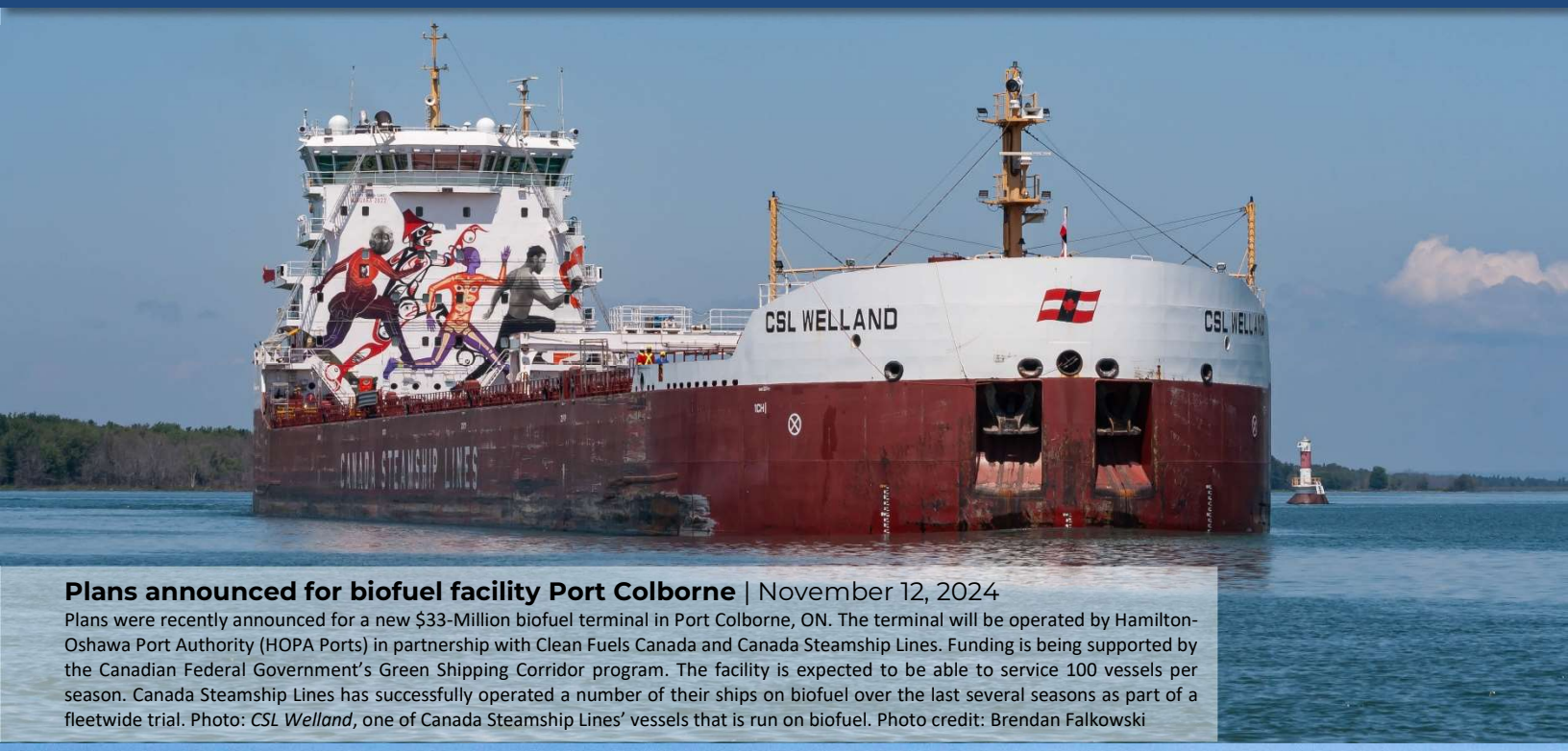
FREIGHTERS

THE GREAT LAKES SHIPPING INDUSTRY PERIODICAL
EDITION #76 – FALL 2024
OFFICIAL NEWSLETTER OF SHIPWATCHER NEWS – EDITED BY BRENDAN FALKOWSKI – WWW.SHIPWATCHER-NEWS.COM

