

EPC FOCUS

News on
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DOSSIER

Core activities:

The hidden treasures
which open up new
avenues ... **p.4-9**



CHALLENGES / Environment

EPC Metrics, a new method
for control and monitoring
of blasting ... **p.13**



BUSINESS / Subsidiaries

The Scandinavian market:
strong competition,
healthy volumes ... **p.16-17**



TECHNOLOGY / Efficiency

EPC takes off with
its new partner
Redbird ... **p.18**





EDITORIAL / 2017

EPC Group's wide geographical coverage and cultural diversity are well known today. What is less well known is the wide variety of skills that form part of EPC.

EPC Group has been a manufacturer of explosives for more than 120 years, and a provider of drilling and blasting services for more than 20 years. Around these core activities EPC Group has developed significant technologies and skills which are used in sectors far more diverse than could have previously been imagined, some of which you have probably never heard of. The Dossier in this new issue of Focus magazine is devoted to some of these 'golden nuggets'. Whether they are directly linked to our traditional skills or complementary to them, whether they form part of the development of our historic expertise (such as nitroglycerine production) or part of recently developed skill sets, these activities carry the 'EPC' label. They contribute to the economic development of the Group and the diffusion of its image of excellence and responsible working.

Olivier Obst

Chairman



CONTENTS



DOSSIER

Hidden treasures

EPC means much more than explosives for quarrying and mining. Proof of this ... **p.4-9**

CHALLENGES

Innovation

A tower that simulates a mine shaft to enhance the performance of bulk emulsions ... **p.10**

Environment

With EPC Metrics, blasting is subject to precise monitoring in real time ... **p.13**

Safety

Spotlight on the annual Safety Awards and prize-winning safety initiatives ... **p.13**

PORTRAIT

Philippe Dozolme

Introduction to the Head of Group Marketing, and issues concerning business identity ... **p.10**

Marième Sow

In touch with the feminine side, with Human Resources in Africa ... **p.15**

CONSTRUCTION

Infrastructure

The Lyon-Turin railway tunnel: a project of European-wide significance which will showcase the excellence of EPC ... **p.11**

BUSINESS

Partnership

EPC Demolition has signed an exclusive agreement with the Italian company Despe, inventor of Top Down Way® ... **p.12**

Export

EPC's technological excellence is recognised at the highest level in Vietnam ... **p.15**

Subsidiaries

EPC, having a Scandinavian presence since 2006, is now promoting bulk emulsion in a very competitive market ... **p.16-17**

Reunion

Representatives of the explosives industry from around the world met together with a common objective at the SAFEX conference ... **p.18**

TECHNOLOGY

Efficiency

With the start-up of Redbird, EPC launches its new productivity and safety system ... **p.18**

Internet

Return to EPC Group's new website ... **p.19**



NEWS

Canada, land of new conquests ... **p.14**

EPC Group's 6th Convention ... **p.14**

Peru: EPC's first step in a new market ... **p.18**

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■ DOSSIER / Hidden treasures

Over 120 years of operation, EPC has developed unique expertise in the explosives field. Today our company is one of the key players in the sector. We owe this position primarily to our traditional skills in finding solutions for our customers that go beyond simply supplying explosives. Our solutions to various challenges involve the discovery of hidden treasures which then lead on to new markets. Here are a few of the 'golden nuggets' which we have chosen to highlight in this special dossier.



The 'Viagra' effect of nitroglycerine with EPC

Explosives are first and foremost a chemical affair, in particular in the case of nitroglycerine. But this constituent of dynamite has other virtues which Futura Medical, a company specialising in the development and production of new pharmaceutical products, has discovered how to exploit with the help of EPC.



→ Nitroglycerine, a chemical principle which is taking EPC outside its traditional pathway.



→ A production process in line with the highest pharmaceutical regulations.

For many years nitroglycerine has been used as a vasodilator, which means it facilitates the dilation of veins carrying blood. This chemistry is therefore a precious ally for patients with coronary illnesses. Aware of these properties, Futura Medical decided to apply this principle locally, treating condoms with nitroglycerine so as to enhance the male erection. However, the storage and handling of nitroglycerine is subject to regulations governing explosives, so Futura Medical needed a partner to help them in their project. They chose EPC for this role.

The chemistry between EPC and the pharmaceuticals industry.

TWO YEARS OF GUARANTEED STABILITY

Several formulae were developed and tested over the last ten years. The greatest challenge was to extend the shelf life of the product, since condoms are often stored in vending machines or on pharmacy counters, sometimes for more than a year. The final formula with its guarantee of two years' stability was approved by the official bodies. Christened 'Blue Diamond', the product was first tested in Holland and was then considered ready to conquer new markets. A four-fold increase

in production is expected for the coming year!

CHEMICAL PRODUCTION REGULATIONS

Our development and production team worked closely with Futura Medical to develop a process based on a set of good practices in line with pharmaceutical regulations. We rose to the challenge brilliantly! Today EPC is able to produce a gel of medical quality. There are already plans to make full use of our specialised equipment. It only remains to hope that a healthy demand for this type of product continues! •



EPC in the cinema

For several years EPC has regularly been approached by special effects companies looking for explosives and/or expertise (setting up, advice, CPT training for pyrotechnics) for big-spectacle films. Amongst others, there was the scene of a meteorite crashing into the earth in Stardust, a monument crashing into the sea in Clash of the Titans, the destruction of a building in Captain America and more recently a whole series of explosions on the beaches of Dunkirk for Christopher Nolan's latest film. •



EPC helps make the gas and petroleum industries safer

No-one will be surprised to hear that EPC supplies explosives to the largest petroleum operators throughout the world. But did you know that we also take charge of waste products from these explosives?

AN ESSENTIAL SUPPORT SERVICE

Everything is centred on the COMAH UK classified site at Bramble Island near Harwich, England, which is the equivalent of the Seveso site in France. There, for

12 years now, EPC has carried out the destruction of explosives waste returned by our clients in the petroleum industry (in particular, products past their expiry date). Detonating cords, hollow perforation charges and other 'undesirables' are regularly offloaded on to the island. Our teams there have developed a unique system to carry out the total and perfectly controlled destruction of all this hazardous waste, even in large quantities. Need to eliminate with complete safety eight kilometres of detonating cord

Eliminating explosives and hazardous waste, or the art of transforming a challenge into an opportunity.

and 5,000 charges in one day? That's a routine matter! But there are also daily surprises, for instance there was the client in 2005 who asked us to stock two containers nicknamed the 'baskets'.

