ECHO

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Recruitment Manager (FODP) - Eastern Hemisphere, HR Manager, HALLIBURTON

MANAGED PRESSURE DRILLING

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ENERGY MANAGEMENT IN A CHALLENGING ECONOMY

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TAKE THE INITIATIVE

Mohammed S. Alshobaky
Editor in Chief

Some say that college years are the best years of one's life. For a struggling youngster, such a statement is way far from being true. However, there is no disagreeing over the importance of those years in deciding the entire course of the rest of one's life. Every sunrise brings with it a set of new challenges and crossroads enrolling us into a series of decisions that sculpture the heart and core of our lives. Specially if you are a young man or woman on the verge of taking your first couple of steps into the unknown; still capturing the essence of deeper more profound meanings in life, to life and out of it.

For freshmen; the transition from high school life to college life can be intimidating and overwhelming; leaving most confused with nothing but foiled expectations and thwarted ambitions. Amidst this emotional roller-coaster, it is only normal to get detached from yourself or lose sight of your plans, let alone, mislay your goals.

As a college student myself, it is safe to say that I have been through all those stages, I have eye witnessed a gradual dramatic shift in my personality over the past few years, picking up experiences and knowledge that certifies me to have a well educated say in the matter. During my extensive search I managed to put together a list of the most basic survival tips that you are bound to need as a college freshman.

Plan to be surprised

Life is not a well orchestrated symphony; expecting a plan to be perfectly executed from A to Z is a ridiculously naive assumption. On the other hand, logical thinking along with thoughtful consideration can ensure that obstacles are foreseen and handled properly if a need arises.

A backup plan is always a necessity; especially when highly regarded matters are at stake. Most importantly, plans have to be realistic and vividly honest, reflecting one's true abilities and potentials. Exaggeratedly ambitious plans are seldom fulfilled, not to mention the fact that they often end up with great disappointments and deep frustrations.

A wise man once said "life is what happens to you while you are busy making other plans" and the point here is; do not get hung up on plans so far in the future and actually stop accomplishing the work that needs to be done now. Vague, mysterious plans; especially about the methodology adopted to reach your end goals, are pretty much like crossing between two banks of a deep violent river without any means of proper transportation. Unfortunately and despite of any efforts done, the final result is always the same; drowning or here in our case, failing!

Time management is more than just a skill

Time management is an art; to perfect it, is simply equivalent to having the ability to seduce time to your own wishes. Successful figures have been able to strive for one success after the other through paths of many difficulties and huge challenges solely by mastering the art of time management. The number one elemental piece of advice on any list leading to

success is; time management. The secret ingredient that makes an amazing time manager, is having an intense sense of time and a strengthened well ready to sacrifice any wasted times, recycle it and put it to a good use. Great deal of time management reckons on prioritizing and delegation of tasks based on their importance.

At the heart of time management is an important shift in focus; concentrate on results, not on being busy. The majority spend their working hours in a frenzy of unorganized efforts that usually lead to relatively modest achievements while what they should be doing is directing as much of their time and energy as possible to attaining high payoffs tasks. To sum the discussion about this point; as you master such a skill, you will find that you gradually take control of your agonizing schedule, and say goodbye to the often stressful work overloads.

The effectiveness of the ideology you follow in studying is measured by a set of interchangeable variables; namely, quantity and quality. To elaborate the former idea, let us consider a simple example; for instance, if the rate of which you study is relatively humble, then the quality of your studying must be high enough to compensate for the humbleness of your rate of studying.

Honoring deadlines and delivering assignments

Other than the fact that, it is an essential part of your academic progress, honoring deadlines is also an essential part of the progress you achieve in terms of maturing and growing up. Meeting nearly impossible deadlines prepares you for yoursoon to be- career life, as it is a true test of character and a frank scale of your responsibility.

Outside activities

Extra curriculum activities are recently looked upon as the missing link between college life and career life. The more activities you engage with during college, the closer you come to sealing the gap between you -as a fresh graduate-and market needs and demands.

The beauty of extra curriculum activities is that they can easily take a form of hobby you are fond of, but never managed to get to by the end of your busy schedule. Concerns of major companies and industrial pillars regarding this specific aspect of an applicant's resume are rapidly growing, as it leaves a good impression of enjoying a strong self awareness and positive attitude towards life; qualities highly desired to create a good working atmosphere.

Life is not a well orchestrated symphony; expecting a plan to be perfectly executed from A to Z is a ridiculously naive assumption

Come to terms with studying

All of a sudden you start caring about every other aspect in your life; devote portions of your time to stuff you would not even consider doing before joining college. Hanging out with friends doing nothing but being a member of a shallow cycle of empty laughs and no good conversations becomes a daily ritual. All that and more is why you have to come to terms with the fact that you are now a college student and whether you like or not, you will have to study sooner better than later. College life is not about freedom and having around the clock fun; that is a falsely induced image by a misguided minority of the society of high school graduates, an utterly ridicules one too. If it makes it easier to absorb such a concept, try contemplating college life from a different angle, a new perspective; try to think of college life as a full time job!

The first step down that path is to get the dates right, and with any means you prefer, notify yourself to their significance. The sad truth is; the workload does not magically disappear on the basis that you have marked the date right and you are alert to it. Stop trying to convince yourself that you still have plenty of time and there is absolutely no need to be panicking about anything.

Never underestimate simple tasks as assignments or repots, because once they are piled up; keeping a close track on them becomes harder and harder to achieve and as days pass by, failing to deliver on time becomes an inevitable reality, the thing that could come at high costs as you could easily lose credibility or your professors' trust in you, your abilities or even your seriousness.

Self motivation

Self motivation is the scientific definition of a "miracle". It is a powerful tool that reaches deep inside the human soul, divinely stimulating its core to realize its full potentials and provide it with a deep sense of fulfillment on so many levels. The impact of such a tool can radically change the shape of the toughest and meanest situations and pickles, defying all odds and speculations.

It is needless to say that such a list could go on forever but unfortunately; our pages will not. Hopefully, this provides a glimpse on how to handle your college to achieve the outmost benefit from it as a life time memorable experience…

DEGREE OF CONFIDENCE

A Driving Concept for Inspection

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Books and references are good sources of information. But on great number of topics they can be sometimes vague, not to mention; complicated and overloaded with technicalities and unnecessary details. That is what led us to seek a different more adequate learning approach, one that depends on simplicity and directory. To achieve such a goal we went to the expert engineers of the major leading companies of the petroleum industry.

Degree of confidence simply expresses how much you are confident that the item you are fabricating or the facility you are constructing would be fit for its purpose during a certain period of its service. Although this concept is rarely found in standards and specifications, and if it appears explicitly, it is mentioned partially such as the concept of joint efficiency in ASME and API. Its understanding is critical for establishing a reliable quality control system towards which most standards and specifications are directed.

Also, degree of confidence represents a key for comprehensive understanding of a booming technique of inspection called risk based inspection (RBI). Actually the design and the technology of fabrication and/or construction together with the accuracy of implementing quality control steps are some of the main factors controlling the degree of confidence but in this article, we are going to focus on the extent of testing as the main variable achieving the resultant (final) degree of confidence and in the vicinity of this relation the effect of other parameters will be more apparent. For the sake of simplicity, the extent of testing is to be defined as the percentage of items under inspection.

To start, let us say we have to receive 100 valves and we are going to inspect all of them using a certain procedure of testing, are you going to be 100% confident about the fitness of the valves to serve? The answer should not be yes because human factors interfere with the accuracy during establishing and manifesting the procedure of testing. This results in the fact that the degree of confidence will not be 100%. Now let us say you have inspected just one valve, what will be the degree of confidence? The answer will be in the range from 1% (if you are totally pessimistic) to a certain percentage depending on how far you are optimistic. This simply means; the slope of the relation should be equal to 1 (the red line in Figure 1) or higher (the un-shadowed segment of the green line). However, the green line slope should slow down with the extent of testing to form a saddle (the shadowed segment of the green line) which is assumed to tend to a maximum value less than 100% degree of confidence as the extent of testing approaches 100%. According to the green line, you can choose the extent of testing to be 12% only achieving 90% degree of confidence (the dotted vertical line) or 100% to be 93% confident (The end of X-axis).

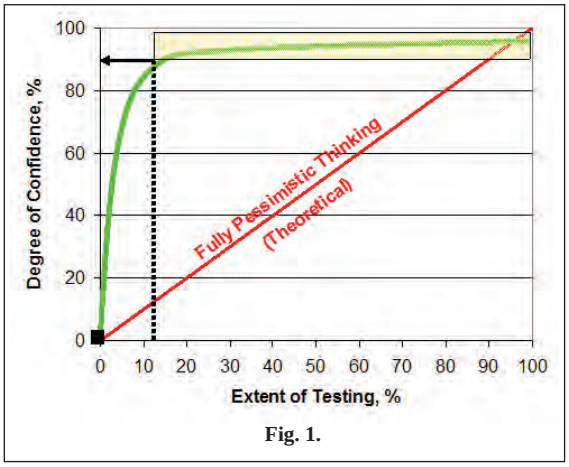

Fig. 1.

The question now arises does it worse to spend 8 times time and to pay about 8 times cost to move the degree of confidence from 90% to 93% (only 3% enhancement)? Your answer will depend again on how far you are optimistic. If we have a look at Figure 2, you will discover that the green line represents more optimistic thinking than the blue line.

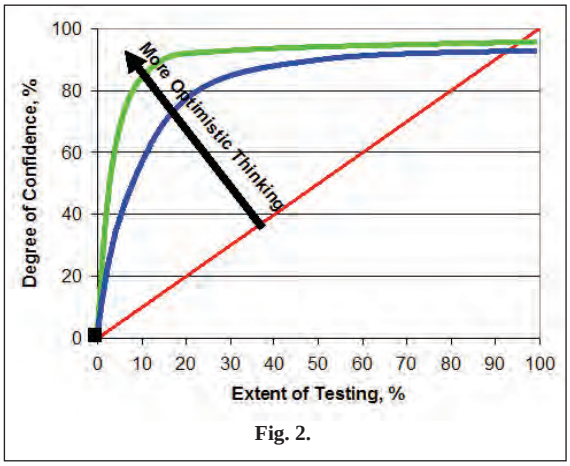

Fig. 2.

