Bill Hagenbuch worked over 40 years for Hooven & Allison (H/A) until retirement. He saw and managed much of the switch to synthetics. This story is about the rope industry in and around Xenia, Ohio. Bill’s family has been involved with H/A since 1869. Ropecord News was given permission to use excerpts from presentations given by Mr. Hagenbuch.

The Industrial Revolution, you may remember from your history classes, started with textiles. Because cordage is the simplest of all textiles, rope manufacture was revolutionized first – before woven products.

For the rope industry, the climax came soon after the Civil War. Steam powered big house machinery, and the switch from locally grown hemp to imported Manila hemp. In the early 1800’s there were 6 rope factories in Xenia. National Cordage Trust acquired all of the Xenia rope companies and many others, except H/A. Actually the Sherman Act, passed in 1890 to curb the concentration of power, cut its teeth on breaking up the National Cordage Trust – that huge dangerous monopoly of rope makers.

Why were there so many rope factories in Xenia, Miami Valley and further south into Kentucky? Three factors: 1. Bountiful local supply of raw material – hemp. 2. A huge market for the product – especially farm twines (first binder twine, later baler twine). 3. People who knew how to convert the raw material to useful product and how to finance the job. They included G Hooven, M C Allison, R A Kelly, and J H Harbine (my great uncle). Hemp grew beautifully in this area, but even better in Kentucky.

From Biblical times, hemp was the fiber for rope (and many fabrics where strength was essential). It is native to Asia and grew well throughout Europe. It’s rumored that the Pilgrims brought hemp to Plymouth Rock – presumably for making rope.

After the Civil War and up until WWII, the locally grown hemp was slowly replaced by fibers imported from tropical countries. Sisal & Manila were stronger and lasted longer, but more expensive. Imports also required more capital investment – as did the new rope making machinery. These factors favored the corporate enterprises such as H/A and the National Cordage Trust.

I’d like to show how Ben Franklin used his scientific appreciation of rope (or thread) to promote union among the colonies. This is a quote from his 1747 “Plain Truth” pamphlet: “At present we are like separate filaments of flax before the thread is formed, without strength because without connection. But union would make us strong.”

A very basic technical question: How do you make a rope if you have only a bunch of short fibers? You know, you twist them together. The twisting is a very basic (fundamental) concept – a way of grouping small elements (fibers) into a larger more useful form – without any glue or cement or anything else. But if you want a long rope and the fibers are short – there is a problem. Someone had to invent a way.

The invention of rope involved 3 steps:

1. Twist the fibers together into a long yarn. In Ben Franklin’s words, this twisting would assure the “connection . . . the union (which) would make us strong.”
2. Twist two or more yarns together to make a long strand.
3. Twist three strands together to make a standard rope. A stable structure, flexible (easily tied and untied) and abrasion resistant.

You do not need complicated machines to twist fibers. In fact, you do not need any machine at all – as I learned on a visit to the Maori museum in New Zealand. Here a Maori native twists two yarns simultaneously by rolling them on his leg with his left hand while twisting the two together with his right hand.

So you do not need any tools to make rope. Separate the fibers from leafy plants and simple twisting – all without tools- leads me to the conclusion that cordage was Mans first manufactured product.

Following the Civil War the import of Sisal and Manila and the development of fancy new machinery turned rope making from almost a handcraft to modern factory. Yes it was still called a “rope walk” – even though walking was no longer required in the new factory. Previously, to make a yard of rope required walking (and walking backward) one yard for each yarn in that rope. So to make a 1 inch diameter rope the

Continued on next page...
length of a football field required walking several miles – backward.

Sisal and Manila hemp are different from true hemp (Cannabis) – they are leaf fibers, aka hard fibers. Manila hemp is in no way related to true hemp. It got the name only because Capt. Cook was no botanist. When Capt. Cook got to Manila (in the Philippine Islands), he found that this was the fiber the natives used to make rope. In his experience, all rope was made from hemp, so this was simply the special type of hemp used in Manila – or so the story goes.

Actually, the plant is called Abaca, and is a cousin to the banana, but the fruit is small and unappetizing. The fiber is the strongest of the natural fibers. So for many years (until the 1950’s when synthetics took over) Manila ropes were the top of the line – literally!