In each basket there were 41 'loaded guns' weighing 150 kilos, charges used to create hydraulic fractures during the extraction of gas and petroleum. A special solution was found by EPC when faced with the challenge of handling and risk management. •



→ A 'basket' filled with explosives charges, nine tonnes in weight and nine metres long.



Working the land, EPC style

Our UK subsidiary has two sites producing explosives. For obvious security reasons each site is situated well away from habitation. For many years this land has been used to the benefit of the population.

Altogether, EPC-UK owns 600 hectares of farming land consisting of 400 hectares at Great Oakley Farm on Bramble Island, Essex and the remaining 200 hectares being farmed at Townend Farm in Alfreton. Much of this land is cultivated. Since 2016, the farms have been managed jointly by EPC with day-to-day management being carried out by Roger Pile, assisted by his son Jack and two employees – Roger's father also worked on the land at Bramble Island!

WHEAT AND MORE

At the time when you read this, our last flock of sheep will probably have been sold. There will be no more stock rearing - from now on, our agricultural activity will concentrate exclusively on crop production. This involves 290 hectares of wheat, 30 hectares of rape, 30 hectares of barley, 25 hectares of



EPC FRANCE MAKES HAY

Since 2012 a section of the land at our site at Saint-Martin-de-Crau has been included in the official geographical area for the first Appellation d'Origine Contrôlée (Certificate of Controlled Origin) for animal feed products. Highly regarded for its nutritive value, the hay from Crau is cultivated according to a rigorous set of rules on more than 16 hectares around our factory, with an annual yield of 7 to 10 tonnes per hectare. Nearly 130 hectares are also used by a shepherd for grazing his 900 ewes and lambs, which helps in the upkeep of our land in the long term.



→ The human resources and technical services required are provided 100% by EPC.

potatoes and about 122 hectares of pasture which will be reseeded. Wishing to diversify, and also to compensate for fairly stagnant wheat prices, we decided in 2015 to cultivate 35 hectares of Sakura peas. This is the kind of niche market which EPC likes, principally destined for export to the Far East. With the strong growth of this product as a snack food, and in spite of some technical constraints, we have already increased the areas devoted to growing it this year.

OMNIPRESENT NATURE

If calculating correctly, you will have seen that there are still about 63 hectares remaining, out of the 600 owned by EPC. These consist of woodland and land devoted to an activity which is dear to us: the preservation of our environment. This includes the planting of nearly 2,000 trees to help the biodiversity of our landscape; cultivating pollen plants for insects; and creation of bird habitats. These are some of the real steps we are

An agricultural strategy where culture rhymes with future.

taking to assist Mother Nature.

LOCAL ROOTS

Townend Farm in Alfreton also cultivates good relations with the local community, notably the sports

groups. Since 1926 they have been hosts to South Normanton Athletics Football Club, which recently won an award for the high quality of its pitch. Six bowls teams and a boxing school also share the ground. EPC's agricultural activity is clearly diversifying and has a promising future! •



2 farms
4 seasons
600 hectares of land
63 hectares devoted to biodiversity

The benefits of agriculture in Africa

A pilot operation is about to be launched in Ivory Coast to make more use of EPC land, cultivating it for the benefit of the local population.



The idea for the project came from Olivier Vandenabelle, Director for Africa and the Near East. Why not create a co-operative to cultivate 120 hectares of available land at EPC's Ivory Coast site? The land would be farmed exclusively for the benefit of the village community, the profits generated by the harvests being ploughed back into the village in the form of financing new projects. For EPC Group, the project will have the double advantage of developing a dynamic RSE (Social Responsibility for Businesses) policy, while at the same time avoiding the risk of different buildings being constructed on the site, as could have happened in the past.

DIVERSIFIED AGRICULTURE TWO YEARS ON

Although this niche activity is not intended to generate direct profits for EPC Group, it is necessary to have a business plan as it requires investment. The first stage will be the recruitment, one year from now, of a local agronomy engineer, in order to decide on the type of seeding best suited to the environment. Pepper, casava, cocoa, banana, rubber - the aim is to avoid monoculture. Following this there will be the purchase of equipment, training of local workers for large-scale farming, commercial shares for selling the harvests, and everything required to make the activity viable and transferable to other countries. •



