

CHAPTER 11

Libya

In March 1964, a Global Marine engineer in Libya made an urgent call to Murray Black in Santa Barbara. The *Glomar V*, drilling in the Gulf of Sirte for Libyan Atlantic, a subsidiary of the Atlantic Refining Company, had been shut down for 23 days straight at a cost of about \$30,000 a day. There seemed no immediate prospect of the English divers on board getting the rig back into operation. This was not what the engineer was used to in California. Would Black please come over and sort things out?

When Black got out to the *Glomar V* it did not take him long to see why the divers were not accomplishing anything. For one thing, they knew next to nothing about oilfield equipment; for another, they were diving with a face mask and the second stage of a scuba regulator on the end of a hose—gear that Black told them was fit only for cleaning a bathtub—and they were communicating by pulls on a rope. The only way the compressor could be made to put out enough air to get a diver to the bottom of the blowout preventer stack at 250 feet was for a crew member temporarily to disable the relief valve. Since Underseas Ltd, the diving contractor, had not seen fit to provide a chamber, the divers took all their decompression in the water hanging onto one of the guide wires. ‘It was,’ said Black, ‘a school for heroes.’

Thirty-six hours after stepping on board, Black had the rig drilling again. When he came ashore, an understandably delighted Libyan Atlantic asked him to take over the contract, an invitation Black at first declined, pointing out that his partner Barney Clancy was not interested in overseas work and that Divcon was doing well in California anyway. But Libyan Atlantic was insistent.

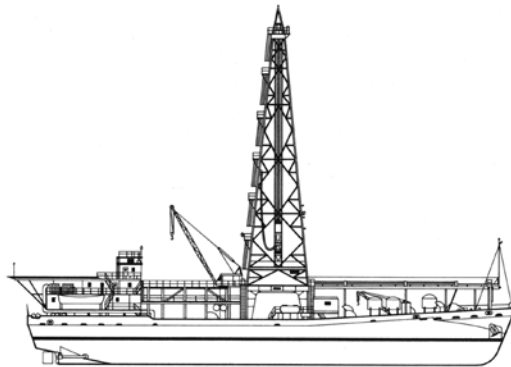
‘Work up something for a crew of five,’ they said, ‘and we’ll see if we can live with it.’

Black had no idea what it would cost to operate in Libya or what it would cost to ship in equipment, including Divcon’s helium gear, so he went back to his hotel and began telephoning. Five hundred dollars’ worth of telephone calls later, he had all the numbers. He went over to the office and put down his offer: \$23,000 a month. ‘We’ll take it,’ said the man behind the desk.



The Divcon crew that replaced Underseas Ltd consisted of Black, Walt Thompson, Gene Gallagher, Gene Mogis, and Jiggs Jackson's brother Doyle. Shortly after the start of the contract, Black came to an agreement with Clancy whereby he bought out his interest over a period of months, while the remaining members in Santa Barbara continued to work locally—until they too went their separate ways and Divcon became exclusively an overseas company. Black did not foresee just how rapidly offshore oil exploration was going to expand outside the United States, though he could feel the industry stirring. He could not have made the move at a better time even if he had planned it in every detail.

In 1964, five years before Muammar al-Qaddafi, a charismatic young army officer, overthrew the tottering regime of King Idris, Libya was a pleasant enough country for



GLOMAR II, GLOMAR III, GLOMAR IV, GLOMAR V

Number of vessels	4
Length, Beam, Draft	268' x 58' x 16'
Displacement (loaded tons)	5280 L.T.
Lightship Displacement	3040 L.T.
Total Variable Load (dry cargo, bulk material, fuel, drilling tools, drill pipe, casing, BOP equipment, etc)	2240 L.T.
Anchors	8-20,000 lbs.
Design Speed	6 Kts
Electric Power	6-525 HP DC/3-300 KW AC
Water Depth	600 ft
Drilling Depth	25,000 ft

Details of the Glomar II class—the first vessels to be built specifically for offshore drilling—from a Global Marine sales brochure. The *Glomar II* and *Glomar III* were launched in 1962, the *Glomar IV* and *Glomar V* in 1963 (A.J. Field)

foreigners. Tripoli was a civilised city, with most of the infrastructure in the hands of the Italians, the former colonial masters who also constituted the core of expatriate society. There were good restaurants and drinkable local wines, nightclubs and bars, a British golf club and an American golf club—with sand and oil greens in place of grass—and miles of coastline ideal for scuba diving.