LAKER REPORTS

NEWS AND HAPPENINGS FROM AROUND THE LAKES



Plans announced for biofuel facility Port Colborne | November 12, 2024

Plans were recently announced for a new $33-Million biofuel terminal in Port Colborne, ON. The terminal will be operated by Hamilton-Oshawa Port Authority (HOPA Ports) in partnership with Clean Fuels Canada and Canada Steamship Lines. Funding is being supported by the Canadian Federal Government's Green Shipping Corridor program. The facility is expected to be able to service 100 vessels per season. Canada Steamship Lines has successfully operated a number of their ships on biofuel over the last several seasons as part of a fleetwide trial. Photo: *CSL Welland*, one of Canada Steamship Lines' vessels that is run on biofuel. Photo credit: Brendan Falkowski

***Tim S. Dool* freed after grounding in St. Lawrence** | December 17, 2024

The *Tim S. Dool* ran aground on the St. Lawrence River on November 23, 2024, while downbound with grain. The vessel turned out of the shipping channel and ran aground on a reef near Morrisburg, ON, southwest of Massena, NY. Initial attempts to pull the *Dool* free were unsuccessful. Since she is a gearless bulk carrier a crane and barges had to be brought in to assist in lightering efforts. River traffic was able to continue to travel since the *Dool* was aground outside the shipping channel. She was freed on December 17, and following inspection was able to continue on her voyage. Salvage efforts were completed by the Ocean Group and Doornekamp. Photo: Tugs work to free *Tim S. Dool* from grounding on St. Lawrence River, December 16, 20204. Photo credit: Ron Beaupre

Event connects maritime industry with agriculture

December 12, 2024

Representatives of the maritime and agricultural industries met in Dearborn, MI, for the inaugural meeting of the Great Lakes Alliance for Sustainable Shipping (GLASS). The two-day event provided opportunities for networking and learning more about logistical challenges and opportunities from both industries. The first GLASS meeting opened the conversation between the two industries to help build connections and opportunities for the future.

OF GREYHOUNDS AND LIMESTONE

THE HISTORY OF MICHIGAN LIMESTONE AND THE BRADLEY TRANSPORTATION COMPANY – PT. II

Written by Alex Czarnecki

Str. *George A. Sloan* leaving Calcite loaded with stone in August 1967. The *Sloan* would be the final ship added to the Bradley fleet, shortly before it was merged with the Pittsburgh fleet and renamed the Great Lakes Fleet.

The winter of 1934-35 saw extensive work done on some of the freighters. Due to rising dock costs many companies began to store coal slightly further away from the water, thus making ships with longer self-unloading booms more valuable. It was decided to replace the booms on both the *Robinson* and *Calcite* due to them primarily being used as chartered coal carriers. The *Robinson* saw its 155-foot boom replaced with a 202-foot boom, while the *Calcite* had its 122-foot boom replaced the old boom from the *Robinson*. The *Munson*, another common charter ship, would later get an extra 30 feet added on to her boom in August, giving her a 185-foot boom. In 1939 the boom on the *White* would also be replaced, with a new 202-foot boom replacing her 155-foot original. That left the *Bradley* as the only ship with her original boom, one which, according to a writer for the *Calcite Screenings* magazine, seemed out of proportion with how large the *Bradley* is.

From 1935 to 1940 production and shipping continued to improve and only one ship, the *White*, sat out any of those seasons. The *Robinson* and *Calcite* were both chartered out for much or all of that period of time as well.

With World War II raging in Europe and the economy improving at home it was no wonder Mr. Clymer was able to see Michigan Limestone reach new levels of success and production. 1942 saw the first shipment of 10-million tons of stone since 1929 and employment had once again reached over 500 people, mainly hourly employees. The need for steel in the production of war material to send to the UK and France also helped to spur on growth at the plant. That growth would stagnate suddenly with the attack on Pearl Harbor on December 7th, 1941. Despite the increase in demand for raw materials caused by the declaration of war on the Axis, many employees at Calcite were drafted or volunteered to fight overseas, approximately 100 employees or 20 percent of the workforce would serve during the course of the war.