Of course personal factors affect the level of optimistic versus pessimistic thinking but there are many other factors, which could be classified into five different categories:

Category I: Risk Hazards

This category includes safety risks and should be related to the scenarios which could take place if a disaster occurs. An example of that is the risk of hydrogen versus natural gas explosion. Another example is the explosion of natural gas in high bay vs. in downtown.

Some of the risk hazards are of economical nature such as the cost of shutdown which does not include only the cost of repair and re-start but also the loss of product and/or revenue. Also, the ability of stock holders of a certain company to bear risk is of economical nature.

A third group in this category represents political or security implications such as the depletion of gasoline in market, during shutdown of facilities, which may lead to social and political disturbance due to inflation and revolutionary actions.

Category II: Design Factors

This category represents a relief of the first one; meaning that when the risk hazards increase, the design should be more conservative to have more optimistic situation. Design factors include - but are not limited to- Safety factor, which is taken during design, degree of redundancy of design (number of parallel paths carrying stress and number of parallel paths having the same process) and encountering parts to ease repair such as dead legs of T-connections in pipe line. Design factors include also the selection of appropriate material.

Category III: Technical Hazardous Factors

Two groups could be listed under the umbrella of this category:

1- Specific Fabrication or Deterioration Mechanism Technicalities:

As an example, the difficulty of welding in 3G position as compared with flat and horizontal welds necessitates more extent of testing to be directed towards vertical welds after constructing the tank. Another example is the difference between seam and girth welds in pipelines, which undergoes typically more hoop stress (normal to seam weld) as compared with longitudinal stresses (normal to girth welds). A third example is the ability of pitting to grow vertically leading to more susceptibility in bottom and to a lesser extent in roof as compared with high courses of shell.

2- Service Factors:

Cryogenic temperatures, cyclic loading, heating and cooling cycles, injection of certain chemicals in pipelines, and nature of soil are usual examples included in this group.

Category IV: Quality Control Factors

This category could also be represented in two groups:

1- Quality Control Stages: Simply answer the following questions and you will discover the problematic yourself:
a) How accurately do you receive the material and audit the manufacturer of each part?
b) How is the procedure of fabrication (e.g. Welding Procedure) established and optimized and how accurately are welding coupons tested?
c) How do you receive the coating materials and how do you apply them?

Thousands of questions may arise in your head, and the more you are sure, the more you will be optimistic.

2- Administrative Factors:

You may have the best quality control manual but you are not optimistic simply because you are not quite sure of implementation. The knowledge, experience, administration capability and in most cases the brand name of the contractor, inspection bidder and third party enhances your optimistic thinking. For sure qualification of personnel plays a vital rule.

Category V: Testing Cycle

As an example, proof testing will not only reduce the extent of NDT (None Destructive Test) but its severity may also affect the time of first in-service inspection. Good statistical and scientific treatment of in-service inspection results will widen the minimum time required for next inspection leading to more optimistic thinking. This category includes also the availability and accuracy of monitoring systems and ease of surveillance.

Degree of Confidence represents a key for comprehensive understanding of Risk based Inspection

In general, loads of categories I and III, which are usually uncontrolled, trigger the pessimistic thinking whereas optimizing categories II, IV and V develops optimistic thinking.

Still, the questions remain:
1- Could we provide an arithmetic weighing factor for every category?
2- Could we have an overall weighing factor for all categories by correlating their individual weighing factors?
3- Could we relief the effect of attitude of personnel evaluating the degree of confidence?
4- Does this need statistics, regression and iteration?

The answers of all questions are YES but life is not easy to get 100% accuracy.

NATURAL GAS SWEETENING

By Spiral-Wound Membranes

Wael B. Said
Senior Process Engineer
BP Egypt

Eng. Wael Bakr acquired his Bachelor degree of Science in Petroleum Refining Engineering in 1998 from Suez Canal University. Attained his Master of Science in Chemical Engineering & Petroleum Refining on "CO_2 Removal from Natural Gas using Membrane Technology" in 2004. He started his career as a Senior Operations Engineer at Khalda Petroleum Company in 1998, then he worked for Snamprojetti Lummus Gas LTD as a Commissioning Engineer for one year from 2005 to 2006. As of 2006, he is a Senior Process Engineer at BP Egypt.

In recent years, gas separation membranes have emerged as a viable alternative to more mature technologies such as absorption and cryogenic distillation. The use of spiral-wound permeators to separate gas mixtures encountered in natural gas treatment and enhanced oil recovery is one of the most important applications of membrane technology.

PRINCIPLES OF MEMBRANE GAS SEPARATION

Membranes are thin semi-permeable barriers that allow passage of certain molecules. Gas separation membranes are predominantly comprised of polymeric materials. Polymers commonly employed for gas separation membranes include cellulose derivatives, polysulfone, polyamides, and polyimides. These membranes contain no holes or pores as would typically be found in filter technology. Instead, the separation relies on the principles stating that gases dissolve in and diffuse through the membrane polymers. Certain gases will pass through (permeate) a membrane at a faster rate than other gases due to a difference in the solubility of the gas in the polymer and the rate at which the gas diffuse through the polymer membrane (Figure 1). The difference in gas permeability rates through the membrane provides the basis for the separation. Gas membrane separation is a concentration driven process which, for gases, is directly related to the pressure of the inlet gas and permeates streams.

The separation is actually driven by the component partial pressure differences across the polymer membrane. Given a feed stream of CO_2 and CH_4 at a given pressure, CO_2 being the more permeable component will pass through the membrane to the low pressure side and exit as the permeate stream. CH_4 remains on the high pressure side and exits as the residue stream with essentially no pressure loss. Both CH_4 and CO_2 permeate through the membrane, resulting in the residue stream being more concentrated with CH_4 and the permeate stream being more concentrated with CO_2.

For a given temperature, pressure, and feed composition, the permeability of an individual component through a polymer membrane is constant. This permeability is expressed in units of component gas flow rate per unit membrane surface area per component partial pressure difference across the membrane.

$$Permeability = \frac{(Flow\ Rate)}{(Membrane\ Area)(Component\ \Delta P)}$$

The degree of separation of gas components is defined by the selectivity of the membrane (ratio of component permeabilities) and by the conditions of the separation (pressure, temperature, flow rate).

The membrane elements are formed as flat sheets and packed into spiral wound modules which are then inserted into steel pressure containing tubes. A spiral wound module consists of a series of membrane envelopes that are

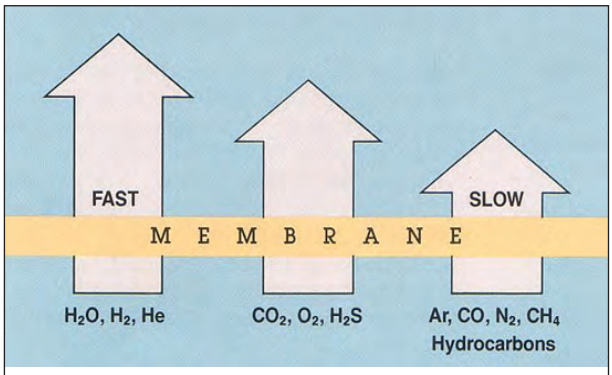

Fig. 1. Fast & slow gases permeating the membrane selective layer.

constructed of two sheets of membrane glued back to back along three edges with the membrane facing outward. A spacer is inserted into the center of this envelope to keep the membranes separated so that a channel is formed for the permeate gas.The open end of the membrane envelope is attached to a stainless steel tube that has been drilled with holes (Figure 2).

Feed gas is introduced to one face of the membrane module where it travels between individual membrane envelopes. The feed channel spacer is designed to promote mixing of the gas as it travels along the membrane surface. The more permeable gases pass through the membrane into the center of the membrane envelope and then spiral around the steel permeate tube and exit as the low pressure permeate stream. The product gas exists at the other end of the module with essentially no pressure drop. The modular design of the membrane elements, membrane area can be adjusted to allow efficient operation for wide ranges of feed flow rates, pressures, temperatures, and concentrations.

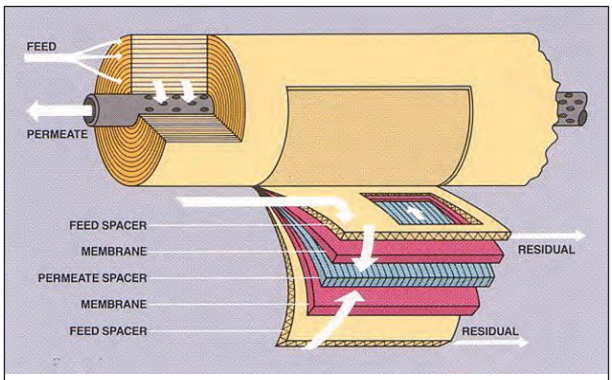

Fig. 2. Spiral-wound membrane element.