As for the country itself, it was still poor: not one barrel of oil had come from beneath the land or the seabed, no Libyan had been to university and there were no qualified military pilots. The six ancient Lockheed trainers that made up the air force never flew; all their would-be-pilots could do was polish them.

Wheelus Air Force Base, five miles east of Tripoli, a country club among military bases, with beautiful new buildings and a swimming pool for almost every barracks, constituted the principal American presence. Wheelus was especially important to the US Air Force in winter when bad weather in Europe restricted flying and fighter pilots came to Libya for gunnery practice. When a Thunderchief crashed into the sea, Divcon salvaged it at no charge: a patriotic gesture which the base commander rewarded by giving Black and his crew free access to both the officers' and NCOs' clubs.

In Gallagher's view, it was as good a life as a diver could have, but for Black, at the outset of the contract there was a constant concern over money:

'I was paying off Barney and also bringing equipment into Libya. I could see that two months downstream I wasn't going to be able to make a payroll. There are a lot of things you can do in this world, but not making a payroll isn't one of them. I needed \$10,000, and I didn't have \$10,000. I had no Stateside line of credit because I was now a foreign corporation, and nobody in the States was going to loan me money on doing business in Libya. So things were looking bleak. I was to the point where I was almost stopping people on the street and saying, "Would you loan me \$10,000?"

'There was a big old superintendent for Atlantic in Libya, Cliff Banks, who used to be a football player for Oklahoma University. Cliff came to me one day and said, "You know, Black, you're a crazy son-of-a-bitch but you may just make it. I'll tell you what; I'm going to loan you \$10,000. I want it back in a year."

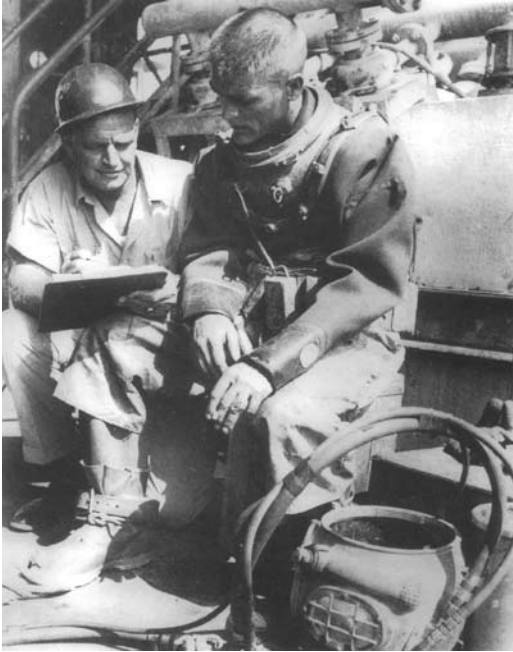
'I said, "I'll give you eight per cent of the company."

'He said, "I don't want part of your company—too risky. I want my \$10,000 back at the end of a year, and I want another \$10,000 on top of it."

'So I borrowed the \$10,000 from him, and at the end of a year I gave him his \$10,000 and put another \$10,000 on top of it. By that time, eight per cent of Divcon would have been worth something like \$200,000. But Cliff was happy; he made his \$10,000 profit, and I was happy because it kept me afloat. If I hadn't done that I'd have gone under.'

Each diver worked two weeks on and one week off. Normally only three of the crew were on board the vessel. Most routine jobs, such as changing a hydraulic hose, required no more than one dive to accomplish; but for helium diving this left no safety margin whatever.

In California, the standard crew consisted of a diver, standby diver, manifold operator and two tenders; in Libya, the third man was tender and standby diver rolled into one. In an emergency the plan was for the tender to grab the Desco mask that was always ready with its separate telephone turned on, put a weight belt on over his coveralls, throw three or four hundred feet of hose into the moon pool, and go. For all practical purposes, however, if a diver got into trouble he would have had to get himself out.