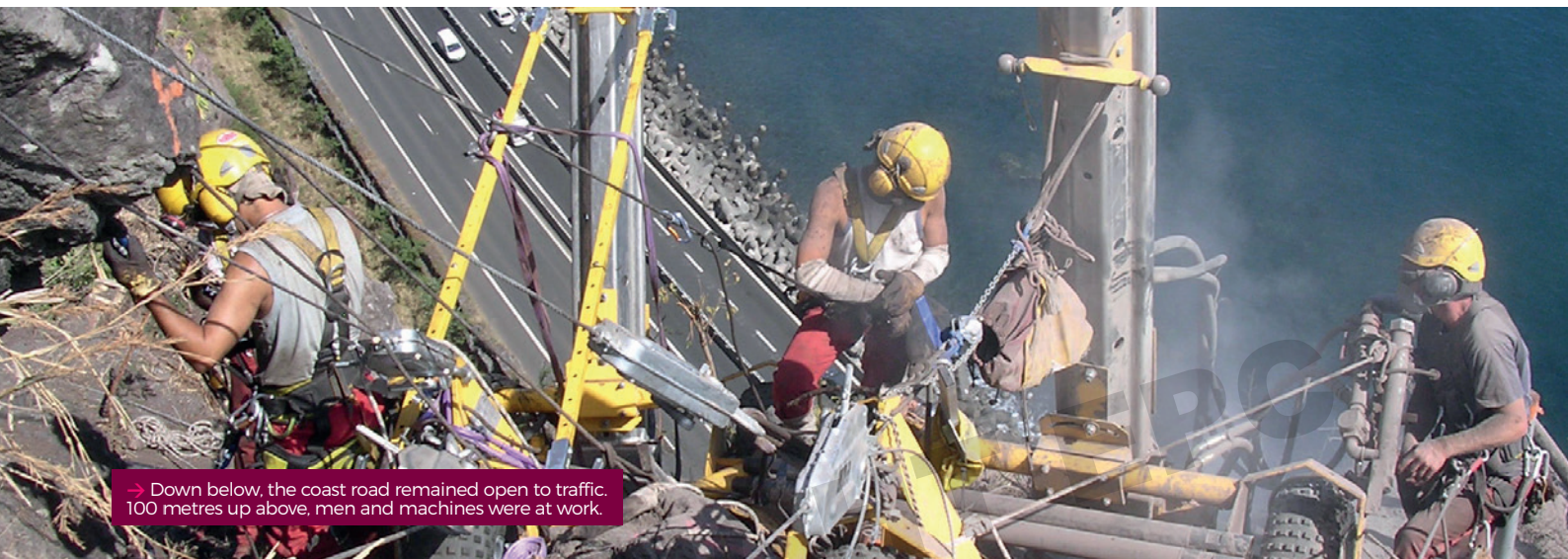


High-wire act to stabilise cliff road

In 2006 and 2007, EPC took part in a world première: the biggest stabilisation of a cliff road ever carried out during traffic circulation. Still today, the event is a landmark. It is a model for further work of this type that has been carried out and for work in the future.



→ Before each explosion, work was required to protect the pathway. Afterwards, spoil had to be removed and protectors put in place.



→ Down below, the coast road remained open to traffic. 100 metres up above, men and machines were at work.

The surroundings on Reunion Island look like paradise, but the construction site was more akin to hell. In order to protect the coast road, a strategic part of the infrastructure, nine kilometres of cliff had to be stabilised on site by the use of explosives and retaining nets. EPC France was selected to carry out this high-wire act on cliff faces over 100 metres in height.

REMOVING ROCK BY EXPLOSIVE

The cliff is made up of rocks from different volcanic periods, which produce several unstable sections of rock, too large to be treated by conventional methods such as reducing or strengthening. After geotechnical analysis, the explosives option was chosen, using Nitram cartridges. While the sizing of the blast promotes good

fragmentation, the sequence of detonation ensures the best volume of blasted rock, in order to keep as much of the pathway open as possible. Altogether, EPC teams treated more than ten outcrops of rock of between 20 and 2,000 cubic metres.

NETS AND GRIDS DELIVERED BY HELICOPTER

As well as placing explosives, EPC's high-wire operators put in place 166 stabilising platforms, the equivalent of 80 football pitches, on 50% of the cliff

surface treated along the pathway. Each day, balancing 200 metres above the traffic, dozens of our specialised workers fixed

metal screens in place using helicopters. After just 18 months, they will have secured twice the number reached in the previous 10 years.

A SHARED OBJECTIVE: TO ACHIEVE AS SOON AS POSSIBLE

Started in June 2006, it was imperative for this high-priority site to be completed by mid January 2008 at the latest. A fantastic achievement for EPC who managed to deliver several weeks ahead of schedule (8 November), in spite of the devastation caused by Cyclone Gamede. Huge volumes, complex methods of working, interruptions caused by traffic, as well as a sensitive consideration for the local population and government services, and the ever-present hazards ... our teams had to overcome many challenges. A Fantastic success. •

450,000 m²
of nets and grills
18 months
working
5,000 m³ of rock
treated with explosive
Around **80** explosives operators



→ To facilitate transport of men and movement of equipment, two Lama helicopters were required throughout the operation.



Assets in Store

EPC Group makes use of many storage depots through its subsidiaries and third parties. These depots enable hazardous materials, mainly explosives in bulk or containers, to be stored in utmost safety.

EPC Group carries out storage activities at Saint-Martin-de-Crau, Bramble Island and in nearly all our subsidiaries in Africa. Although the goods stocked are mainly from the community, the French and English sites use depots under Customs control which allows for the tax-exempt storage of non-community products in transit, before their departure from a European port. The storage service of EPC Group includes the location of storage facilities, managing inwards and outwards movement of goods, and safety devices.

PROJECTS IN THE PIPELINE

EPC France is planning to extend its storage activity during the second



→ In Africa, storage services are aimed primarily at petroleum-producing companies.

quarter of 2017. Ongoing work will increase the number of shipping containers from 4 to 24 (16 tonnes maximum per container) and traditional depots (concrete buildings) from 11 to 13, by the addition of a 60-tonne capacity explosives depot and a one-tonne capacity depot for detonators. The total capacity for storage of class 1 products (explosives) will increase from 495 tonnes to 876 tonnes. A plan for bulk storage of ammonium nitrate is also being considered.

Storage requires transport and logistics to ensure performance and safety for the client - and revenue for EPC!



Protection for Coastguards

In December 2013, EPC started a partnership with the UK Coastguard Agency. This is a niche activity based on a complete service to take care of expired or defective pyrotechnic devices.

AVAILABILITY AT ALL TIMES

Distress flares and other smoke-using safety devices available to the public can contribute to the saving of lives. But like all devices with explosive components, they represent a potential danger. Water in the device, a failed ignition or even an expired validity date can render them unstable. The service offered by EPC consists of the collection, storage and destruction of this pyrotechnic waste

Making safe those who ensure our safety - a new slogan for EPC.

in the shortest time and in totally safe conditions. 7 days a week, 24 hours a day, a specialist team travels the coasts to monitor the 18 sites. From the Shetland Isles to Falmouth, already more than 98,000 km have been travelled, with an average of 87 nights annually spent outdoors. EPC has made an online monitoring system available

for Coastguards which enables rapid and targeted interventions. Whether it's a matter of collection by accredited vehicles, or destruction at our secure installations at Bramble Island, EPC always follows the strict regulations in force to carry its activities.

TRAINING FOR EVEN MORE SECURITY

EPC is expanding its service through various training schemes for Coastguards and volunteers in the RNLI network for safety at sea. A one-day session gives the basic training for safe handling. A further half-day session allows previously-trained staff to update their skills. Since mid-July, management teams are also benefitting

from training targeted at the regulatory aspects of explosives and incident management. •

7/7 - 24/24
18 sites
98,000 km travelled
87 nights of intervention



→ Since 2013, EPC has been keeping the Coastguards safe.