EFFECT OF OPERATING CONDITIONS ON MEMBRANE PERFORMANCE

The general effects of feed pressure, temperature and permeate pressure on membrane skids, while holding other conditions constant, can be summarized as follows:

1. Feed Pressure: Higher pressure increases the driving force, which increases permeation rate and reduces system size with slight decrease in hydrocarbon loss. Organic gases and vapors show a dependence on pressure and concentration by virtue of the strong interaction between solute and membrane. (See Fig. 3)

2. Feed Temperature: An increase in feed temperature increases membrane permeability. The Log function of permeability is approximately a linear function of (1/T), where T is in °K. Increasing the temperature raises most permeabilities by about 10 to 15% per 10° C and slightly decreases membrane selectivity. Increasing the feed temperature will increase the residue purity, and stage cut, but hydrocarbon losses, and the recycle compressor power for multistage systems are increased. (See Fig. 4)

3. Permeate Pressure: The lower the permeate pressure, the higher is the driving force and therefore the higher are the residue purity,and stage cut. Unlike feed pressure, however, permeate pressure has a strong effect on hydrocarbon losses. (See Fig. 5)

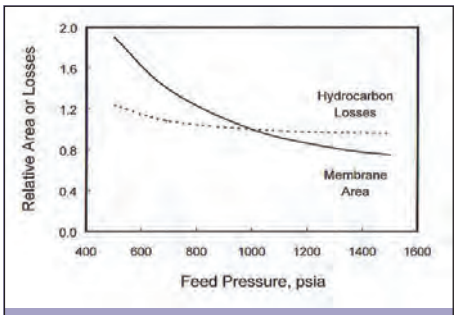

Fig. 3. Effect of Operating Pressure

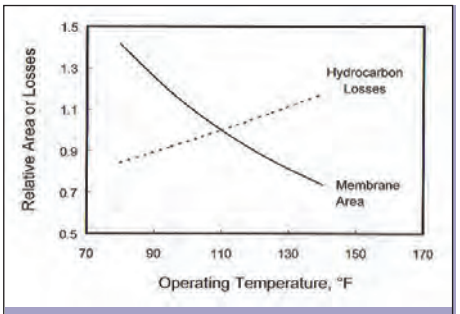

Fig. 4. Effect of Operating Temperature

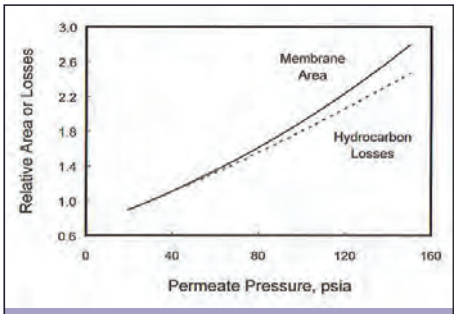

Fig. 5. Effect of Permeate Pressure

The use of spiral-wound permeators to separate gas mixtures encountered in natural gas treatment and enhanced oil recovery is one of the most important applications of membrane technology

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PUBLIC RELATIONS

Randa Arafa
Public Relations Specialist

Petroleum industry is a world of many opportunities. No matter what your speciality is, joining this fascinating rich world is not out of question even if your field of experience is not petroleum related. Petroleum importance exceeds the limits of being just an ordinary industry to go all the way up to being described; better, as a business. The success of any business depends highly on public image, formalities and protocols. A need that was addressed by virtue of establishing sophisticated strong departments that supervise such matters with skill and creativity but most importantly, with elegance and panache, preserving and protecting companies' best interests. Here to put things in the proper perspective for us; PR specialist, Ms. Randa Arafa sharing her earned three years experience with us.

Nowadays Public Relations Department is considered an important department in any company, whether it is local, foreign or even a multinational company, some might even say, it is the mirror that reflects the image of the company, or as commonly known; the first impression. Most professionals worldwide, grade companies through public Relations departments. When I was told that I have been chosen to work in a public relations department, I thought that I would have an easy spoiled job, but after working for a short period in this department, I can assure that only people out of this loop make such a falsely naïve conclusion. The rapidly growing importance of PR Departments arise from the delicacy and sensitivity of the role they control in a company's relations strategy, a matter can singly handle keeping circles on tracks, and for that reason, the External and Public Relations Manager must be a person of unique talents and profound skills, not only that, but he or she has to have abundance of intelligence to win people over, gaining their trust and respect in the process. And maybe here; as a PR specialist, I can highlight; within the shade of my personal experience, some of the traits that one needs to acquire and possess in order to qualify for a job of that caliber.

1. Personality (humorous, friendly, frank, drill-sergeant disciplinarian, motherly, non-judgmental). Do not assume that what appeals to you most, also appeals most to your target market.

2. Values (respect for tradition and honesty above all). For example, you might be selling office supplies but set yourself apart from the pack by letting it be known that you donate excess or discontinued inventory to a local homeless shelter.

3. Relationship (constant contact, distant but on-call). You can stand apart from competitors by being the one who proactively checks in with clients and returns all phone calls within an hour. Or you can set yourself up as the expert who will never schmooze or go out to lunch with clients, but work hard to save their neck when trouble comes calling.

4. Method of working (speedy, methodical, creative). You have to know how to handle deadlines, manage to work under pressure, If you are a web designer, perhaps your specialty is impossible deadlines - or slower production but a guarantee of no bogginess or typos.

The four traits mentioned above tend to lean more towards the personal side. Now, let us take a drift into a more technical side with some of the most important technical skills you need as a PR specialist:

Writing: Communicating effectively in writing as appropriate for the needs of the audience.
Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Active Listening: Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Judgment and Decision Making: Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Time Management: Managing one's own time and the time of others.
Persuasion: Persuading others to change their minds or behavior.
Social Perceptiveness: Being aware of others' reactions and understanding why they react as they do.
Coordination: Adjusting actions in relation to others' actions.
Deductive Reasoning: The ability to apply general rules to specific problems to produce answers that make sense.
Inductive Reasoning: the ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
Problem Sensitivity: the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

As important as these skills are, yet alone, they cannot give you the advantage or the edge to always stay a pioneer in your field, they have to be sawed together with the fine fabric of KNOWLEDGE. And here are some pointers on some of the subjects; a good PR should have an extensive knowledge about:

Communications and Media: Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
English Language: Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
Sales and Marketing: Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
Customer and Personal Service: Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
Clerical: Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Now, for all who thought PR is just a fun ride, here is a list of tasks, PR tasks, which shall convince you otherwise, and open your eyes to the fact that PR is a very consuming job:

1. Respond to requests for information from the media or designate another appropriate spokesperson or information source.

2. Study the objectives, promotional policies and needs of organizations to develop public relations strategies that will influence public opinion or promote ideas, products and services.

3. Plan and direct development and communication of informational programs to maintain favorable public and stockholder perceptions of an organization's accomplishments and agenda.

4. Establish and maintain cooperative relationships with representatives of community, consumer, employee, and public interest groups.

5. Prepare or edit organizational publications for internal and external audiences, including employee newsletters and stockholders' reports.

6. Coach client representatives in effective communication with the public and with employees.

7. Confer with production and support personnel to produce or coordinate production of advertisements and promotions.

8. Confer with other managers to identify trends and key group interests and concerns or to provide advice on business decisions.

9. Arrange public appearances, lectures, contests, conferences or exhibits for clients to increase product and service awareness and to promote goodwill, as one of our most important tasks is subscription to Conferences & Seminars and here the public relations becomes a very hyper team trying to finish everything with a chic quick style as once we receive a request from any of the departments we start immediately by checking the conference place, reason, expenses, benefit to employees and companies and then proceed the method of payment either from the internet or via email then we start to prepare our papers to mail the conference or seminar organizer, we have to take care of every detail, guests, flight tickets booking, hotel reservation, car rental, attendee speech, every detail have to be well organized

10. Consult with advertising agencies or staff to arrange promotional campaigns in all types of media for products, organizations, or individuals.

11. We also support employees to celebrate their occasions like Christmas, New Year, Mid Year and summer, Ramadan Iftar, we even held farewell parties for employees, prepare internal trips in winter and an External Trip in Summer period which makes a good atmosphere for employees that breaks the ice among them and make all feel one family.

12. Every External and Public relations department in the world must have a well organized storage that contains every material they use like magazines, flags, signs, posters, banners, company stickers which we use in various occasions like meetings, fairs and events, memento with the company logo and finally gifts.

13. We also have routine work as every now and then we update the list of VIP contacts we deal with to follow situations and changes everywhere, to prepare labels for invitations or gifts lists, company letters, conferences and seminars subscription….etc.

Randa Arafa acquired her Bachelor degree of Law from Ain shams Uni. in 2006. She took her first step into the petroleum industry working in Public relations, throughout the past few years she gained abundant experience in fields of PR training coordinator, assistant training and developing Management, Team assistant and public and External Relations Officer.

Mr. Ahmed Wafa

Recruitment Manager (FODP) - Eastern Hemisphere, HR Manager Halliburton

Mr. Ahmed graduated from the American University in Cairo in 1998, he majored in electronics, and then he com¬menced his career as a sales engineer at Giza Systems Com¬pany. Shortly afterwards, he joined SLB's operations unit for two years. After a six years journey at IBEROTEL working initially as an assistant engineer, he had a sudden change of heart, as he was promoted to be HSE manager of IBEROTEL, only to leave it later on to finally join Halliburton as an HSE coordinator. For his last shift of careers; he settled currently on filling Halliburton's-HR manager and Recruit manager for the Eastern Hemisphere-positions for the time being.

First of all, we would like to show our outmost gratitude and appreciation for the huge efforts you made to spare us a portion of your valuable time and fit us in your busy schedule on such a short notice. Mr. Ahmed, there is no doubt that your company's name is only proceeded by its reputation; even on a global scale, but for the sake of clarification to the few minority that are not aware of what Halliburton does exactly, may you enlighten us on Halliburton's historical background?

Halliburton is a multinational American-based company, specialized in oil field services. We are dealing with vast number of petroleum companies like; BP, BG, Petrobel, Khalda and GUPCO. Our tasks begins with ones as simple as surveying, to more complex and complicated ones such as drilling, cementing, casing, production. In other words, you can say the entire cycle of oil production. Our influence is not limited to Egypt as we operate in more than 70 countries with over 50,000 employees of 121 different nationalities and two main subdivisions; Western and Eastern hemispheres, the former runs our operations in Northern and Southern Americas and Canada, while the later sees over our operations in; African, European, Asian, Far Eastern, Middle Eastern and Australian territories. Egypt comes in the Middle Eastern African sector.

Halliburton presence in the Egyptian market has been noticed since the late sixties; particularly starting from 1969, with an incredible long list of fine achievements, in your opinion, which do you see the most outstanding?

We have the lion share in the Egyptian market if compared to our rivals; add to this, the fact that we regularly feed our branches all over the world with Egyptian manpower, and that is, in my opinion, our finest achievement throughout our history.

Facing problems and obstacles is a must in any line of work, the bigger the firm; the more complicated are the problems it faces. We are curious to know the challenges that a company of your high caliber faces and the procedures taken to prevent them?

Thanks to Halliburton's sophisticated public relations departments that work around the clock to ensure and maintain good working relations with both; our

clients who expect us to always rise to the occasion, as well as governmental agencies, leaving no chance for any setbacks or even delays. The only issue that could count as a problem is recruiting.