Murray Black with Cliff Banks, the superintendent for Libyan Atlantic (*Murray D. Black*)

a break, each man successively running the manifold, putting a diver in the chamber, dressing in and going down himself.

There was a firm rule that if anybody awoke in the night with a bend after a gas dive he was to wake up one of the others and immediately go into the chamber—swift recompression being crucial in the treatment of decompression sickness. One night, Gallagher awoke with a brutal pain in his right knee. That day he had made a 25-minute dive, all of it hard work, but had come out without any sign of a bend. Knowing the other members of the crew were as tired as he was he went on deck, started the compressor, blew the chamber down to 40 feet, crawled into the inner lock and turned on the oxygen. Within ten minutes, the pain was gone. All he had to do was sit in the chamber for an hour or two, then sneak back to his bunk. Unfortunately for him, Mogis, their helium expert, awoke, noticed he was missing and gave him a tremendous dressing down over the chamber intercom.

Divcon's contract stipulated that it was to provide diving services to 410 feet, the depth at which the navy helium tables stopped. Black thought most of the work would probably not exceed 350 feet. This proved to be a gross underestimate. A month or two after the start of the contract Libyan Atlantic announced that in August the *Glomar V* would move into 525 feet of water. Could Divcon go that deep? All Black could say was, 'We'll try.'

Through Dr Behnke, or through a computer programmer in Las Vegas, the brother of a Divcon tender in Santa Barbara—or both—Black managed to get the navy tables extrapolated from 410 feet out to 525 feet. By the time Libyan Atlantic spudded the 525-foot well, the eighth of the campaign, 24 miles off the coast at a point 60 miles east of the town of Sirte, he and his team were ready to go.

They had been operating in the Gulf of Sirte for 18 months; so far all the holes were dry. Now the surface casing for the new well was in and the blowout preventer stack locked

Under normal circumstances, the divers ran their own surface oxygen decompression in the chamber, after 50-foot and 40-foot oxygen stops in the water. The first time Gallagher made the dash from the water to the chamber he felt like a shaken-up bottle of Coca-Cola.

'You can actually feel the gas expanding in your bloodstream, you can hear it in your ears. It makes you concentrate wonderfully. But we were all good at making the transition and we practised a lot. Each person had a specific thing to do when the diver came on deck. My job was the weight belt and the coveralls; somebody else was on the overshoes and the ankle weights. Everybody had a job to do.'

Inevitably, there were times when the drilling operation ran into trouble and those ashore were recalled. Typically, all five would be up for 24 hours without

on. The drillers were ready for Black to go down in Charles Isbell's observation chamber, which Divcon had bought after renting it for the Point Reyes dives, to guide the locking-on of the marine riser onto the blowout preventer stack.



Launching Isbell's observation chamber (*Ted Benton*)

Before bolting Black in with the two oxygen bottles and the flow meter, the divers lowered the bell unmanned to 500 feet, with an alarm clock set to go off in 15 minutes in the bottom. If the bell leaked, so the thinking went, the clock would be under water and the alarm would not go off. The alarm—heard over the intercom—did go off, and Black climbed in.

The dive started routinely enough but once Black had guided the marine riser—some 460 feet of it—into place, all hell broke loose:

'I told them to come off the load and suddenly I heard this poing! poing! poing! through the water. What was happening was that they had dropped the pipe from the surface and it was going over sideways. All the strain was thrown on the bottom, and the bolts around the flange—these were 1¼ or 1½ inch bolts—were busting. I said, 'Pull me up!' But there was no sense in pulling me up because if that pipe was going to hit me, that was it. Thankfully, it went whoosh! right by me—which was great—but now they had a problem, because they hadn't got any more riser pipe. They had to get it back. It wasn't a case of going to the corner hardware store and buying another.'

It took eight dives to recover the riser, which was now in several pieces, and straighten out the mess. Black made the first dive. After a descent in the observation chamber to assess the damage and draw up a plan of attack, he put two lifting bridles around the first piece of riser, at the top of the wellhead at 468 feet.