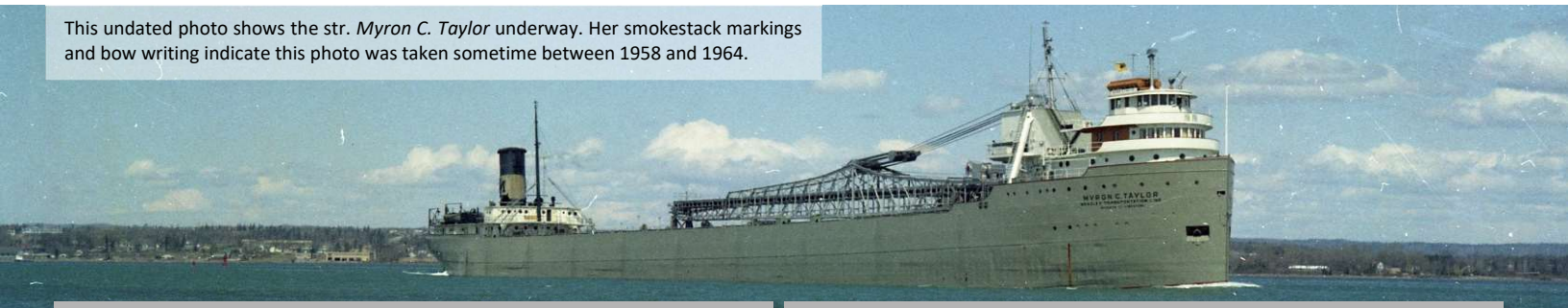
Despite the lower number of employees due to the war effort the Company maintained its productivity by changing its procedures to be more efficient. Shovels were converted to no longer require rails to travel, new electric shovels required smaller crews, and their larger size meant one electric shovel was as efficient as three steam shovels. Other advancements included new, larger and faster drills to penetrate the rock more effectively and new track laying equipment made laying tracks for the trains safer as well. During the war the Coast Guard maintained a small detachment of sailors and a patrol boat at Calcite to protect the harbor and a guard house was built at the main gate. This marked the first time in the Company's 30-year history that access to the plant was restricted.

The end of the war meant the beginning of what is seen as Calcite's "golden age". During the war years of 1942-45 the plant averaged 9.363 million tons of stone shipped per year, while the period of 1946-53, the year Calcite's production peaked, saw the plant ship an average of 13.698 million tons of stone per year. With a peacetime economic boom and continual technological increases, the Calcite quarry was thriving.

The winter of 1941 also saw the first major change aboard one of the Bradley ships as *T. W. Robinson* received new boilers. She originally had three water-tube boilers; however, they were replaced with two larger boilers. The rest of the fleet would receive new boilers throughout the rest of the decade as part of the fleet's revitalization and modernization. The boilers were replaced on the *White, Munson, Taylor, Calcite,* and *Bradley* in 1942, '43, '46, '47, and 1950 respectively. Much of this work was able to be done quickly as the tug basin at Calcite – commonly called the frog pond – was enlarged and became the winter home for all of the ships starting in 1941.

The remainder of the 1940s went smoothly and without any real issues. The most noteworthy thing from the decade happened in 1943. This was when the *Bradley* became the first ship to sail through the newly completed MacArthur Lock in Sault Ste. Marie, a big event which featured many notable guests who came along for the historic voyage. However, if the 1940s was a decade of stability and growth, the 1950s would be a decade of upheaval and tragedy.

In 1952 Michigan Limestone would undergo its first corporate restructuring in its history. US Steel restructured its operations and Michigan Limestone would merge with the Pittsburgh Limestone Co. and gain control of all of the limestone plants under US Steel's corporate umbrella. The Company saw its headquarters moved to Detroit and would be renamed to the Michigan Limestone Division. Mr. Clymer retired as President of



This undated photo shows the str. *Myron C. Taylor* underway. Her smokestack markings and bow writing indicate this photo was taken sometime between 1958 and 1964.