PORTRAIT / Philippe Dozolme

Service to the Group

When 42-year old Philippe Dozolme became Director of Marketing of EPC Group at the end of 2015, his previous work had always been linked to the world of explosives. His new function in our company was however a key step in both his career and in our Group marketing strategy.

”

Explosives - a career and a passion.



→ **Philippe Dozolme,**
Group Marketing Director

What was your career before EPC?

I started out in 1997 at the Ministry of Defence. On the sidelines of a detachment in the Sophia Antipolis basin, I met the founder of a start-up business specialising in electronic detonators for the mining sector. He suggested that I join him to develop the activity in North Africa and then Latin America. I learned a lot. The business was bought by BME in 2003. I became Sales and Marketing Director of the detonating branch until 2007, when I started my own consulting business in the explosives and mining sectors. Then EPC Group invited me to fill this new post, I could not turn my back on the challenge.

What are your main tasks?

These can be grouped around three broad areas: Coherence, which consists in harmonising the identity of all the businesses making up EPC Group; visibility, ie our image, our values as a Group towards our clients and the

market environment; and anticipating the market, which is based on market awareness, our competitors, and on lobbying and networking.

What's the link between marketing and explosives?

In the small microcosm which is the explosives market, the EPC brand is well known. Marketing is not therefore dealing with an emerging market but above all coherence in the market. You have to show that EPC is a unified operation, with one international striking force. Our clients, above all our key accounts, must know that all the solutions, the treasured expertise which we offer, are the fruit of one and the same entity: EPC Group, an entity capable of bringing high performance responses to their needs, anywhere in the world.

What excites you about the world of mining?

Basically, the resources of mining, which are found at the core of our everyday lives, in our appliances and our cars ... The challenge of extracting by means of explosives never ceases to amaze me; for me, the career is a passion. I don't see myself working in any other sector. As there is nothing brutal about it. There is firstly a strong safety element, using advanced technology and a high level of expectation in terms of service. We do not sell brute force, but controlled energy. •

CHALLENGES / Innovation

Simulation of a blast hole: a tube signed EPC Innovation

Every day across the world, EPC Group loads several hundred tonnes of pumpable explosives into mines and quarries for its clients. Behind this activity of orchestrated production by the men on the ground, the hidden work of experimentation and research goes on, which is just as precise and essential.

REPLICA OF A BLAST HOLE

In order to better understand the

behaviour of Euroblendex, EPC Innovation built a replica of a mine hole at the Saint-Martin-de-Crau site. Gilles Jauffret, Head of R&D at EPC Innovation explains: 'It consists of a scaffold supporting a 14-metre high transparent tube in which can be loaded up to 120 kg of pumped explosive with a Multiblend vehicle'.

Optimising energy means controlling it and knowing it better.

TOOL FOR THE CONTROL AND OPTIMISATION OF ENERGY

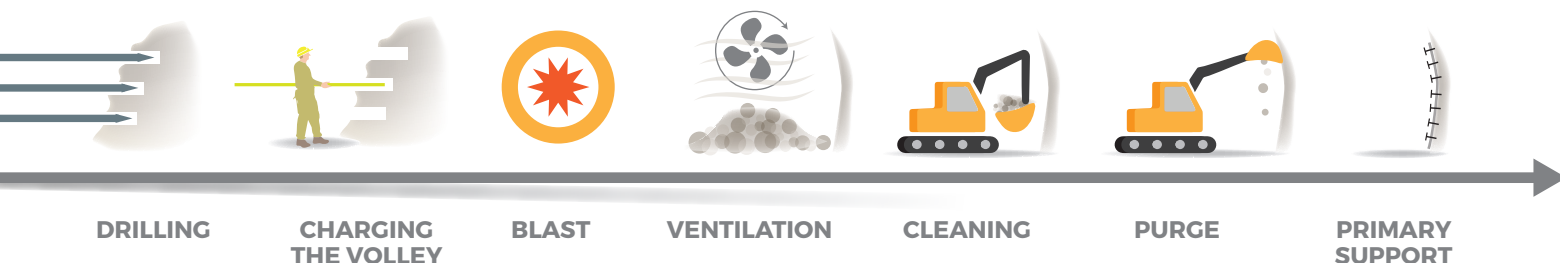
Captors placed along the tube collect and verify the precious data which is used to improve the function of the explosive, either through its formula or the materials used. Gilles explains: 'Thanks to this testing device, we have been able to develop new reactive gassing and new mixers which are used today in the Group's Multiblend vehicles'. The simulation tower certainly gives us a glimpse of new horizons! •



→ The simulation tower of a blast hole (BHST in English): a 14-metre tube filled with captors, capable of being charged with 120 kg of explosive.

The Lyon - Turin Railway: EPC widens the gap

4,5 km of tunnel
900 tonnes of explosives
180 detonators per volley
450 m³ per volley



→ Cycles of production optimized by electronic detonators



→ Before the intervention of the tunneller, the tunnel is opened up by explosives.

With more than 30 km dug and 5,000 tonnes of explosives used, this is not the first tunnel for EPC France. However, the Lyon - Turin Railway is none the less iconic! This European project has just been launched with the building of the ramp from St-Martin-la-Porte. The estimated cost of the 4.5 km section is around 391 million Euros. The main civil constructors involved wanted a reliable partner.

While 57 km of tunnels between Lyon and Turin will be dug by tunneller, a giant machine with a cutting wheel over 11 metres in diameter, Philippe Cappello, Commercial Director of EPC France is pleased that tunnelling for the reconnaissance galleries and ramps will be done with explosives.

A MODEL SITE FOR THE WHOLE PROFESSION

The links between EPC France and the professionals in the field have led them to be proactive about this site, which is as demanding as it is iconic. Philippe Cappello emphasises: 'Whether it's the project manager, the experts involved or the companies themselves, everyone is aware that this is a significant project'. Although blasting is only a small element, there are many opportunities in terms of deploying new technologies.

Innovation under real conditions - sign of a close partnership.