On the next dive, the only one of the eight to take place at night, Walt Thompson went all the way to the bottom, to 525 feet. The procedure Divcon was using was to lower the diver on a stage to 30 feet on air to check for leaks, then switch him to helium. The dive started when the diver received the gas. Since for decompression purposes bottom time is taken from the moment the diver leaves the surface—or with helium from the switch to gas—in the days of deep heavy gear diving the faster a diver got to the bottom, the

better. Black and Thompson were both masters of the rapid descent, and in this instance Thompson got to the bottom in five minutes, the tenders throwing his hose over the side from the 785-foot figure-of-eight coil as fast as they could go. 'It was decompression we were worried about, not compression,' said Black. 'We never thought about the possible consequences of rapid descent.'

The main object of Thompson's dive was to sling another section of riser for lifting to the surface. The conditions were ideal and the current negligible, but lugging cables across the bottom at 525 feet was hard work. Part way into the dive Mogis, the rack operator, told him to rest. Thompson sat down on the pipe and thought about the vastness of the universe. In his mind's eye he zoomed in from the farthest reaches of space, past the sun and the moon to the earth, to the Western Hemisphere, to the Mediterranean, and so to the *Glomar V* and finally to 'this little guy sitting on a piece of pipe down on the bottom, wondering what the hell he was doing there.'

At 9:35 p.m., 28 minutes after leaving the stage, his job finished, Thompson started for the surface. His first stop was at 420 feet. At 2:41 a.m., on schedule, he arrived at 50 feet and was switched to oxygen. Thirteen minutes later he reported that he was feeling dizzy and nauseated, and then that the guide wires appeared to be twisting. The words 'O₂ poisoning' were no sooner out of his mouth than Mogis put him back on helium and instructed the tender to bring him up to 40 feet. Black then got on the telephone and told Thompson to ventilate, but he felt no better. At that point Mogis decided to treat his condition as a central nervous system bend and lowered him back to 100 feet, which produced immediate relief. Thompson was then dropped down a further ten feet, and his decompression started again.

At 4:21 a.m., cold and debilitated, Thompson again arrived at 40 feet, where he breathed oxygen for 32 minutes. The surface crew, which included two hands from Global Marine willingly pressed into service as tenders, then brought him on deck and put him in the chamber, with Black in attendance. As a precaution, Mogis recompressed him to 110 feet, from where he was brought up to 50 feet in trial stages. As Thompson said, they were on the thin edge: he was vomiting in a bucket while Black was consulting the *US Navy Diving Manual*. However, at 9:58 a.m., nearly 13 hours after the start of the dive, and after one minor recurrence of nausea, Thompson emerged from the chamber, weak and tired but otherwise all right.

Looking back on the incident, it appears that two factors could have been at play. Firstly, Thompson may have had a carbon dioxide build-up on the bottom when he was told to take a rest. Secondly, Divcon was using a 90/10 mixture, the only one it had available. This being the early days of commercial helium diving, no company was yet mixing its own gas and Divcon had to ship in premixed gas from the United States. For 350 feet, 90/10 was a good mixture but for 525 feet it was too rich; for a 28-minute dive to that depth it was certainly too rich.

The next diver, Gene Gallagher, went to the top of the wellhead at 468 feet and slung the landing assembly and the Quick-Break Connector for lifting, a task he accomplished in five minutes flat. Black felt it was the most heroic dive of the entire project.

'Gene was not at all enthusiastic about going to 468 feet; but by God he did it, and he did a damn good job. He did more work in less time than any diver I've ever seen, because he wanted to get the hell out of there'—understandably so, given that the sum total of his commercial diving experience at the time consisted of seven 200-foot air dives and one helium dive.

Gallagher had a little over four hours of water decompression. Before the dive there had been a ten or 15-minute delay. Dressed and ready to go, with his woollens underneath, he was dripping with sweat in the Libyan heat. The relative cool of the 80-degree water, welcome at the start of the dive, turned to ice on decompression as he hung off in his soaking wet woollens, surrounded by an envelope of helium. All he could think of was the winter he spent in a prisoner of war camp in Lithuania, after being shot down on a bombing raid, trying to survive at 30 to 40 degrees below zero with nothing to burn.