There is more to the story, but it will have to wait for another time…

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**MARLOW ROPES CONTINUES SUPPORT OF THE OFFSHORE CHALLENGES SAILING TEAM**

Marlow Ropes Ltd are to continue their ongoing support of the Offshore Challenges Sailing Team that includes Ellen MacArthur, the current world record holder for the fastest, non-stop solo circumnavigation of the planet, and Nick Moloney. As the exclusive rope supplier to the successful team, it extends their relationship that began in 1998 with MacArthur’s first solo transatlantic race in the Route du Rhum race from St Malo to Guadeloupe in which she finished first in the 50 ft. monohull class.

Over the last eight years they have provided rope to the team’s campaigns including the IMOCA 60 programs of both MacArthur and Moloney who competed in the solo, non-stop round the world Vendee Globe race in 2000 (MacArthur/Kingfisher) and 2004 (Moloney/Skandia), as well as MacArthurs Jules Verne record attempt on Kingfisher 2 with 13 crew and her successful solo round the world records attempt onboard the 75 ft. trimaran B&Q.

Paul Honess, Marketing & Yachting Sales Manager, said: “Our relationship with the Offshore Challenges Team is a successful collaboration for both parties as we continue our objective to provide the best quality rope to the sport of sailing.

We work closely with the team in research and development of new products that has led to the production of the successful MGP range of performance products and the “D2 Racing” product in particular. We already have new fibers that we are planning to explore with the team, including the new grade of Dyneema (SK78).”

Ellen MacArthur, skipper of the trimaran B&Q, commented; “We have always set out to have long-term relationships with our partners and Marlow Ropes has been with us since the beginning, so it’s fantastic they are continuing this long-standing support to the team.”

Marlow are innovators in the field of rope technology, continually striving to develop and utilize the latest fibers and techniques in the design and manufacture of high quality ropes.

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**2006 OFFSHORE TECHNOLOGY CONFERENCE (OTC)**

OTC 2006, scheduled for May 1-4, 2006 at the Reliant Center in Houston, Texas, will offer you more this year than ever before.

The OTC Awards Luncheon will feature an address by Guilherme de Oliveira Estrella, managing director for exploration and production at Petrobras, on “New Challenges for the Petroleum Industry.”

Three industry breakfasts sponsored by the US Department of Commerce will focus on key emerging offshore areas – India, Russia and Australia.

OTC exhibit space expands with two state-of-the-art, climate controlled pavilions that provide over 50,000 square feet of new exhibit space and showcase approximately 250 exhibiting companies.

OTC 2006 offers a new program, The Next Wave, to provide young professionals with career insights on leadership, career development, involvement in industry associations and entrepreneurial skills.

Network with colleagues and have fun watching a game of Major League Baseball at OTC Night at the Ballpark. The 2005 National League Champion Houston Astros host the St. Louis Cardinals on May 3rd.

For this and much more, visit http://www.otcnet.org/2006.
GOVI STARTS I-COATS, N.V.,
A NEW DISTRIBUTION COMPANY

In view of GOVI’s continuously expanding activity in the creation of tailor-made solutions in terms of coatings for the rope and netting industry, we are proud to announce the start of a new distribution company.

I-Coats N.V. Innovative Coating Solutions, located in Belgium, was founded on January 9, 2006 as a spin-off from GOVI N.V.’s successful rope and netting business unit. The main driver for this initiative has been their continuous willingness to offer to the actual market an ever-improving and more focused tailor-made service.

The rope, netting and cable industry has indeed shown over the last years a keen interest in specialized, tailor-made coatings to meet its most important participants’ individual needs. I-Coats N.V. commits to focus exclusively on those needs and will provide the worldwide market with the solutions it has been looking for.

This reflects in I-Coats N.V.’s mission statement “The continuous innovation in performances of ropes, nets and cables, by developing and tailoring coatings or other material applications.”

Relying on GOVI’s experience and development, I-Coats will entrust it with the continued and improved manufacturing of both existing and new products in the field of coatings. In close connection and permanent discussion with its customers as partners, I-Coats will be able to further develop and improve existing coatings used on synthetic fibers and yarns as well as on steel-wire cables, for application in the leisure, global industry, fishing and heavy rope sectors.

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Who Makes What? Who Does What?
In Cordage, Rope Twine & Netting, check the Cordage Institute Web Site - www.ropecord.com
DIVERS WORK THE GULF FLOOR TO UNDO WHAT HURRICANES DID

Aboard M.S.V. Botanica, in the Gulf of Mexico off Louisiana, Feb. 22 – Gliding gracefully half a mile below sea level, two robotic submarines are part of an unusual repair job intended to restore much-needed oil resources to the nation’s strained energy network. After two months spent digging and cutting and shuffling heavy equipment by remote control, their job should be done by early March.