Statistics show that Halliburton's staff here in Egypt is 96% Egyptian, can this be taken as an indication that Halliburton can easily find the fresh graduates who success to meet its hiring criteria?

As I already mentioned; recruiting comes as a problem to us. In fact, it is not an easy task at all, although Egypt enjoys a rich pool of possible candidates. However; they lack certain required qualifications and need to be more developed in specific areas.

What are the major differences between Halliburton and the other competing oil servicing companies?

A vast majority of the oil servicing companies offers the same services as Halliburton provides, but what makes Halliburton unique in its field is without a doubt its high standard quality work. Halliburton is known by its quality service, as we work in accordance to a very complex matrix that measures different working parameters including; how a specific job is done, its minimum standard quality requirements and above all, the customer's satisfaction and recommendations regarding the service provided. In addition to that, Halliburton is more concerned with the safety regulations followed in the working environment; as we insist in making sure that the working personnel are in a safe working environment during working hours at all times.

Halliburton is well known for its tough recruitment system and its shockingly high standards, we are sure that our readers both; under- and post- graduates, would be extremely interested in knowing the criteria you refer to in hiring and accepting applicants?

The certain criteria we are searching for is a passionate, highly innovated and an enthusiastic person who does not mind working in irregular working hours and under tough circumstances. As for the engineers; they will have to cope with the field's harsh working environment, putting into consideration that what they will face in the oil field is not as simple as the different curriculums they studied in college. As for the office employees the criteria is different, the employees must have the "can do" action, accompanied by the capability of solving any problem faced without referring to its importance. Here in Halliburton we do not have standard requirements, personality is the most important aspect we are looking for. We do not set years of experience and we hire fresh graduates as well as experienced people, in other words; we hire the ones we think are capable of coping with our working environment.

Through your experience, what is the most common aspect you noticed that fresh graduates lack, and who is the one that Ahmed Wafa will not hesitate to hire him?

As I mentioned before, the one who wants to work in such a field must love his job as it is a very harsh working envi¬ronment and only few people can with¬stand these working conditions, so; if you do not love that field, be sure you will not last in it for long. Besides that, you have to accept the idea that you will be work¬ing from dawn to sunset, sometimes you will have to work while others are in va¬cation, bottom of line, I will only hire the one who takes his work as a way of life. As for the certain aspect the fresh grad-uates tend to lack, I would have to say; patience. They want to be promoted to managers so fast without even searching for the experience. They have to learn how to be patient as the packages and the salaries they dream of earning will only come from experience that they will earn sooner or later , so they have to build a good foundation for their career.

You have mentioned that fresh graduates want to be managers so fast. We want to know the key quality which aids you to be a successful one?

Learn how to think outside the box, never place a limit to your mind thinking, give your job a 100% or even 110% of your priorities, always think about how is the company operating as a whole and you have to keep your mind open to any changes that may occur through your career. There is always a possibility that you can start all over again from the beginning, I did it before, and I have worked in three completely different fields. You always have to keep in mind that if you have a target that turns out to be contradicting with your ambitions or simply; you cannot achieve it for the time being, then you have to give it up for a new one, on the hope of making your way back to it when the right moment comes.

During looking up in your professional ca¬reer, it rose to our attention the fact that you have worked as an HSE, SR and HR coordinator, what a diversity challenge! How did each spe¬cialty influence Ahmed Wafa to participate in making him what he is today?

Before joining Halliburton, I was working SLB's operation unit, where I met the safety staff and basically liked the idea of being concerned over the working en¬vironment and the safety of employees. I enjoyed that line of work; following safety regulations, awareness of the dif¬ferent HSE fundamentals, taking care of employees to return them home safe, and for that sake I decided to switch my career to an HSE coordinator. After joining Halliburton I began giving training cours¬es in HSE, then managers promoted me and I started working with the training section in the Human Resources departments giving training courses about HR, from that per¬spective I started observing the HR work and I was fascinated by the idea that they are taking care of the human being; as I am more of a socialized person, in HSE we were only taking care of employees' safety while in HR we are taking care of everything else that deals with the employees themselves. I love working and dealing with people; that is why I left the engineering path and started working in HSE and HR as it became clear to me that those are the targets I could build a successful career on.

Time has run out and so have our questions, sadly we have to put an end to such an interesting interview, but before we do what do you advise our readers, particularly students?

The major problem for a college graduate is that life in college is completely differ¬ent from that of work; I want students to always accept what is coming next, take life one bit at a time, do not rush things, be flexible and to always think outside the box, but of course that does not mean you can bend the rules against the code of business and most importantly, do not ever sacrifice your ethics.

Quick Take

Experience: Years, it is a life time ongoing project, every action you do in life increases it.
Challenge: Spices of life; without it, life has no meaning.
Professionalism: Is an attitude.
Failure: Is a must to appreciate life.

FISCHER-TROPSCH PROCESS

An Old Technology with a Promising Future

Mohanad M. Said
Faculty of Petroleum and Mining Engineering
Suez Canal University

Young talented creative minds are the main artery that feeds the success of any industry, the inexhaustible spring of innovation that keeps the world rapidly growing and spinning around us, here at this magazine we are trying to be the beacon that shades the light on those minds.

INTRODUCTION

Synthetic fuels represent an interesting alternative to petroleum which can sometimes be in short supply and- as is the case today- also quite expensive. One of the most efficient ways to create synthetic fuel is through what is known as the Fischer-Tropsch (F-T) process. It was invented in the 1920s by Franz Fischer and Hans Tropsch, scientists at Kaiser Wilhelm Institute. The F-T process was initially used to save Germany's need for fuel in the midst of a petroleum shortage by converting coal, which was abundant in Germany, into synthetic fuels. Both Germany and Japan used this fuel during World War II. By 1944, Germany was producing 124,000 barrels of synthetic fuels on a daily basis from 25 F-T plants. After the war, research continued in the U.S. on the hands of German scientists. During South Africa's economic isolation, Sasol Corporation used the process to meet the country's energy needs using both natural gas and coal as feedstocks. Shell has also established another plant in Bintulu in Malaysia which uses natural gas as feedstock, to be the first of a series of still under construction F-T plants. The process is thought to have a promising future and many companies are trying to apply this technology on a wide scale.

PROCESS

A- Syngas generation:

Synthesis gas generally refers to a mixture of carbon monoxide and hydrogen. The ratio of hydrogen to carbon monoxide varies according to; the type of feed, the method of production and the final usage of the gas. There are different sources for obtaining synthesis gas. It can be produced by steam reforming or partial oxidation of any hydrocarbon ranging from natural gas (methane) to heavy petroleum residues. It can also be obtained by gasifying coal to a medium Btu gas (medium Btu gas consists of variable amounts of CO, CO_2, and H_2, which is used principally as a fuel gas). The major route of producing synthesis gas is the steam reforming of natural gas over a promoted nickel catalyst at about 800°C.

$$CH_{4\,(g)} + H_2O_{\,(g)} \rightarrow CO_{\,(g)} + 3H_{2\,(g)}$$

B-Fischer-Tropsch reaction:

Fischer Tropsch method uses synthesis gas produced from sources that yield a relatively low H_2/CO ratio, such as coal gasifiers. This, however, does not limit the process to low H_2/CO ratio gas feeds. The process of obtaining liquid hydrocarbons from coal through FTS is termed indirect coal liquefaction. It was originally intended to obtain liquid hydrocarbons from solid fuels. The reaction may be considered as a hydrogenative oligomerization of carbon monoxide in presence of a heterogeneous catalyst. The main reactions occurring in FTS are represented as follows:

$$2nH_2 + nCO \rightarrow C_nH_{2n} + nH_2O \text{ (Olefins)}$$

$$(2n+1)H_2 + nCO \rightarrow C_nH_{2n+2} + nH_2O \text{ (Paraffins)}$$

$$2nH_2 + nCO \rightarrow C_nH_{2n+2}O + (n-1)\,H_2O \text{ (Alcohols)}$$

The produced water reacts with carbon monoxide (the shift reaction), yielding hydrogen and carbon dioxide:

$CO + H_2O \rightarrow CO_2 + H_2$

The gained hydrogen from the water shift reaction reduces the hydrogen demand for FTS. Water gas shift proceeds at about the same rate as the FT reaction continues. Another side reaction also occurring in FTS reactors is the disproportionation of carbon monoxide to carbon dioxide and carbon:

$2CO \rightarrow CO_2 + C$

This reaction is responsible for the deposition of carbon in the reactor tubes in the fixed-bed reactors and reducing heat transfer efficiency as well as catalyst activity.

C-Catalysts:

A variety of catalysts can be used for the Fischer–Tropsch process, but the most common are the transitional metals; cobalt, iron, and ruthenium. Nickel may also be used in this process, but tends to favor methane formation. Cobalt seems to be the most active catalyst, although iron also performs well and can be more suitable for low-hydrogen-content synthesis gases such as those derived from coal due to its promotion of the water-gas-shift reaction. In addition to the active metal, the catalysts typically contain a number of promoters, including potassium and copper, as well as high surface area binders/supports such as silica, alumina and zeolites.

D-Reactors:

Two reactor types are used commercially in FTS; a fixed bed reactor and the other one is known as fluid-bed reactor. Fixed-bed reactors usually run at lower temperatures to avoid carbon deposition on the reactor tubes. Products from fixed-bed reactors are characterized by low olefin content, and they are generally heavier than the products of fluid-bed reactors. Heat distribution in fluid-bed reactors, however; is better than that of fixed-bed reactors, thus, fluid-bed are generally operated at higher temperatures. (Fig.1. shows the Synthol fluid-bed reactor).

