbl.
- 1991 - Oil prices slide as Iraq/Kuwait conflict ends.
- 1991 - Collapse of USSR, opening of Eastern Europe.
- 1991 - Zero discharge drilling units mandated for some US areas.
- 1992 - US majors' international budgets exceed US allocations.
- 1992 - Russia/CIS countries provide new investment opportunities.
- 1993 - Oil prices weaken to $13-15/bbl.
- 1993 - Higher gas prices push up US Gulf of Mexico activity.
- 1993 - Low oil prices, UK tax policies reduce North Sea drilling.
- 1993 - Operators begin **partnering**, integrated services.
- 1993 First subsalt discovery (US Gulf - Phillips).
- 1994 - International Law of the Sea enacted by UN.
- 1995 - Oil demand begins edging up.
- 1995 - North Sea production escalates to meet energy demand.
- 1996 - Oil prices surpass $20/bbl mark and remain there.
- 1996 - OCS lease sale attracts largest bid volume since 1983.
- 1996 - Shortage of deepwater semisubmersibles becomes critical.
- 1997 - Rig dayrates climb as shortage for all units develops.
- 1997 - Ten rig newbuilds, 24 rig upgrades underway.

KEY TECHNOLOGIES

- 1991 - First horizontal well drilled offshore.
- 1991 - First offshore sand control fracture/packing job.
- 1991 - Workstations begin modeling 3D seismic.
- 1992 - Sleipner A condeep sinks in Norwegian fjord.
- 1993 - Second tension leg platform installed in US Gulf (Auger - Shell).
- 1993 - Layaway tree designed for 6,000 ft water depths (Petrobras).
- 1993 - First J-lay pipelaying operation (McDermott - Shell).
- 1993 - First threaded flowline installed (BP).
- 1993 - Shearable completion riser joint (Petrobras).
- 1994 - Spoolable gas lift completion developed (Camco).
- 1994 - Shell's Auger TLP installed in 2,860 ft water depths.
- 1994 - US Gulf's first successful floating producer installed (Enserch)
- 1995 - 26,000 ft horizontal offset record set at Wytch Farm (BP-UK)
- 1996 - First through-tubing multi-lateral intervention
- 1996 - First spar production unit installed.
- 1997 - Production exceeds 5,000 ft water depth (Shell - Mensa)