But the huge task of fixing the country’s most important energy hub is far from over. Six months after Hurricane Katrina battered the Gulf with 175-mile-an-hour winds and waves higher than eight-story buildings, more than a quarter of the region’s oil output is still down.

The shortages, amounting to 6 percent of the country’s domestic production, have worsened a global picture of razor-thin margins of supply, playing a central part in keeping oil prices around $60 a barrel.

Hurricanes Katrina and Rita destroyed or damaged 167 offshore platforms and 183 pipelines, shut down production for weeks and pushed prices to their highest levels since the fall of the Shah of Iran led to the oil shock of the early 1980’s. Nineteen movable well-drilling rigs snapped from their moorings and drifted, some as far as 60 miles.

By contrast, Hurricane Ivan, rated as one of the most severe storms in the Gulf when it struck in 2004, destroyed just 7 platforms in shallow waters and damaged another 24 structures and 102 pipelines.

“The storms cut a huge swath over the landscape,” said Allen J. Verret, the president of the Offshore Operators Committee, an industry group. “We were still recovering from Hurricane Ivan when the terrible sisters came.” Now, he said, “we are all concerned by how long it takes to bring it all back up again.”

Few will openly say so, but oil companies are racing the clock. In less than four months, the next hurricane season kicks off.

Today in the Gulf’s offshore region, 362,000 barrels of oil a day, out of a total 1.5 million barrels, remain shut off, as well as 15 percent of the region’s natural gas production, or 1.5 billion cubic feet a day.

Shell, the top oil producer in the Gulf, estimated the cost at $250 million to $300 million. The company said that three-quarters of its total capacity of 450,000 barrels a day had been returned to production.

But one of the biggest structures, Mars, which produced about 140,000 barrels a day before Hurricane Katrina, is not expected to restart until the second half of 2006. The platform was badly damaged when a drilling rig tumbled over in the storm, shattering equipment, living quarters and the intricate network of electronics and pipes that girdle all platforms. Also, the pair of pipelines that take Mars’ oil and natural gas to shore were badly damaged.

With no realistic option of towing the platform back to a shipyard, repairs had to be done at sea. Nearly 500 workers have been living in a floating hotel flanking the platform, linked by a pontoon while they complete the tedious job of refitting and rewiring the structure.

The industry was already facing a shortage of ships and qualified crews, marine technicians and offshore experts before the hurricanes. Divers to inspect the platforms are especially in demand. Special teams had to be brought from Canada.

The work is especially slow when it comes to finding and fixing pipelines in the Gulf’s shallows, where water is so opaque that divers have to blindly feel the ground with their hands until they find a missing bit of pipeline.

In the weeks after the storm, some oil companies used small tankers and barges to take oil to shore, or redirected flows through undamaged pipelines. Even as they repair the damage, most companies continue to explore the depths of the Gulf for new reserves.

“They have every incentive to get things restarted,” said Chris C. Oynes, the head of the Gulf of Mexico regional office of the Mineral Management Service of the Interior Department.

At sea about 45 minutes by helicopter from Port Fourchon, the 318-foot-long Botanica – which normally does duty as an icebreaker – is about the last thing you would expect to find in the semitropical Gulf waters. While Shell mustered an armada of 24 ships to inspect its equipment in the Gulf, it needed a special type of ship, able to stay precisely above a particular spot for weeks on end, while minisubmarines replaced two 85-foot-long sections of pipelines linking Mars to the coast.

“No other vessel was available for the job,” said Mike Coyne, a senior Shell engineer, who oversees the company’s 1,500 miles of pipelines in the Gulf.

On the control deck, the ship’s captain seemed torn about his soon-to-end assignment.

“They would really need us right now in Finland,” said Leif Kampe, the captain of the Botanica, which usually slices through 30-foot-thick ice at this time of year. “But there’s more money to be made here.” And it’s warmer. “It’s nice,” he added, “being here with the Southern guys.”

The Synthetic Advantage...
With today’s advanced fiber technology, synthetic cables can now be made to outperform steel in nearly every regard. These fibers can be used to produce a cable assembly with greatly enhanced characteristics as to lightness, strength, flexibility, fatigue resistance, and corrosion resistance.