On dive four, Black descended to 525 feet to hook up the remaining length of riser pipe, leaving the surface at 2:10 p.m. The water, as always, was extraordinarily clear. From the stage at 30 feet, waiting for the change-over to helium, he could make out the white glimmer of the blowout preventer stack 438 feet below. When he reached bottom the light was good enough to read a newspaper—which, incidentally, was how he used to pass his decompression stops. (According to Tom Earls, a petroleum geologist who joined Divcon in 1967, Black's underwater reading also extended to more weighty fare. When Earls expressed surprise at hearing him quote Shakespeare, Black told him that in Libya he had cut up a copy of the complete works and would take pieces of it down with him to read while hanging off.)

Black was on the bottom for 14 minutes: the time it took to clear the diver's walk-around, get the cable around the pipe, make up the shackle and instruct the surface to take a strain.

'I was so high I could have jumped over the moon,' Black recalled. 'I knew we'd done something nobody had ever done before. Boy, was it exciting! You can't buy that kind of exhilaration.'

Black spent 5½ hours decompressing in the water. He then came on deck for a further 2½ hours of decompression in the chamber. He had no symptoms of oxygen poisoning, in part probably because he was on the bottom only half as long as Thompson. The log noted that—unlike on the preceding dives—Black switched to air at 120 feet. On dive five, the change-over was made at 150 feet, thereafter at 170 feet. Echoing the remarks of others, Thompson said that going from helium to air was like turning on a heater.

Of the final four dives, Black made one and Thompson three. All were to the top of the wellhead at 468 feet, to clear hydraulic lines, check the mandrel for damage and burn off the kill and choke lines, which the riser had bent over in its fall. The dives to 525 feet are almost certainly the deepest working dives ever made in heavy gear.

The contract on the *Glomar V*, initially for six months, was renewed several times. During the 18 months Gallagher was on the crew, there was a spectacular blowout:

'They were using a 5,000-pound stack which could be converted through the exchange of valves to a 10,000-pound stack. They shut the rig down and spent a month refurbishing it, but the choke and kill lines still had 5,000-pound collars. There were two 10,000-pound collars, which were made for this job, sitting in Tripoli. They always had an airplane standing by, but it cost a lot of money. Either the tool pusher or the rig superintendent wanted to take six more hours and fly out the two collars—they're just pieces of steel about three or four feet long. The engineer said, "We're way behind. We ain't going to take no more goddamn time off. Let's run the mother the way it is."'

It was night when the vessel, drilling in 97 feet of water, hit a gas pocket. In a desperate attempt to relieve the pressure, the drillers opened the two huge pipes that ran along either side of the vessel to carry off the excess gas from the choke and kill lines, and sent

10,000 p.s.i. of methane screaming into the atmosphere. To the divers down in their cabin it sounded as if all hell was breaking loose. Realising the well was out of control, they ran on deck, jumped overboard and swam to the anchor buoys, where they stayed until the crew shut in the well.

Hopes that this was the end of the drama proved premature. Shortly afterwards the choke and kill lines, their 5,000-pound collars unable to hold back the pressure, gave way. One of them shot up through the derrick like a rocket. With the choke and kill lines gone, the gas erupted from the bottom, bringing with it tons of drilling mud that soon covered everything in sight.

So great was the volume of gas that the aeration reduced the ship's buoyancy to the point where her decks were almost awash. The captain, all too aware that his \$4 million vessel would sink if he did not take swift action, promptly slacked the bow anchors and backed off the well, bending the stack and breaking off the riser and the hydraulic hoses in the process.

Before anything could be done to kill the well, the divers had to find the stack. To start with, Thompson tried doing a search with scuba:

'The noise was absolutely horrendous; the well was shrieking. It was like having a freight train go over the ceiling. But it was all right as long as you stayed below it.'

Even so, Thompson concluded that the possibility of getting caught up in the boil of gas made the swimming approach 'a little shaky', and so the divers reverted to heavy gear, with an extra weight belt to keep them firmly on the bottom. Not having enough hose to reach the blowout from the *Glomar V*, they loaded their compressor and heavy gear on the 200-foot supply boat.