THE ELECTRONIC DETONATOR ALTERNATIVE

Today, work is carried out using non-electric detonators. In agreement with our partners, we chose instead to use Davey Bickford electronic detonators in our test studies. Philippe argues: 'Although this technology is strongly distrusted in a linear subterranean site, it is nevertheless possible to shorten the overall duration of the project by optimising the tunnelling cycle'.

TWO TEST CAMPAIGNS

Half a dozen of our men, led by Mactar Abdallah, our tunnelling expert, were taken to the site to set up the detonators with our explosives which were produced on site by a MORSE or a SPUR, a compact unit for pumping and sensitising bulk emulsion, designed by EPC Innovation. Following the first phase of tests in April-May 2016,

a second phase was launched towards the end of the year. After analysing the results, the client will entrust EPC France with the decision to use either one or other of these solutions to dig a section of the reconnaissance tunnel, a ramp and the dismantling chamber for the tunneller.

TESTS IN REAL CONDITIONS

As well as technologies using electronic detonators and SPUR, there is also the introduction of a completely new matrix in which ammonium nitrate is supplemented with calcium nitrate. This substitution allows, amongst other things, a reduction in the nuisance of gassing after blasts. In spite of these various experiments, please don't consider this as a laboratory site! Philippe Cappello stresses: 'The production rates are real. We must demonstrate our ability to innovate while at the same time satisfying our obligations with regard to results and production times.' These tests confirm EPC as a player in the explosives industry and their determination going forward. Our confidence in these latest technologies is contagious and has already affected many of our partners, including Eiffage, Spie and the Italian companies of the Lyon - Turin railway. •



→ Half a dozen operators from EPC France will attend the LTF site every day until June 2018.

Top Down Way®: Demolition brought under control

Since 2002 EPC Group has been involved with several companies who are past masters in the art of demolition. Buildings, factories, infrastructures ... EPC Demolition has overcome all the challenges. Today, it is embarking on a new venture - nothing less than a world first in an exclusive partnership.



→ Top Down Way® - a modular system which can be adapted to all types of skyscraper.



Up to now, demolition of urban skyscrapers came up against problems linked with the immediate environment of the building. But that could well change with our Italian partner Despe, inventors of the first system in the world for controlled demolition: the Top Down Way®.

INTELLIGENT CONTAINMENT
Top Down Way® is a self-descending lattice steel structure fixed to the four faces of the top of the building. Totally isolated, this containment system encloses all the materials and effects produced by the dismantling of the facades and their demolition. Rubble and other waste is discharged through

elevator shafts. Dust, noise and vibrations are all contained inside the structure, which descends automatically to each level as it is being demolished.

CONTROLLED EFFICIENCY
Working from sheltered walkways, EPC Demolition teams will be able to concentrate on dismantling the facades, demolishing floors and evacuating rubble. All maintenance matters are taken care of by Despe. From assembly and dismantling of the structure to movement controls and safety systems - everything is under the control of the Italian manufacturer. Quick, reliable and with a reduced impact on the environment, the Top Down Way® offers EPC Demolition an opportunity to make a difference - once again. •

| | DEMOLITION WITH TOP DOWN WAY® | DEMOLITION WITH TRADITIONAL SCAFFOLDING |
|-----------------|-------------------------------|---|
| ASSEMBLY TIME | 20 DAYS | 3 MONTHS |
| DEMOLITION TIME | 4 MONTHS | 6 MONTHS |

→ Example of a 25-storey skyscraper (1,000m²)

CHALLENGES / Environment

Mine blasting under the microscope

With EPC Metrics, quarry operators have a new tracking service for mine blasting. A complete online service which can be used by a team of experts for optimum control.

Mine blasts produce vibrations and aerial overpressure. These are unavoidable, but from now on it will be possible to monitor them very precisely in order to adjust the blast and thus reduce the impact on the environment. EPC Metrics' measuring stations are in the form of a watertight box containing a seismometer and modem. When used in an isolated area, the system can be self powered by means of an optional solar panel.

EPC Metrics, a mine of information to optimise quarry blasting.

DATA COLLECTION IN REAL TIME

EPC Metrics' measuring stations carry out automatic recordings and immediate transmission of data which is collected by means of a secure control platform accessible online. The results are available at any time and can be used to configure

alerts which the person in charge of monitoring will receive by email or SMS.

A TOOL ... IN THE HANDS OF THE EXPERTS

EPC Metrics' captors are installed at sensitive points in the operating area, and make up a network of highly detailed measurements appearing in the form of tables, graphs and interactive maps.

A veritable mine of information which EPC engineers will be able to make best use of. Armed with this precious data, they will be able to assist the operator in formulating one or more propagation laws which are specific to the site, and thus calculate initiation sequences which minimise the environmental nuisance of the blasts. •



→ Presentation by EPC Metrics in Hillhead Quarry Meeting Room, 2016.



→ All the details of the blast recorded by the measuring station are accessible in real time on a secure platform.

CHALLENGES / Safety

Safety takes front of stage

If safety is priceless, it can nevertheless bring its rewards. EPC Group has benefited from the Dublin agreement of May 2016, one of the year's highlights, in rewarding each other's best practices through its Safety Awards, which have now become a traditional event.

DIRECT SAFETY ON SITE

The Safety Awards recognise staff of the Group who have set up a Safety Initiative.

Three criteria are taken into account by the jury for each zone: the initiative must be operational and readily transferable; it must be linked to equipment, a method or a behaviour; and of course it must have a significant effect on safety.

The second Annual Safety Awards - already a tradition.

SIMPLICITY REWARDED

The three prize winners of the second Annual Safety Awards were: Jimmy O'Connor for the Atlantic zone; Pascal Renault for the Continental zone; Mickael de Oliveira for Africa and the Middle East. Each of the prize winners thought up a simple, pragmatic idea

which could be fully implemented in the daily routine. For example, a self-locking metallic ring to fix on to nuts to prevent the loss of a wheel; a transparent removable cover which can be adapted to all types of hopper; a lightweight collection bin for cuttings. Many other initiatives were presented to the panel. And that's where the real reward is found - the value which is offered to the whole Group. At EPC, safety is really shared by all! •



→ To prevent the loss of a wheel, **Johnny O'Connor's 'safety pin'** used on Kemek vehicles in Ireland.