Michigan Limestone at the end of 1952 and was replaced by Hugh Lewis at the start of 1953. Mr. Lewis had worked as an engineer and manager at Calcite since 1926, being promoted to Vice President of Operations in 1945 and Executive Vice President in August of 1952. Later that year Michigan Limestone opened a second quarry in Michigan's Upper Peninsula just outside the small town of Cedarville.

After almost 30 years with the Company, Mr. Lewis moved to Pittsburgh and became a consultant within US Steel in 1955. He was replaced by Christian F. Beukema, who had joined Michigan Limestone in 1940 as part of the construction and maintenance departments. He would later work alongside John G. Munson in Pittsburgh, before he returned to Rogers City in 1953 as General Manager of Operations and prior to moving to Detroit upon his appointment as division president. The 1950s also saw the first change in the tug compliment since 1927. In 1952 a new tug, *Limestone*, was built at Defoe Shipbuilding in Bay City, MI. With her arrival at Calcite, Michigan Limestone sold the *Kellers* and retained three tugs. However, even this was unnecessary and in 1955 the *Central* was sold as well, which left the two newest tugs as the sole workhorses.

Production at the quarry remained high throughout the 1950s and production only dropped below 12 million tons of stone shipped once, in 1958. Things continued as normal as the Bradley Co. entered the 1950s too. The Company underwent its first expansion in almost 25 years in 1951 when it was announced a new freighter would be built for Bradley Transportation – this time at the Manitowoc Shipbuilding yard in Manitowoc, WI. The new ship would be named after former Michigan Limestone president John G. Munson, which required the current ship that bore his name to switch once again. She was rechristened *Irvin L. Clymer* in October 1951. With this name she became the only ship in the fleet to bear the name of all three presidents of Michigan Limestone. That wouldn't be the only change to the Company in the early '50s. With the restructuring in 1952 the Bradley Transportation Co. was redesignated the Bradley Transportation Line, but operations remained the same.

John G. Munson (2) was also commissioned into service in August 1952. She was the first new self-unloader built since the *Bradley* (2) in 1927 and was also the largest ship and new flagship of the Bradley fleet. At 666 feet long by 72 feet wide by 36 feet deep she could carry 20,000 tons of stone, over 6,000 more tons than the next largest vessel, the *Bradley*. Unfortunately, the ship's namesake wasn't able to see her enter service as Mr. Munson passed away in March 1952.

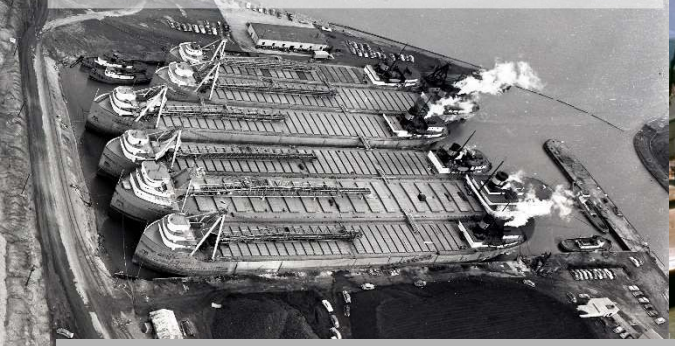
The next few years were business as usual for the Bradley boats and crews. The *Clymer* and *Taylor* would both receive new turbine engines at the Manitowoc shipyard in the winters of 1953 and 1954, respectively. The next big change would occur in 1956 when it was announced a new ship would join the fleet in both 1956 and 1957. *Myron C. Taylor*, a straight deck freighter from US Steel's Pittsburgh Steamship Co., would be converted to a self-unloader at the Christy Corp. shipyard in Sturgeon Bay, WI, over the summer of '56 while her fleet mate *A. F. Harvey* would be converted at Defoe Shipbuilding in Bay City, MI, over the winter of 1956-57. The *Harvey* was built in 1927 and the *Taylor* in 1929. Both ships were 604 feet long by 60 feet wide by 32 feet deep, which allowed them to carry a maximum of 14,000 tons of stone. The *Taylor* entered service in October 1956 after four months of work while the *Harvey* – which would be rechristened *Cedarville* after the quarry in the Upper Peninsula – would enter service in early 1957.