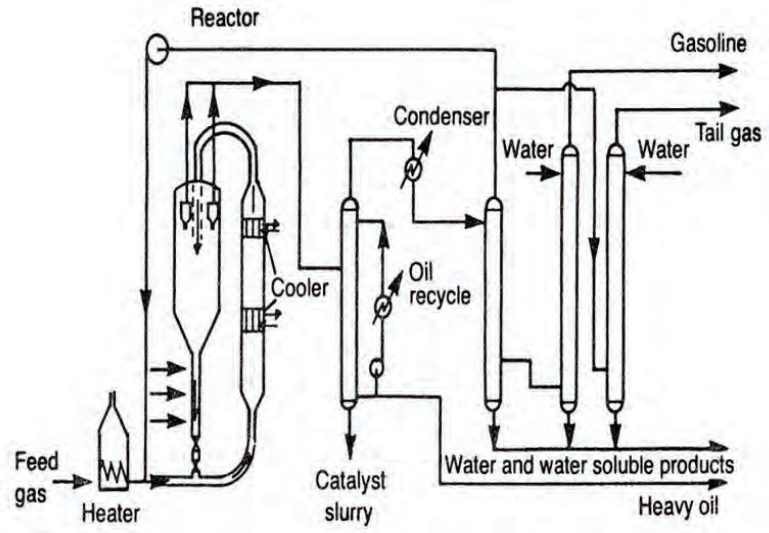

Fig.1. A flow chart of the Synthol process.

APPLICATIONS

Fischer-Tropsch process has many important applications, namely:

1- Providing alternative source of liquid fuel other than oil. Natural gas-as a source of Syngas which is used in the mentioned process- is expected to be a strong competitor due to:

A- Large increase of natural gas reserves.

B- Rapid rise of oil prices.

C- Environmental pressure to decrease the flaring of associated gases.

D- Improvements of cost effectiveness of Fischer-Tropsch technology resulting from more active catalysts.

2- Producing lubrication oils with high VI "Viscosity Index".

3- Producing fuels with preferred properties. (High quality diesel produced by Shell).

4- Biomass conversion:

This is considered as one of the most promising technologies. Combination of biomass gasification (BG) and Fischer-Tropsch synthesis will enable production of renewable fuels. Waste biomass could be used as a feedstock for this process so; food reserves will not be affected.

POSSIBLE FEEDSTOCKS

1- Wood:

Wood consists of lignin cellulose and hemicellulose with a composition varies depending on the type of wood. Wood logs or stem wood are the perfect feedstock for BTL (Biomass to Liquid) applications, as it contains considerably low amounts of impurities and harmful substances. But the price of wood logs is high due to competition with other industries as paper and furniture industries.

2- Straw:

Straw is considered as a waste problem and has limited alternative usage. Thus, straw is considered as a perfect feedstock for BTL systems and applications.

BTL TECHNOLOGY STATUS AND OPERATED PLANTS

Despite, coal and natural gas based Fischer-Tropsch technologies effectiveness is well proven, no commercial plants are currently operated with biomass integrated Fischer-Tropsch technology. Nevertheless, recent rise in oil prices and awareness of global warming have sparked interest of the topic. Although, few pilot plants are currently operated, some projects have been initiated.

Some of those installed pilot plants are:

1-Choren, Freiberg, Germany.

2-Repotec, Gussing, Austria.

3- CHRISGAS project, Värnamo, Sweden.

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MANAGED PRESSURE DRILLING

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"A new way of looking at drilling hydraulics …Overcoming conventional drilling challenges" Don M.Hannegan, Weatherford International Ltd.

As the current reserves is being depleted, it was necessary to begin drilling reservoirs that are greater in depth and more complex, some industry professionals stated that 70% of the current hydrocarbon offshore resources are considered to be economically undrillable using the conventional drilling methods.

Managed Pressure Drilling (MPD) is a new technology that uses tools that are similar to those of underbalanced drilling in order to control pressure variations while drilling a well. The aim of MPD is to improve the drilling efficiency of a well by alleviating any drilling issues that can arise.

MPD can improve the economical value for any well being drilled by reducing the rig's nonproductive time (NPT)which simply is; the time measured when a rig is not drilling. Therefore, many of the drilling problems in any well can be reduced by using this technique.

Pressure-Gradient Windows

As a well is being drilled, the drilling fluid is circulated in the well bore to obtain a specific bottom hole pressure (BHP). The density of the fluid is determined by the formation and pore pressure gradients and the wellbore stability.

Fig. 1 shows a pressure gradient profile of a well; this profile represents the change in pressure with the increase in depth, the area enclosed within the pore pressure and the fracture represents the allowable pressure window.

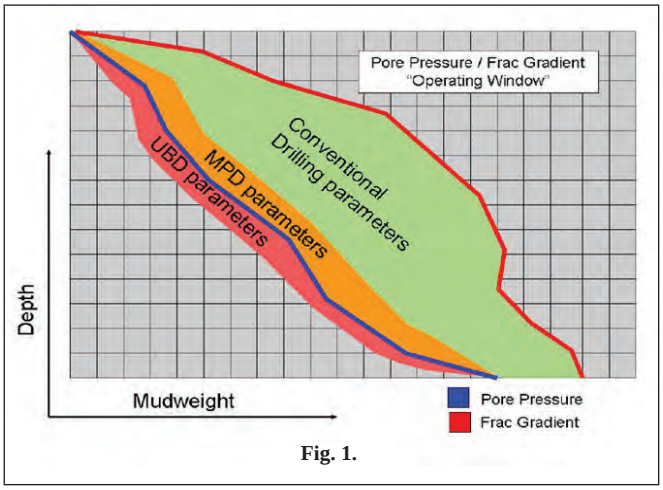

Fig. 1.

The main aim while drilling a well is to keep the pressure within the pressure window range. In a static well, the pressure is determined by the hydrostatic pressure of the mud whilst in conventional drilling, the only way to adjust the pressure during static conditions is to vary the mud weight in the well.

Where:
BHP: Bottom Hole Pressure , HH(MW): Hydrostatic Head of mud , AFP: Annular Friction Pressure.

Fig. 2 shows the problems that can occur when dealing with tight pressure-gradient windows. When the well is static, the pressure in the well is less than the pore pressure, therefore the well undergoes a kick and hydrocarbons begin to flow into the well. After a connection is made; the pumps restart, the BHP (Bottom Hole Pressure) increases, and then pressure also increases above the fracture-pressure resulting in a loss of circulation or fluid flowing into the formation. The aim of MPD is to manage the pressure by confining it inside the pressure gradient window which simultaneously leads to avoiding various drilling problems.

How Managed Pressure Drilling Works

The basic technique applied in MPD is manipulating the BHP and the pressure profile as required. In conventional drilling, the (BHP) can be calculated by the summing of the mud weight of the hydrostatic head and the Annular Friction Pressure (AFP) which is the friction pressure that results from the circulation of the mud while drilling. ECD is defined as the "Equivalent Circulating Density" of the bottom hole pressure, it is basically the BHP while circulating but converted into the units of mud weight. During a connection, the pumps are turned off and the fluid stops circulating, thus eliminating the annular friction pressure and reducing the BHP to the mud hydrostatic pressure.

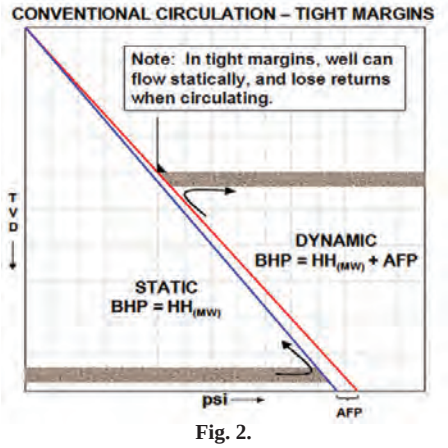

Fig. 2.

MPD uses a closed and pressurized mud system where with such a system; the equation for the BHP can be varied to include the backpressure. Adjusting the backpressure while drilling can quickly change the BHP. The basic configuration for MPD is to have a Rotating Control Device (RCD) and a choke. The RCD diverts the pressurized mud returning from the annulus to the choke manifold. A seal assembly with the RCD enables the mud returns system to remain closed and pressurized. The choke along with the pressurized mud return system allows the driller to apply backpressure to the wellbore. If the pressure starts to climb above the fracture pressure of the formation, then the driller can open the choke to reduce the backpressure bringing the pressure down. If the need to increase the pressure throughout the well arises, the driller can simply close the choke to fulfill that need.

The Need for Managed Pressure Drilling

The need for MPD is clearly illustrated by current drilling statistics and problems that currently exist. More clarification on that point is given by the aid of Fig.3 which shows the results of a database search of NPT (Non-Productive Time) while drilling offshore gas wells.

MPD can solve a large percentage of the problems stated in the above database, especially those that are caused by wellbore pressure deviating out of the pressure gradient window during drilling operations. Table 1 shows the NPT from Fig. 3 that could be reduced by using MPD.

Lost Circulation	12.8%
Stuck Pipe	11.1%
Kick	9.7%
Twist Off	4.2%
Shallow Water/Gas Flow	2.0%
Wellbore Instability	0.6%
Total Downtime	**40.4%**

Table. 1.

Numerous problems can occur if thewellbore pressure goes below the pore pressure gradient. At shallow depths, water or gas can flow into the well bore and as previously mentioned above, a kick can occur. With a lower pressure in the wellbore, the hole can also become unstable and start to fall in on the drill pipe. A problem that could lead to pipes becoming stuck or even cause a twist off or break in the drill pipe. The main problem when the pressure exceeds the fracture pressure-gradient is losing mud into the formation. Reservoir damage can also occur and the wellbore can become unstable. These problems accounts for more than 40% of the drilling problems in the last ten years this study had covered. Also according to this study ,If we can eliminate the problems with MPD, we could reduce the drilling hole costs by nearly $39 per foot drilled, which means that in wells drilled to 15,000 ft, that can equate to an average savings of $585,000 per well.

Conclusion

Drilling programs using MPD technology are in the progress of enabling more precise wellbore pressure management; MPD is now being widely recognized as a step-change technology, more readily acceptable to offshore drilling decision-makers than true-state UBD.