→ **Pascal Renault's sliding Plexiglas cover** reduces aluminium dust dispersion when loading a hopper at the ANFO workshop at Saint-Martin-de-Crau.

→ When using the lower section of a GRV in the Santgaredi mine, **Mickael de Oliveira designed a 3 kg collection bin for cuttings** ... as opposed to the previous 35 kg bin. Ways of making life easier for the operators!



→ Bravo to our three Safety Maestros and to all the other participants!



NEWS / Acquisition

EPC Group now has a presence in the Canadian market



Since the 19th of August EPC Group has held 100% of the shares of Nordex Explosives Ltd, a Canadian enterprise specialising in the manufacture and distribution of industrial explosives. Nordex distributes and implements its products in the mining sector, quarries and public works sites. The acquisition of this new enterprise based in the province of Ontario proves that EPC Group wishes to consolidate its position in the North American market. As Olivier Obst, our Chairman states: 'The acquisition of Nordex is based on strong synergies. It allows us to reinforce our presence in North America while giving Nordex an extended range of technologies and services enabling it to develop its activities in the Canadian market'.



NEWS / Sharing

EPC broadens its horizons in Dublin



There were record attendance figures for the sixth Annual Convention which welcomed nearly 100 directors, supervisors and managers in Dublin on 26 - 27 May this year. Apart from the excellent organisation and hospitality of our English and Irish friends, this event was marked by a desire to think in a different way. Safety, innovation, demolition, marketing, updating the zones... these topics enabled a

wide exchange of ideas regarding the future of our business and of the sector. A veritable ritual within EPC Group, the Convention was also a valuable occasion for creating links in an appropriate environment. We are already looking forward to next year's seventh Annual Convention ...



PORTRAIT / Marième Sow

Getting in touch with the feminine side

Marième has occupied the post of Head of Human Resources for the Sub-Sahara Africa zone since 1 February 2016. Further recognition for this young woman aged 32 from Guinea, who has to find a balance between achieving her personal goals and working for the collective good.

How did you come to EPC?

I was an accountant by training. You should know that in Guinea very few young working people have a steady job. There is a lot of insecurity. Nitrokémine had a good reputation for treating its staff well - so I decided to try my chance and sent in a spontaneous application ... I was taken on in their Administration department! That was in 2005. Eight years later, I was invited to take over as Head of Human Resources at Nitrokémine and today this post covers the whole of EPC Group's Africa zone.

Tell me about Human Resources in the explosives industry ...

Safety is paramount. People will always

be selected for promotion if they are attentive to safety and behave rigorously with regard to safety at work. That counts as much if not more than training and experience.

What are your main tasks?

The HR function has changed a lot. It now goes well beyond administration of staff. Keeping the social climate in good shape, improving the health of employees and their families, respect for the collective conventions and regulation in general, relations between managers and Trade Union leaders ... all that comes into my daily routine.

An example of the issues you face on a daily basis ...

For instance, the battle to improve the health of people who prefer to believe in the traditional pharmacopoeia rather than modern medicine. Knowing also that modern medicine has to be applied correctly in spite of the lack of existing infrastructure.

How do you find, working as a woman in the midst of all these men?

I want to set an example to encourage the developments that I saw when I arrived here. Already women were in strategic positions like Head of Fuel Department, Director of Implantation for mine blasting ...

What did you appreciate the most?

I greatly benefited from the support of my line management. I owe my present position to the efforts made regarding professional training and internal promotion. I would not have imagined that when I came here, as it is not usual in West Africa.

”

A management career where figures are concerned with human lives.



→ **Marième Sow**,
Head of Human Resources, Africa Zone

BUSINESS / Export

Technological Transfer and Asian Opportunities

On 13 April 2016 we signed on behalf of our subsidiary EPC Innovation a technology transfer contract worth more than 6.5 million Euros with a Vietnamese government body. The agreement is for the construction of a factory - but not just that, obviously.

Stéphan Mencacci, Joint Managing Director of EPC Innovation, recently returned from Vietnam, but he knows that from now on he will be travelling regularly to this new destination. 'We launched

the project at the beginning of July to build a factory for producing bulk and cartridged emulsions, using a Multiblend vehicle and a Research and Development Laboratory for testing', states the man in charge of seeing the project through. As usual, EPC focussed on providing optimum service. In addition to supplying and implementing equipment and procedures, it will provide engineering

The Vietnamese government was looking for the best guarantees in terms of safety and quality.

services, support services in the areas of safety and construction, and training for operators. The project is estimated to last two years.

ASIA OPENS ITS DOORS

Following on from the establishment of our New Caledonia site in 2015, this contract marks the second phase in the Group's strategy to develop its South-east Asia/Oceania zone. This is great news, bearing in mind that client Z21, a government body, is a major player in the Vietnamese market which is today closed to foreign manufacturers. For Stéphan Mencacci, 'this contract shows

**Production capacity
8 tonnes of bulk
emulsion per hour
1 - 3 tonnes of
cartridged emulsion per hour**



→ On 13 April 2016 an agreement was signed to build EPC's first explosives factory in Vietnam.

a recognition of the excellence of the technologies offered by the Group'. It also supplies a new source of income for the Group's R&D activities, an important factor in our commercial development.' •

Scandinavia: EPC hasn't lost its bearings

In Sweden and Norway, where we have had a presence since the acquisition of our two subsidiaries in 2006, it isn't just the climatic conditions which are challenging. There is also the competition. We have to wear extra clothing to cope with the cold; and we have to focus on the quality of our services to cope with the competition.

EPC's Scandinavian market is centred mainly on Sweden, where our subsidiary EPC Sverige is market leader in quarries and civil engineering in addition to its mining activity. There is strong pressure from competition coming from six big rival companies.

BULK REIGNS SUPREME

Ferdinand Bodénan, EPC Sverige's Financial Director, states: 'In Sweden it's generally a matter of large volumes using between 10 and 20 tonnes of explosives per blast'. The reason for this is mainly economic: large blasts are more profitable and the geographical area of the country is such that it is more cost effective to

A rising market demanding the highest quality of product and service.

open a quarry close to a project rather than use lorries to transport materials across long distances. In addition, the low density of population means there are fewer problems regarding vibration and environmental issues. As a result, bulk represents 90% of the volume sold by EPC Sverige.