The search lasted three or four days. The visibility, because of the giant washing-machine effect of the churning gas, was almost zero. The divers did not walk across the bottom; they waded through it, covered knee-deep as it was in drilling mud, old tyres, barrels, wire, and everything else the roughnecks had thrown over the side: a constant concern for the divers who worried about cutting up their diving dresses.

Finally, in chest-high mud, one of the divers found the stack and tied a rope to it, after which they connected lengths of flexible steel pipe to the wellhead, through which the drillers then pumped cement to kill the well. Before taking this final step, however, it was first necessary to reconnect the hydraulic hoses: a task Thompson entrusted to Gallagher.

'The hydraulic fluid, which is pumped through the hoses to the actuators at a pressure of 1,500 p.s.i., opens or shuts all the valves on the stack. In this case, there were 12 hoses: six for the "close" side and six for the "open" side. We taped all the "close" side with two wraps of yellow tape. The stack had two rings, one up by the top and one at about chest-level. I dragged the bundle of hoses over to the stack and took one turn around the lower ring with the three-foot rope pigtail I'd pulled it with.

'As I was doing that I felt the bundle lift up, so I got my legs around it—and it promptly turned me upside down and the rope pigtail broke. What had happened was that the engineer had pressured up the "close" side. The hydraulic fluid made the hoses buoyant and they went right up into the huge stream of gas roaring up to the surface. I was hanging onto the stack for dear life and I said, "What the hell happened?"

'Over the 'phones I heard this strange voice ask, "What's going on down there?" I knew it wasn't Walt. I said, "Who's on the telephone?" He said his name. I said, "You get the fuck off this goddamn telephone! You aren't supposed to be on this telephone."

'I was not in trouble and I was not going to get killed, but how embarrassing it would have been to come to the surface on top of this big bubble of gas! I finally got the bundle tied off and the hoses hooked up and when I got back to the surface Walt said, "You shouldn't have talked to that guy like that, Gene." I said, "Walt, I was upside down, I was taking in water by the gallon through my exhaust, and I wasn't about to be nice to anybody. Had it been you on the 'phones, it would have been no problem. But I wasn't going to tell a goddamn engineer I was upside down and about to blow up.'"

Only once in Libya was there an accident serious enough to put anyone in hospital, and that occurred on the surface. Gallagher was about to be swung over the side in the observation chamber when the load line, which a crewman had just re-swaged, pulled through at the shackle, with the result that the chamber crashed to the deck, bounced and hit Gene Mogis in the chest. Gallagher, unable to flex his knees in the narrow confines of the turret to absorb the impact, took a hammering but emerged otherwise unscathed.

The nearest hospital was the Seventh Day Adventist Hospital in Benghazi, run by British and Americans, and it was there that Gallagher accompanied Mogis by helicopter and plane.

'The conditions in the hospital, to put it mildly, were deplorable; all the patients were Arab and it was not sanitary. I was really hurting and I had to carry Mogis, who weighed about 230 pounds, upstairs and downstairs.

'He said, "Gene, I can't stand this. I know I've got a problem these people can't solve." I said, "I agree but let's get you x-rayed first."

'They finally got a stretcher. The x-ray room was way the hell down the building, and he slipped off the stretcher three or four times on the way. He was groaning, and I was telling him I was sorry but that I couldn't help it. Sure enough, when we got the x-rays they showed he had a broken sternum. I called Walt and we got another plane and flew him to Wheelus Air Force Base, where they put him in a cast.'

Before leaving the story of Divcon in Libya, it is necessary to say a few words about the man who was to play such an important part in the future expansion of the company: a cigar-smoking Texan of Sicilian extraction named Nic Campise. Then a young engineer with Brown & Root in Tripoli, Campise concluded that Divcon was a company with enormous potential. He realised that the search for offshore oil was about to go global, and that where there were rigs there would have to be divers.

Working in virtual anonymity in a vast organisation was not how he was going to exercise his entrepreneurial talents and get a leg up in the world; so he went to Black and laid out his vision. Black, taken by Campise's energy and quick mind, and seeing he had met his equal as a salesman, brought him into the company as his manager and business partner.

Together they would turn Divcon into the biggest diving contractor in the world.

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