"A new way of looking at drilling hydraulics … Overcoming conventional drilling challenges" **Don M.Hannegan, Weatherford International Ltd.**

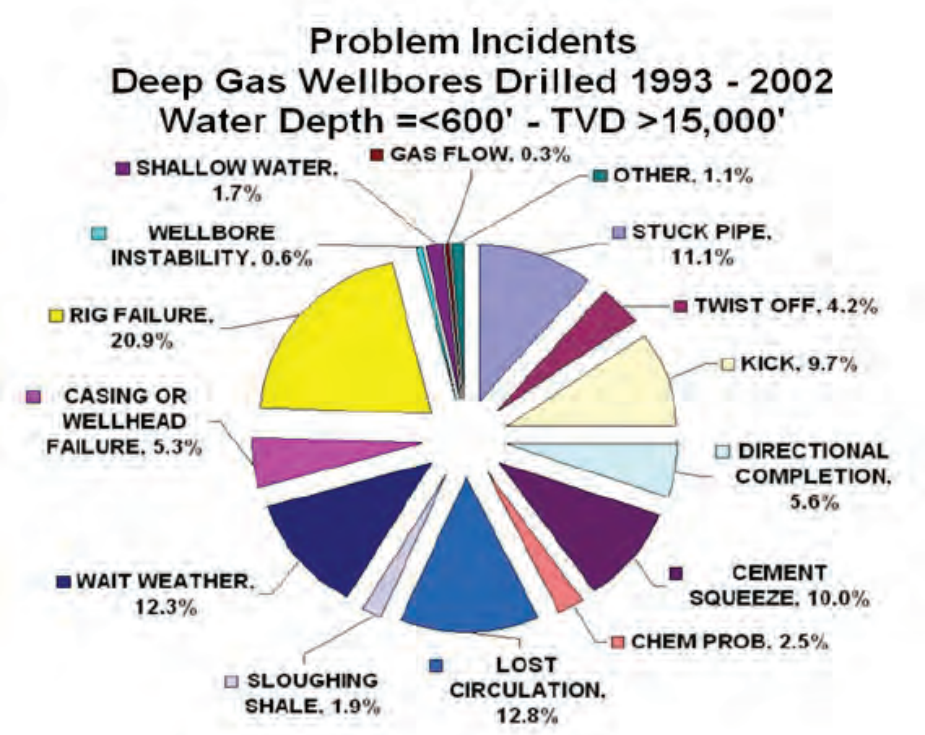

Fig. 3. Report of drilling downtime, TVD > 15,000 ft (from Dodson)

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MINES DETECTION

* For more precise elaborated details and notes on the research, feel free to check it at www.spesuez.org/virtualcampus/mine.html on our virtual campus

Ahmed E. Abdulkader
Faculty of Electronic Engineering in Menof

As a publication of a chapter related to petroleum and mining engineering, it is only normal for our readers to mistake this article for a one about detecting ore bodies or even mineral accumulations. Detection of explosive mines is far more important, complicated and obviously more dangerous. However, as remotely as it is from our fields of expertise, it is still considered as a form of detection. Here; we present to you a team of young engineers who saw this as threat on human life everywhere, and a powerful incentive to innovate a new way to deal with such a life-threatening dilemma.

Overview

There are two main types of mines, these are:
1. Anti-personal mines
2. Anti-tank mines

There are also many inventions related to mines detection; for example:
1. Minesweepers which are very expensive.

2. Metal detectors, but this method is insufficient. The Demining team that uses metal detectors may be asked to work with the aid of personal protective equipment such as helmets, visors and armored gloves as safety percussion in case a mine is set off accidentally. Personal protective equipment is also expensive.

3. Dual sensor; one of the latest available systems that consist of a hybrid approach employing both GPR (Ground Penetrating Radar) and metal detector in a single instrument. (See Table.1)

An abstract of the project's technological concept; explained by the working members of the team

We applied a real time control to the robot:

1. We used a wireless controlled robot with a dual sensor device to detect the presence of mines.

2. The wireless controlled robot is prepared to operate in desert-like environments. It has the ability to climb hills and sand dunes. It is also designed to move over mines without causing it to explode.

3. The operating range of the wireless controlled robot reaches 1500 square meters in free space.

4. Real time control of the robot includes:
a) An alarm that goes on when the robot is about to move out of the wireless coverage area.
b) A Power saving system that also gives an alarm when power is running out.
c) A distance estimation system that calculates the distance covered by the robot to locate the mine's position exactly.

5. Radar technology and metal detectors are then used to determine the nature of the found object.

6. Radar can give a 2 dimensional image for objects by using image processing methods.

7. Live observation of the robot's movements during the mines detection operation can be easily carried out using a wireless camera.

Development

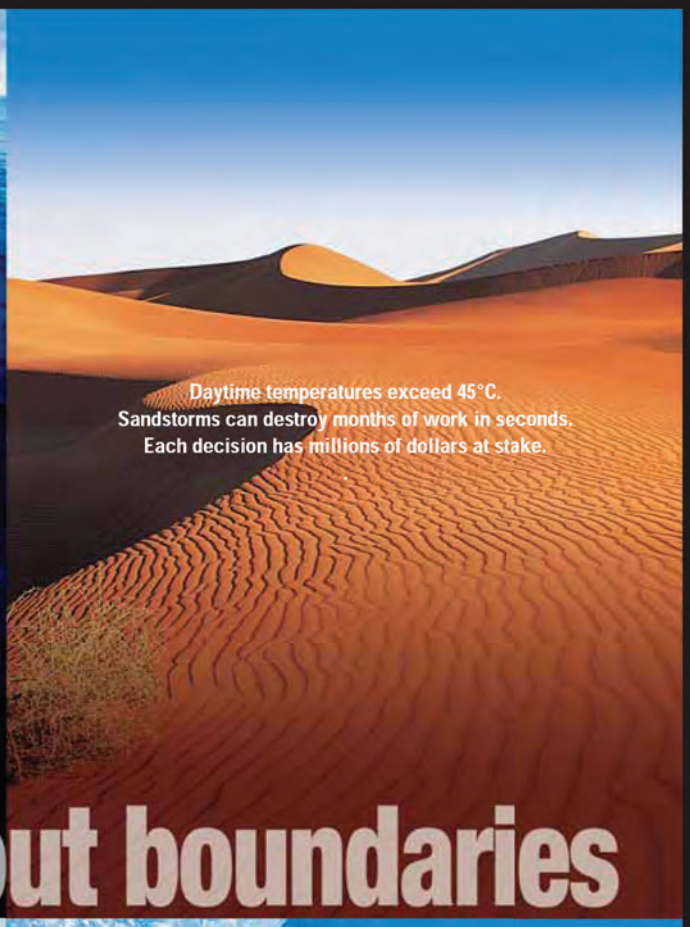
We are looking forward to modifying the robot so as to be operated by a hydraulic system to disarm and remove mines.

Team's final word

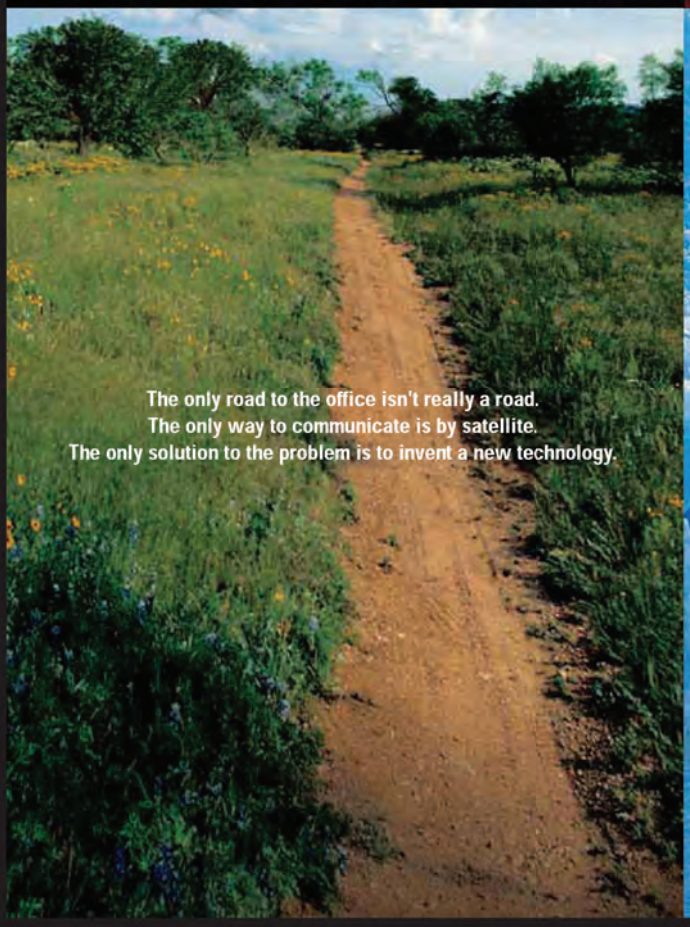
Egypt contains over 23 million mines buried under its soil. This device can help us clear our soils from all the buried mines, ensuring safety and tranquility for our nation. Moreover, all the unused lands because of the underground mines would be available for exploitation in many fields of industry, like petroleum exploration and tourism.

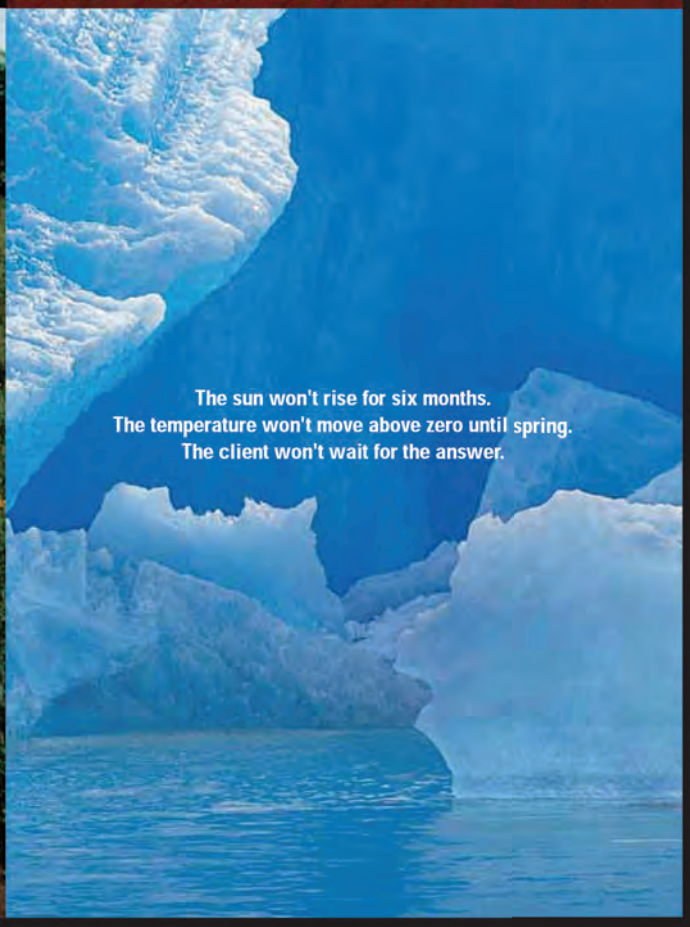
Sensor techniques	Maturity	Cost and efficiency	Non metal mine detect
Metal detection	available	low	poor
infrared	near	medium	good
GPR	near	medium	good
Ultra-wide-band	far	high	good
Active acoustic	medium	medium	good

Table. 1.