The introduction of the *Taylor* to the fleet meant it would be more difficult to differentiate the two ships. To honor their home city, *B. H. Taylor* was rechristened *Rogers City* in May 1957, the same week the *Harvey* was rechristened *Cedarville*. The renaming of the *Taylor* meant the tug *Rogers City* needed a new name as well, and she was rechristened *Dolomite.* In 1958 the fleet would go through a slight rebrand when an "M" was overlaid the traditional "L" on all of the smokestacks on the ships, including the tugs; the house flag received the change as well. Bradley ships also played a key role in building the Mackinac Bridge during this time thanks to their self-unloading capabilities. The ships were able to dump aggregate stone, taken from Calcite and another nearby quarry in Rockport, straight into the caissons that support the massive bridge. When the bridge was dedicated in June 1958 the *Munson* was present, open for the public to visit on the 26th, the last day of festivities. During the open house there was an exhibit set up that proclaimed the impressive safety record of the Bradley Fleet, an event that would prove tragically ironic just 5 months later.

One can't discuss the history of the Bradley Transportation Co. without mentioning the two tragedies which befell the fleet. The first tragedy happened on the cold, stormy night of November 18th, 1958. On that night the *Bradley* was sailing north from Gary, Indiana, to pick up a late season load of stone from Calcite. It would never make it home. At 5:20 PM, about 12 miles southwest of Gull Island in northern Lake Michigan, the ship buckled and broke in half in heavy weather. First mate Elmer Flemming made a mayday call, and within minutes the ship slipped beneath the waves. Four crewmen: Elmer and deckhands Frank Mays, Dennis Meredith, and Gary Strzelecki made it into the life raft that washed off the top of the ship's pilothouse, but Gary and Dennis would succumb to the elements before rescue arrived the next morning. Frank and Elmer were the only survivors.

Rogers City and the Bradley fleet was devastated by the loss. Of the 35 men on board the *Bradley* that night, 25 were from the town, and 23 died. These men were friends, family, and neighbors of countless men on all 8 of the other Bradley ships. The Coast Guard accident report of the event claimed excessive

(Left): The Bradley Ships laid up in the frog pond in December 1952. The frog pond was the winter home for the Bradley fleet for many years unless the ships needed structural work done in dry dock. From top to bottom: *Calcite, White, Clymer, Robinson, Munson*, and *Taylor*. (Right): The *John G. Munson* loading stone at Calcite in June 1961. The flagship of the Bradley Line is the last of her kind since the *Mississagi* retired in 2021.



hogging of the hull led to metal fatigue and caused the ship to break in half. Elmer Fleming sailed for a few more years and retired from the Bradley fleet in 1966, before he passed away in 1969 at the age of 53. Frank Mays never sailed again but would continue to tell his story for years to come, and even visited the wreck in a submersible, before he passed away in January 2021 at the age of 89.