RADIATING THROUGHOUT THE COUNTRY

EPC uses nine depots to cope with more than 10,000 tonnes of matrix produced annually. Seven of the depots are equipped with Multiblend stations which daily supply around ten XXL size lorries. The Swedish



→ EPC Sverige - three certificates for quality in a demanding market.

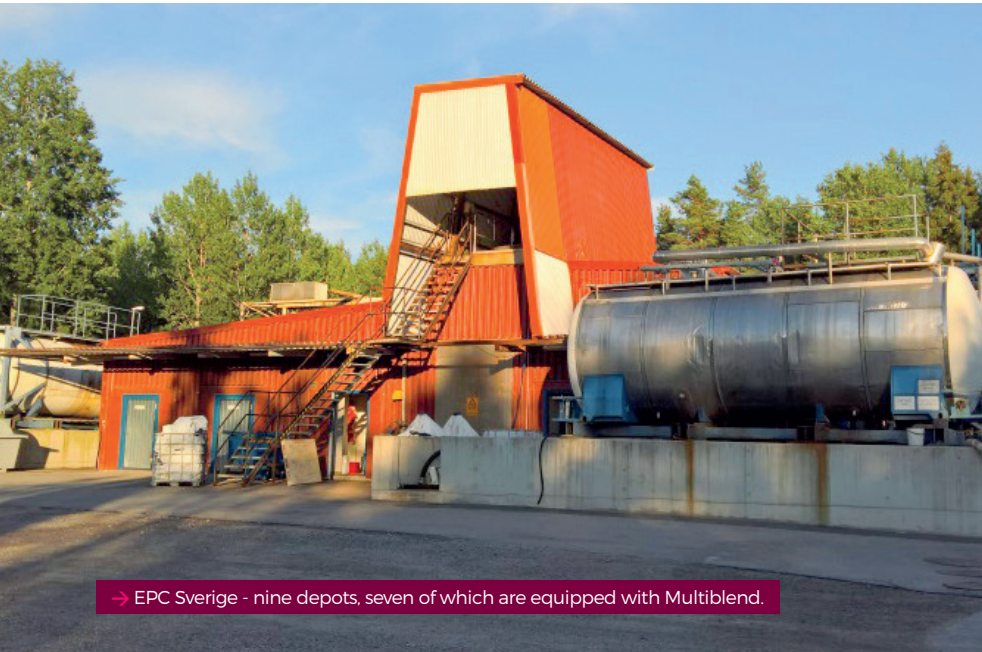


EPC Norge

Our Norwegian subsidiary faces a market that is even more challenging. It draws up a developmental strategy tailored for each individual project. For every new project it draws on the logistical, technical and human force of its neighbour EPC Sverige.



→ EPC Sverige's imposing Multiblend lorries drive all over Sweden.



→ EPC Sverige - nine depots, seven of which are equipped with Multiblend.



12,000 tonnes
OF MATRIX PER YEAR



15 lorries
11 SWEDEN
AND 4 NORWAY



Between 1,000 and 1,500 tonnes
OF EXPLOSIVES
PER LORRY PER YEAR



25 a turnover of
million Euros
20 SWEDISH
AND
5 NORWEGIAN



Between 10 and 20 tonnes
OF EXPLOSIVES
PER BLAST



MORE THAN 50 staff
IN SCANDINAVIA

subsidiary is manned by a total of 45 staff. This investment in equipment and manpower is very worthwhile because it gives EPC a big competitive advantage in its ability to respond rapidly throughout Sweden.

SERVICE, ALWAYS SERVICE

In Scandinavia, as in the other areas served by EPC Group, what sets us apart is our capacity to provide complementary engineering services. EPC's Financial Director stresses: 'The intrinsic quality of our products is excellent, but most of the main players in the market also provide an excellent product. The difference is in the service we offer. To respond to the needs of the client, to anticipate their needs, that is to guarantee the highest level of safety and cost effectiveness in our blast.' And it also assures us of a comfortable turnover of nearly 20 million Euros! •

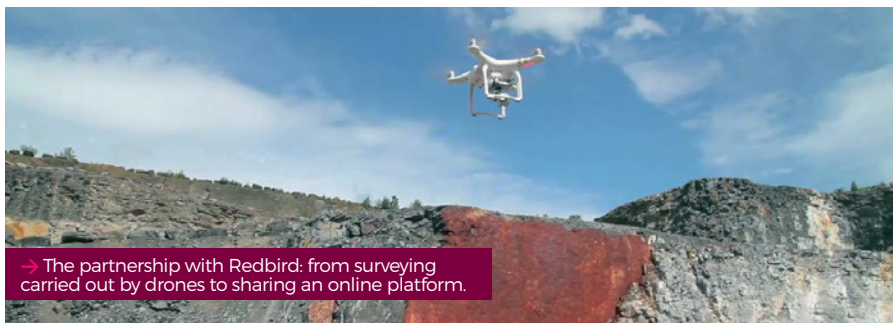
Norway

Sweden



With Redbird, EPC gives wings to its clients

The strange radio-controlled flying contraptions called drones have recently played a part in a highly strategic partnership between EPC and the start-up company Redbird.



→ The partnership with Redbird: from surveying carried out by drones to sharing an online platform.

Innovation and service - these are two levers which EPC has always made use of to bring about growth. Together they lead to many new opportunities. The new partnership with Redbird is a good illustration of their compatability. On the one hand, a start-up capable of bringing about rapid development; on the other hand, an experienced group keen to provide the best solutions to the challenges of its clients.

FROM A DISTANCE YOU GET A BETTER PICTURE

Using the drone, EPC carries out surveys of the site before, during and after the mine blast. This is a whole new way of quantifying and qualifying the blasted rock - thereby optimising costs. Julien Janssen, Technical Director of EPC France states: 'We will be able to see the location of faults

A new generation of customer service.

and veins in the rock, and thus improve the positioning of the blasts.' This can be taken further by producing 3D modelling of the blasted rock, which will make it possible to measure the spread, wave effect and even the granulometry of the upper layer.