Success without boundaries





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LEADERSHIP STYLES

Aya M. Ismael
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Suez Canal University

Success?! What is success? Am I successful? What does it take to be successful and do I have it? The interpretation of such a big word varies from one person to another but at the end of the day one can only agree that success is all about reaching goals and fulfilling potentials, it's a long rough road with many obstacles in the way, but with motivation and inspiration these obstacles can be demeaned nevertheless overcome leading the way to a world full of endless possibilities. Other people successes might just be the kind of inspiration that you are looking for at this critical point of your life as a college student, so stop! take a few moments of your time and find out how they did it?!

Being successful in your job does not always mean that you were an "A" student in your college, or even depends mainly on how good technically and scientifically you are. On the other hand, there are no arguments about the importance of these things. But there are many other aspects -away from what you have learned throughout all your academic stages, either school or college- that can help you become much more successful in your job, and also help you achieve your goals faster, some of these things are "leadership styles and skills".

Well, you are probably asking yourself "What does possessing leadership skills have to do with me as a fresh engineer?" Well, The answer for that simply is; having the skills of how to be a successful leader can help you achieve your goals faster, and who knows? Maybe one of these goals is to become a leader of a team in one of your company's projects! That is why it is important for you as an engineer to know about the different styles of leadership and how to use them to contain the different situations that might face you as an engineer.

Before talking and discussing the different styles of leadership let me tell you what leadership is, "it is a process of social influence in which only one person can enlist the aid and support of others in the accomplishment of a certain task". Alain Keith who is a theorist in leadership behaviors and authorities said that leadership is ultimately about creating a way for people contributing to making something extraordinary happen."

With that small introductory behind us, it is now time to talk about the different styles of Leadership which can be mainly divided into three main types:

1. Autocratic Leadership.

The Autocratic style of leadership is a classic style which depends mainly on the leader being the only decision maker and taker, with least consultation with colleagues, which means that the leader is the only one responsible for any taken decisions.

This leadership style helps making faster decisions, as well as giving much control to the leader over the task that he is responsible for, leading to a more productive group. But, on the other hand, centralized decisions are not always beneficial, although consultation might be time consuming, but it could help the leader reach better decisions, also one of this style disadvantages is that some people can't work efficiently while being always ordered, in addition to the excess stress and responsibility that the leader would impose.

member to work harder and harder. All this factors together combine to give extra creativity and productivity. This style surely has some disadvantages; some of which are time consumption due to continuous consultations and debates, in addition to losing control over the group incase of having negative spirit amongst team members.

3. Lessaiz faire Leadership.

The third leadership style is called "lessaiz faire ". When a leader decides

styles according to the current situation. Sometimes the autocratic style is the best to be used especially in critical situations; when a decision has to be made as fast as possible. In other situations the democratic style is much more suitable, for example if a group is going to start a new task, sharing ideas in making decisions will make the task more successful. So we can say that it's very important to choose the right style for each situation.

Finally, In order to be a successful

having the skills of how to be a successful leader can help you achieve your goals faster, and who knows? Maybe one of these goals is to become a leader of a team in one of your company's projects!

2. Democratic Leadership.

The Democratic style leadership is the exact opposite of the Autocratic style. This style is based mainly on the concept of sharing and implementing different ideas provided by all the team members. In this style consultation which is the backbone of this style is continuously applied, and as a result of consultation the leader eventually reaches the best decisions possible.

A positive working environment is developed in this style as a result of consultation and sharing. This makes each member of the team feel like he is partially responsible for each decision made by the whole team, which will give a great motive each team

to apply this style it means that he will give the complete freedom to all the team members, meaning that they can make their own decisions as well as taking actions without having to check with him. The leader interferes only if asked.

This style of leadership seems to be the best as it increases freedom of taking decisions and reduces working with directed orders, which is very convenient for most of the people working in a group, and also it reduces the stress and responsibility of the leader. But this style can turn everything into a great mess and chaos when used in the wrong time, or with the wrong type of people.

After discussing the different leadership styles, I have to tell you that it's not only that you need to know each style, it's also that you need to know how and when to use each one of them, so we can say that each of these styles is a "double edged weapon".

A single style will not apply for all situations that the leader experiences, so the leader has to be flexible enough to switch between different

leader, you have to be aware of some elemental factors that contribute to the making of a good leader:

First of all, you have to define a clear and definite vision for your career. You should also have the ability to set your own goals.

In addition to that, you have to be an effective communicator, in other words; you must have the ability to communicate with all the members of your team at all levels, and develop conflict and confrontation skills.

Moreover, you need to know how to be a motivator, how to encourage your team members. Also, you should know how to praise them for their work, give them credit for what they have done in order to excite their potentials and help increase their productivity.

At last, the most important factor is the ability to learn and develop. The key to continuous success and development is life-long learning and life-long planning and working.

HUMAN FACTOR EXTRACTS

Moustafa Hashem
Former QA Manager
Petroleum Air Services, PAS

For the success of any business, there are four main factors that must coexist in harmony and those are; machine, man, management and money. Out of these factors, the human element (Man) is the most crucial, flexible and critical one. Therefore, the content of this article will drift greatly towards that important factor highlighting its role in the industry and the relations that ties it to the other three factors in this so called SHELL model:

Software	Procedures, manuals, checklists, computer software etc.
Hardware	Machine tools, ground equipment, access within the work place etc.
Environments	The situation (surrounding) in which the S-H-L system must function – noise, lighting, temperature, hangar space etc.
Lifeware	Human – (you) including colleagues managers, supervisors etc.

In the shown diagram the life-ware (Human factor) in the model represents the core or the essence of the whole industrial process, the one that deals with managing and controlling other components including other life-wares (labors and co-workers).

To get the maximum out put and best performance of this model, certain conditions and relations should exist between the lifeware- in the center of the model- and other components. The bilateral relations can be simply explained as follows:

L-S This encompasses human and the non physical aspects of the system such as document design, i.e. maintenance and operation manuals, procedures, training; manuals, rules and regulations.

L–H "Machine to human" (ergonomics). It addresses many characteristics such as; the design of tools to fit the human user as well as his own required efforts to operate the desired tool, not only that, but also assures that machineries are equipped with effective display monitors and gauges that match the sensory user's information processing. Two more important factors should be considered here. First, the design should not interfere with the work space or limit the accessibility; last but not least, the design should insure the highest level of reliability that the equipment will always perform as perfectly as possible.

L–E "Conditions in which the life-ware must function". On that list you should find the minimum possible conditions that must be provided for the life-ware to function properly and safely in terms of temperature, noise and disturbed circadian – rhythms – due to shift work.

L–L "Interface between people". This category covers the facets of interaction between life-ware and other life-wares; namely regarding, individual proficiency, the proficiency of the team as a whole and its effectiveness, group influences, behaviors and its affect on performance, staff-management relations in terms of; leadership, cooperation, team work and personality. Finally, the last aspect of such a category is the domestic pressure or the corporate culture itself, even the corporate climate and company operating procedures; all can significantly affect human performance.

Considering the facts given in the previous SHELL model and viewing people as the central value gives us a scoop on what motivates people to show the highest degree of active compliance. Motivation reflects the differences between what a person can do and actually will do. Motivation is what drives a person to behave in a particular manner. People are different and driven by different motivational forces.

Motivation is a central task for management to identify what people need and then meeting them in such a way that employees will reciprocate by doing whatever required from them.

In final words, Humanist psychologist Maslow in 1943 argued that humans seek to satisfy ever higher levels of needs other than basic survival needs (food, water, … etc); rising through safety needs, belonging , self esteem cognition, aesthetics and culminating in self actualization.

INTERNATIONAL PETROLEUM TECHNOLOGY CONFERENCE, IPTC

Mohammed Borhan Bakeer
Chapter Vice President (2009-2010)
Chapter President (2008-2009)

About IPTC

IPTC is a collaborative effort between the European Association of Geologists and Engineers (EAGE), the Society of Petroleum Engineers (SPE), the Society of Exploration Geophysicists (SEG) and Gas Processors Association (GPA). The synergy of these four leading member-driven international societies provided the most comprehensive opportunity to form multi-disciplinary committees and an outstanding technical program.

SPE is the lead organization in the management of the event, following the model of the very successful annual Offshore Technology Conference (OTC) produced each May in Houston. The activities and format closely parallel to that of the sponsoring societies' Annual Technical Conferences and Exhibitions, meaning that regional oil ministries, industry leaders and governmental representatives have had an opportunity to; share and discuss their views on timely industry topics and trends, exchange expertise and experience, present state-of-the-art technology and innovation, and stimulate further research of technical and business activities. In addition, awards and recognition have been given for individual efforts for technical and business contributions to the industry.

IPTC Education Week

As part of the 2009 International Petroleum Technology Conference (IPTC), a number of Oil and Gas industry sponsors hosted the IPTC Education Week, which was held in Doha (Qatar) from December 5–9, 2009. The objective for this event was to select top students who study in Engineering, Geoscience and Science degree programs from qualified institutions across the globe. As it was anticipated, 60–80 of the best students were selected to participate in this program and were invited to Doha to attend this event.