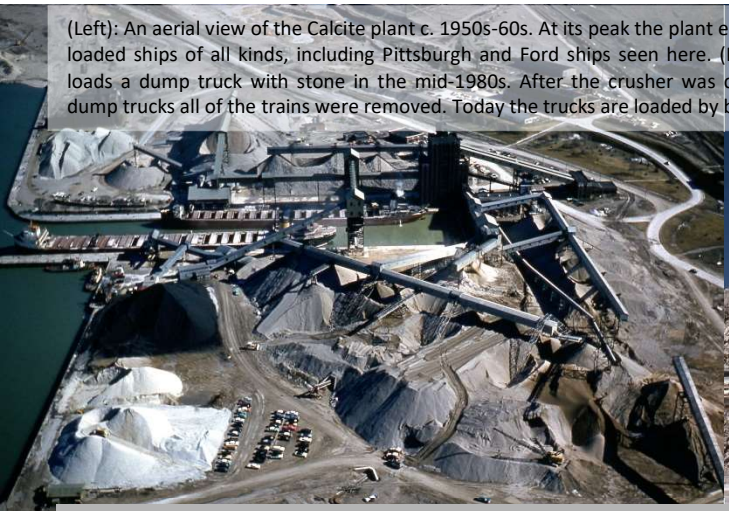
Rogers City and the men of the Bradley boats and Michigan Limestone mourned, but eventually life had to move on. Life aboard the ships returned to mundanity in 1959 and 1960, although one ship would finally see the end of natural life by the end of the year. The *Calcite*, revolutionary when she was built, had seen time pass her by. Her small size meant she was no longer economically viable, and the decision was made to retire her at the end of the 1960 sailing season. On November 17th, 1960, the oldest ship in the fleet was seen off by a crowd of 300 people at her namesake port before she sailed to Conneaut, OH, to lay up for the final time. *William G. Clyde*, another Pittsburgh ore carrier built in 1929 and identical in dimensions to her sisters *Taylor* and *Harvey*, was converted to a self-unloader during the winter of 1960-61 to replace the retired *Calcite*. She would eventually enter service in July 1961 and was rechristened as *Calcite II* in August. That same winter *Cedarville* saw her boilers replaced and she received a new, streamlined, smokestack. *Calcite*'s pilothouse would return home in the summer of 1961 and go on display next to the harbor she called home for 48 years. Today the pilothouse is maintained by the 40 Mile Point Lighthouse Society and is located on the lighthouse's property for visitors to tour.

Following the *Bradley* tragedy Christian Beukema was appointed president of the Oliver Iron Mining Division in Duluth and was replaced by Carl G. Hogberg, who would end up being the final president of Michigan Limestone. Production at the plant remained high going into the 1960s, and allowed the plant to undergo major renovations. In 1964-65 the original four-shuttle loader on the south dock was replaced with a new, more efficient, single-shuttle loader. The four-shuttle loader was one of the oldest parts of the plant, having been in service since the plant's opening in 1912. The entire distribution system was renovated in 1968 and 1969 with the conveyors that towered over the stone piles, an iconic sight at Calcite, were replaced with adjustable stackers and new tunnels and conveyors built under the piles that were more efficient in moving stone to the ship loaders. The Company celebrated its 50th anniversary in 1962 with large celebrations during the first week of August. That celebration would one day morph into the modern Nautical Festival still celebrated in Rogers City today. Also, on January 1st, 1964, US Steel reorganized once again, this time they disbanded the divisions that made up Michigan Limestone and now every individual operation was its own entity. Michigan Limestone was no more, and the plant was renamed the US Steel Calcite Plant.