Was Not Resolved...
The historical drawbacks of synthetic cable have little to do with the fiber or cable itself, but rather the lack of end fitting, and of process technology. Cables could only be terminated with unwieldy mechanical fittings or hand splices. Both of these methods are hindered with non-repeatable length tolerances and limited adaptability to steel cable hardware and attachments. Furthermore, traditional mechanical fittings develop poor termination efficiency and are very high in cost. Hand splicing has problems with minimum assembly length and long, bulky splice areas. The end product using either method was simply not compelling enough to gain a real advantage.

Until Now:
A practical solution now exists. Applied Fiber has the productive capacity to design and produce high strength synthetic cable assemblies with terminal connections that are versatile, compact and compatible with steel cable hardware. The entire production process is measured, controlled, and documented to ISO 9001 standards to create finished assemblies of unmatched quality and consistency. The technology minimizes or eliminates the historical drawbacks of synthetic cable assemblies.

Challenge us! From robotics to bridges, aerospace to automobiles, Applied Fiber is centered on developing customer specific alternatives to traditional steel cable or chain. We welcome your inquiries.
ULTRA-DEEP WATER DRILLING RIG TO BE BUILT

A U.S. $495 million contract award has been given to Daewoo Shipbuilding to build a semi-submersible ultra-deepwater drilling rig. The rig will have to be fully capable of operating in harsh environments and in water depths up to 10,000 feet. The vessel will include an extensive testing program, 7,000 feet of riser and a full mooring system. Source: SeaDrill Ltd.

BRIDON RETURNS TO OFFSHORE FIBER ROPES

Bridon International Ltd. Reports that it has completed the acquisition of the offshore and commercial marine-related assets of Marlow Ropes. Manufacturing facilities will be at Coatbridge, Scotland, originally owned by Samson Ocean Systems, and Hailsham, England, a Marlow operation.

According to Bridon, the operation will further enhance the company’s product range, enabling them to meet the expanding fiber rope requirements for marine applications. More information at www.Bridon.com. Source: Sea Technology

SUBMERGED OBJECTS CAUSE MOST ACCIDENTS

After reviewing five years of its own claim files, Boat U.S. Marine Insurance lists the most common causes for insurance claims among boat owners.

The top nine claims are: striking submerged objects; sinking; fire and explosion; wind and weather; collisions; grounding; lightning; theft of the boat; and theft of equipment. Both the individual number of claims, as well as insurance claim dollars amounts, were factored in to compile the list.

The list was published in the January 2006 issue of Seaworthy, the damage avoidance newsletter from Boat U.S. Marine Insurance.

DEEPWATER DISCOVERIES IN THE GULF OF MEXICO

Ocean News & Technology has announced nine deepwater discoveries in the Gulf of Mexico. The water depths range from Mississippi Canyon at 2,400 feet to Walker Ridge at 9,576 feet.

SOFT LINE WINCHES

Two new Markey winches have been delivered for installation on 30m x 4475 KW tugs being built by Washburn & Doughty for Crescent Towing and Moran Towing. The new design is built for up to 230 meters of 76mm UHMWPE-type soft line. The winches have a heavy duty levelwind and a 3-speed transmission to provide ratings from 166Tm line pull to 183m/min line speed. Controls are in the wheelhouse.


DSM DYNEEMA FILES PATENT-INFRINGEMENT LAWSUIT AGAINST CHINESE COMPANIES

DSM Dyneema, the inventor of high strength polyethylene (HPPE) fiber, has filed a patent-infringement lawsuit against Chinese companies.

DSM has had the authority to seize merchandise, including fiber, rope and finished articles, exhibited at the Milipol 2005 exhibition.

DSM has taken the action to protect the company from those who unlawfully try to copy the unique fiber technology developed by DSM. It is the company’s policy, according to Christophe Dardel, president of DSM Dyneema, to actively protect their intellectual property rights. Source: International Tug and Salvage

19th ANNUAL TUG & SALVAGE CONVENTION AND EXHIBITION

The 19th International Tug & Salvage Convention and Exhibition will be held on April 24-26, 2006 at the Beurs World Trade Center in Rotterdam. Ropemakers attending are reported to be Samson Rope Technologies, Puget Sound Rope and Bridon/Marlow.

There will be extensive exhibits of winch systems that are now being used for high tech tugs, salvage and ship assist applications. A typical use is dual drum mooring winches designed to handle 230meters of 30mm of Samson’s Quantum-8 mooring line that is designed to replace wire rope.

Source: International Tug and Salvage
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