Our student chapter participation

Representing Suez Canal University Student Chapter was a great honor in such an important event of SPE International events where 75 of the best-minded students from over 35 different countries delegated and engaged in its agenda.

The agenda of the IPTC comprised of a tough but exciting and challenging program, where it provoked the best-minds to think creatively about their chosen subject of research. Mine was "Alternative Energy Sources and Future of Energy Demand".

Of course, an icebreaking meeting came first in the agenda where interesting exercises gave the opportunity for the team members to introduce themselves to each other easing the environment a lot.

In the following day, there was a glance on the sponsoring companies followed by a scientific trip to Khor El Obied sand dunes where we learned about the Geology of Qatar.

After that, the opening ceremony of IPTC took place under the patronage of Prince of Qatar and his Prime Minister, after that each group started finalizing their researches.

Field trips for the delegates to visually observe the cutting edge technology in the Petroleum Industry were held, mine was to Schlumberger Qatar.

Educational Week Sponsors

- Schlumberger
- RasGas
- Total
- ExxonMobil
- Oxy
- Qatargas
- Baker Hughes
- Saudi Aramco

The final day was the presentation day, and the judging committee evaluated the presentations.

The amusing part in IPTC is the idea of different cultures and nationalities coming together for the first time, and end up presenting their tireless efforts in their corresponding researches. It indeed reflects the diversity of races, nationalities and cultures in Petroleum Industry. However, IPTC Educational week was only a week and I wished it could have lasted more than that.

CONTINUOUS CIRCULATION SYSTEM, CCS

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Faculty of Petroleum Engineering
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Industrial obstacles and challenges are demeaned everyday by the virtue of new technological advances and engineering breakthroughs. The role of those wonder solutions is increasing with a head spinning speed. The mark of a true successful engineer is to always be up to date, tirelessly catching up with a firm steady grip to every work-related cutting edge invention and time saving outbreak.

On connecting and disconnecting drill pipes, various problems may arise. For example: Disturbing the stability of the pressure downhole and thus taking a possible kick.

The scientific principle of continuous circulation is maintaining a constant ECD (Equivalent Circulating Density) at a level not exceeding the pore fracture gradient. It refers to the concept of allowing mud to continuously flow and circulate downhole while simultaneously connecting drill pipe. Previously, the conventional method required the mud flow to be paused as the new drill pipes were added, which disrupts the stability of the downhole pressure.

CCS is a self-contained rig floor device which allows drill pipe connections to be assembled, while drilling or tripping, without stopping circulation to the wellbore. It also provides a safe, reliable means of maintaining a constant steadily circulating downhole pressure environment.

Most importantly, drilling with CCS enables wells to be drilled to the targeted depth in addition to allowing previously unattainable reservoirs to be accessed.

Using the CCS requires no changes or additions to the drill string and all tool joint connect/disconnect operations at circulating pressure take place inside a pressure vessel constructed from proven BOP components. It can be used with open annulus mud returns or with rotating BOP equipment as part of a Managed Pressure Drilling package.

The CSS being a successful technology reduces the total connection time by 75%, enables continuous cuttings transport and optimizes the solids control processes. Moreover, it enables other technologies to be used, such as True Underbalanced Drilling (UBD), Liner Drilling and narrow pore pressure/frac-gradient drilling.

Other features provided by CSS include reduced shallow water flows problems, elimination of ballooning effects, drilling difficult formations and finally reduction of kicks and stuck pipe incidents.

SUEZ CHAPTER NEWS

SPE Suez Canal University Student Chapter News Issue 2 | January 2010

BP TRAINING DAY

BP (British Petroleum) is considered to be one of the top five leading industrial companies in the world; it is also categorized as one of the major- seven sisters-multinational companies in the petroleum industry, having a variety of concessions globally including Egypt. Following its policy to provide its customers with the highest quality services, BP recruits the best technical brains in the petroleum industry.

As part of its philosophy to promote safety at work, and educate its members in all matters relating to industrial safety and accidents prevention, the SPE Suez Canal University student chapter organized a one day training course about HSE (Health, Safety and Environment) in the petroleum industry presented by the OH & SE Team Leader in BP Egypt,Eng. Haytham -El Nahas.

The course took place on the 10th of December from 10:30 A.M to 4:00 P.M in the Faculty of Petroleum & Mining Engineering premises. The attendance were fascinated by the course presentation. The presenter managed to extract interesting questions from the attendance. The overwhelming organizing efforts by the logistics committee headed by Ahmed Magdy did not pass unnoticed by Mr. Haytham El-Nahas.

PROBLEM SOLVING AND DECISION MAKING COURSES

Suez Canal University Student Chapter held a two session course in "Problem Solving" and "Decision making" presented by: Mr. Ahmed Farghaly Sayed (HR Subject Matter Expert-Market Unit North Africa - Ericsson Egypt Ltd.), this course, despite being at the end of the semester, was of a great interest and value to the faculty's students as they have been calling up for these "HR courses" in the nearest possible time.

Mr. Ahmed Farghaly was more than effective with his practical examples and simple solutions for the problems that were introduced to him by the students, but what also effectively contributed to the success of this course, were the interactive debates that took place between Mr. Farghlay and the attending students.

MS-PROJECT COURSE

After lots of interviews and waiting, 80 students have been accepted into SPE SCU Student Chapter's newest edition in their long line of courses, titled "Managing projects using Microsoft Project". As extensive as it is, none the less; it will take place over two semesters' period. So far five sessions have been completed in the first semester. The vast number of course candidates occupied two separate groups with two instructors; Sherif Mohammed ElSayed and Mahmoud Ahmed Gaballah both MCTSs" Microsoft Certified Technology Specialists".

The application acquired its importance as it is used to manage various projects including engineering programs. President Ahmed Magdy, emphasizing the fact that our chapter supports the students in various ways, declared that the best two of the course candidates will have their MCTS exam fees paid at any of Microsoft's testing centers.

IPTC

IPTC is a collaborative effort between the European Association of Geologists and Engineers (EAGE), the Society of Petroleum Engineers (SPE) and the Society of Exploration Geophysicists (SEG) and Gas Processors Association (GPA) with SPE being the leading organization in the management of this event. IPTC's agenda involved an educational week where a group of the best minded students in the world are provoked and challenged to creatively think about their subject of research.

Mohammed Borhan, Suez Canal University Student Chapter's Vice President participated in this event, and conducted a research about "Alternative Energy Sources and Future of Energy Demand". He also engaged in the other aspects of IPTC's agenda where people from different cultures and countries worked together in teams, reflecting the reality of the petroleum industry.

SPE ACADEMY

The SPE Academy was up to challenge again this season, providing its students with many "free of charges" courses and sessions that are considered to be of high importance on both technical and personal basis. They were represented by the faculty's staff members who are professionally involved in various fields in the petroleum industry including: Mud Engineering by Dr. Taha Moawad, Well Control by Eng. Tawfik A. Tawfik, Well Testing by Eng. Omar Saad, Reservoir Simulation by Eng. Shady Al-Rammah and Heat Treatment by Eng. Tarek Allam.

The courses were conducted on a weekly basis and the final exam that certifies the completion of those courses will be carried on the chapter website http://www.spesuez.org.

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SPE
Society of Petroleum Engineers

SPE Society of Petroleum Engineers is a professional international organization which provides a key resource for technical information related to Oil and Gas Exploration and Production, and provides services on-line, through its publications, meetings and other programs

SPE has student chapters all over the world in over 170 universities. Student chapters help university students enrich their technical academic backgrounds through events, courses, field trips, paper contests, and many other activities

The SPE mission is mainly concerned with collecting and exchanging technical knowledge concerning the petroleum industry and the related technologies for the public benefits, in addition; providing opportunities for professionals to enhance their technical competence

In order to accomplish the SPE mission, the vision was to become a society of professional excellence providing its members the highest quality, lifelong learning, and continuous personal and professional growth

For more information about SPE Society of Petroleum Engineers please visit www.spe.org

SPE International

Delivering Upstream Performance

Kuwait Energy Company (K.S.C.C), is one of the largest independent exploration and production companies in the Middle East established in 2005. Kuwait Energy is the fastest growing non-governmental exploration and Production Company in the Middle East with operations across the Middle East, Eastern Europe, and Pakistan. Today, the company has a total of 19 exploration blocks in seven countries, 11 producing assets in six countries, and operates 10 fields in four countries.

Kuwait Energy Egypt (KEE) is the operating arm of KEC in Egypt; it was established in May 2006 and has acquired many important hydrocarbon assets since then. Three of these interests are located in the western desert with a 50% working interest in the Burg Al Arab Concession, 72% in the Abu Sennan Concession and 49.5% in the East Ras Qattara Concession. KEE is also the operator of the GPC Production and Exploration Service Agreement for Eastern Desert Area "A", adjacent to the Gulf of Suez , with 70% interest, and is a partner in the Mesaha concession, on the borders of Egypt and Sudan, with 30% working interest.

KEE had announced seven discoveries in Egypt since the start of its exploration program in the country. Six of which are in East Ras Qattara (ERQ) Concession in Western Desert, Egypt. It had found Shahd, Ghard, Rana, Shahd SE, Rana SE and El Zahaa fields, with a combined daily production rate up to 5,800 barrels of oil. The latest discovery is Al Zahraa Field with a daily production rate of 2,615 barrels of oil. Currently KEE is developing Al Zahraa Field. Kuwait Energy's share and working interest of the field is 49.50% and it is operated by Sipetrol.

The seventh discovery is in Area A (Shukhair NW), with a daily production rate of 4,200 barrels of oil, and expected reserves of 8 million barrels of oil. Kuwait Energy is the operator of the GPC Production and Exploration Service Agreement for Eastern Desert Area "A", with 70% interest. This was part of the assets purchased from Oil Search Mena in 2008. The discoveries in Area A started about 50 years ago by different international companies. Today, with the new technologies used by Kuwait Energy, and by its dedicated staff, the Company was able to find new discoveries in this brown field area.

KEE has more exploration activities in Egypt at the moment, and it is expected to have more discoveries in the future.

KEE achieved one year without any recordable incidents (lost time incidents, medical treatment incidents, restricted work incidents).

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Kuwait Energy
Egypt