QUALITY OF SERVICE - A NOTCH ABOVE THE REST

Pascal Lacourie, Managing Director of EPC France, sees in this partnership with Redbird a new opportunity to stand out from the competition. 'The surveys carried out by drones will be accompanied by the application of EPC Premium, which will be accessible online on a shared platform. These tools will create a new generation of customer service.' A service that will enable us to progress faster together - and achieve new heights. •



For EPC, it's 'Peru here we come!'



First steps in a whole new market: South America

The site was established as part of the partnership with IESA, a large local business specialising in drilling and blasting activities and civil engineering. EPC Servicios Peru, which will be our name in Peru, will bring SPUR, matrix and a small team to train IESA staff, who have long-proven skills and experience. We will of course focus on our associated services to give the best value to this partnership in a mining market that is in the full flush of its development. •

SAFEX Congress: everyone united around safety



Every three years since 1954, professionals from the world of explosives have met to exchange experiences in matters of safety. At the SAFEX congress, it is no longer a question of competition but prevention and humility in the face of the risks of the trade.

After Warsaw in 2014, this time it will be the turn of Helsinki in May 2017 to welcome representatives from fifty nationalities who will meet together at the SAFEX congress. As a major player in the sector and an active member of SAFEX, EPC Group will send at least ten delegates from our subsidiaries, as well as Thierry Rousse, our Director for Safety, Security and the Environment, who will be presenting. Thierry Rousse states, 'The unique thing about the SAFEX congress is that everyone is equal and everyone takes part in order to exhibit, not their successes, but their errors in matters of safety, so that everyone can learn from them.'

TWO DAYS TO LEARN AND HELP EACH OTHER

The whole SAFEX community will gather at this nineteenth congress, with

A very special event, motivated by the wish to help each other and share our experiences.

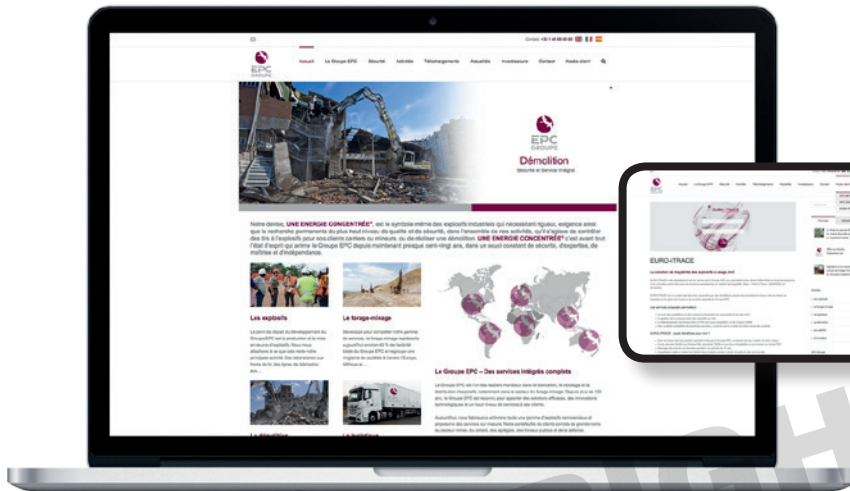
an Open day (open to third parties) and a Closed Day (for members only). Transporting hazardous materials by road, safety at work, sensitive substances, emergency and crisis management, incidents on burning grounds, waste management, explosions of emulsion pumps ... several sessions of exchanges will take place over the two days, where we will all have much to learn'. •



→ Helsinki will host the 19th congress of this global meeting of the profession.

Dot com, a point of convergence

With a fresh new website, EPC Group is embarking on another stage in affirming its position as a major player in the international market. In form as well as in substance, this new interface aims to be a faithful reflection of everything that EPC represents.



→ Clear appearance, visual coherence, comprehensive information: EPC Group's new website.

Communicating via the internet is nothing new for EPC. Its first website was set up about five years ago. Once the first steps were made, the impulse for the second stage came from Olivier Obst himself. He wanted a site that was very visual, translated into four languages and above all a dynamic site, updated automatically and on a regular basis.

Our English friends were the first to be involved, and were tasked by the Group Marketing management to establish a

A complete and realistic website, where clients, partners and shareholders meet.

new, streamlined graphic identity, which everyone else quickly followed. The contents were rearranged, enhanced,

new captions appeared. The site is comprehensive, attractive, informative ... regardless of the location or nationality of the visitor.

THE ART OF COMMUNICATION

Whether dealing with the content itself or the process of updating it, EPC Group's new website follows a rigorous process. An example is the Investors' section.



→ YouTube is also used to demonstrate the Group's expertise.

Philippe Dozolme, Marketing Director, explains: 'Like any company quoted on the Stock Exchange, EPC has to communicate certain legal information within strict deadlines'. Content is critical and has to be backed up by the financial director. 'The remaining content is made up in partnership with my department, a collection point for information', Philippe adds. After validation, uploading is carried out by a designated person within each zone, previously trained in the use of the interface to administer the site.

PRIVILEGED CUSTOMER ACCESS TO CERTAIN AREAS

EPC Group's new website is also a way of extending customer services. A virtual window into our high tech departments, the Customer Access tab allows direct access to the secure platforms of EPC Metrics, EPC-Cardinal and Euro-ITrace, complete with tracking information and information on current projects. Clients, shareholders, partners ... with just a few clicks our public can find their way on www.epcgroupe.com, which acts as a point of convergence.

LOCAL VARIATIONS

The Group nature of the new corporate website includes variations at local level. EPC Morocco, Belgium, Spain, Italy, also subsidiaries such as OCCAMAT... about fifteen websites have been absorbed into EPC's new dimension, while maintaining their local variations. Philippe is happy to say that the website represents a 'work of harmonisation that evolved naturally.'



Case study: illustrating our expertise

In addition to the PDF version of this magazine, the website will contain presentations from the different sites in four languages, highlighting the expertise of the Group. Explosives, drilling and blasting, demolition, logistics ... real-life examples setting out issues, solutions and key figures will demonstrate what EPC offers its clients; because on the web as elsewhere, only a discourse anchored in the real world will succeed.





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