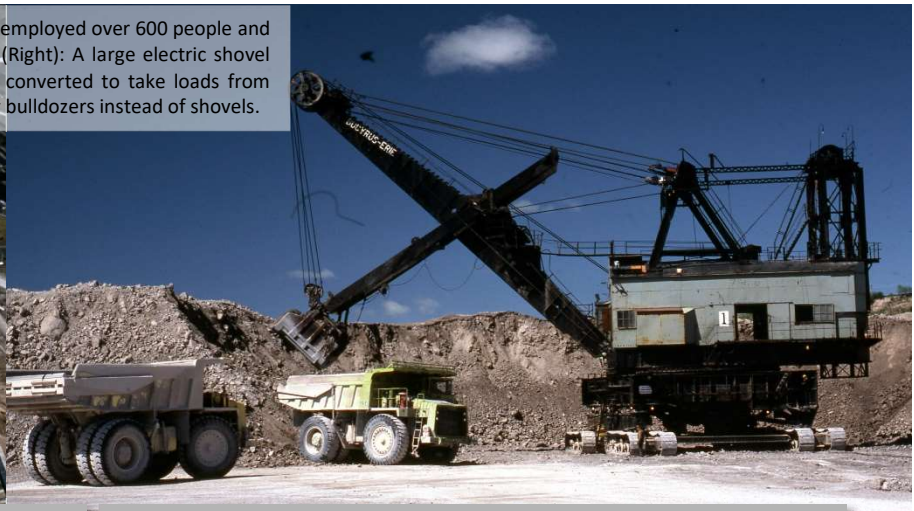
1962 would see an interesting development from the Bradley Line as *W. F. White* traveled out east and worked as a coal carrier on the Chesapeake Bay. She stayed out there until early 1965, when she returned to the Great Lakes. For the rest of the fleet, however, nothing much changed. They continued to dutifully and capably carry their cargoes of stone, coal, and the occasional shipment of iron ore products such as sinter and nodules. In the winter of 1964, *Calcite II* went into drydock in Sturgeon Bay to receive a new diesel engine and a bow thruster, the first Bradley ship to receive both.

The 1965 season started much like every other season when the ships fit out in late March and early April. However, all of that changed on May 7th. Shortly after 5 AM, *Cedarville* pulled out of Calcite with a load of stone destined for Gary, IN. She would never make it to port. It was a foggy morning and the Straits of Mackinac were bustling with commercial traffic. As the *Cedarville* headed west, she received reports from other freighters of a foreign ship not responding to fog horn calls. That ship would later be revealed to be the Norwegian freighter *Topdalsfjord* coming from Milwaukee. Around 9:45 AM, *Topdalsfjord* hit *Cedarville*'s port side at a near 90-degree angle. Brave crewmen aboard the crippled *Cedarville* tried to cover the gash in the hull with tarpaulins but the water was rushing in too fast. The captain ordered the ship to be beached at Mackinaw City, but she capsized and sank in roughly 100 feet of water before she making it to shore, less than half an hour after the collision. Of the 35 men on board, 25 would be rescued, but 10 would die. Most of the victims were in the engine room as they tried to keep the ship moving.

The sinking of the *Cedarville* meant Rogers City and the Bradley fleet were forced to mourn once again. 9 of the 10 men lost were from the small town, but so were almost all of the men who were saved. It would also be a very controversial event, with litigation that carried on for years. The accounts of Wheelsman Leonard Gabrysiak and Captain Martin Joppich differed when both testified to the Coast Guard inquiry, with Gabrysiak's testimony being taken as the correct turn of events while



(Left): An aerial view of the Calcite plant c. 1950s-60s. At its peak the plant employed over 600 people and loaded ships of all kinds, including Pittsburgh and Ford ships seen here. (Right): A large electric shovel loads a dump truck with stone in the mid-1980s. After the crusher was converted to take loads from dump trucks all of the trains were removed. Today the trucks are loaded by bulldozers instead of shovels.



Captain Joppich's was dismissed as self-serving. Much of the blame in the Coast Guard report fell on Captain Joppich for his failure to slow down in dangerous conditions and for his decision to beach the ship at a distant shore, instead of the nearest available one. Captain Joppich would later have his master license revoked for one year, but he never sailed again.

Much like after the sinking of the *Bradley* life soon returned to a new normal aboard the ships. In 1966 the *Munson* had a bow thruster installed, joining *Calcite II* as the only ship in the fleet with this feature. In 1967 another ship was transferred to the Bradley Fleet. *George A. Sloan*, a Maritime class ship built during World War II, had sailed for the Pittsburgh fleet since 1943. She went into drydock at the end of 1966 in Superior, WI, to be converted to a self-unloader and receive a bow thruster. At 620 feet by 60 feet by 35 feet the *Sloan* could carry 17,000 tons of stone, and she was equipped with a 250-foot unloading boom. The *Sloan* left Superior as the 11th and final ship to enter the Bradley fleet, and she arrived at Calcite in early July. However, she would never carry stone under the Bradley flag.

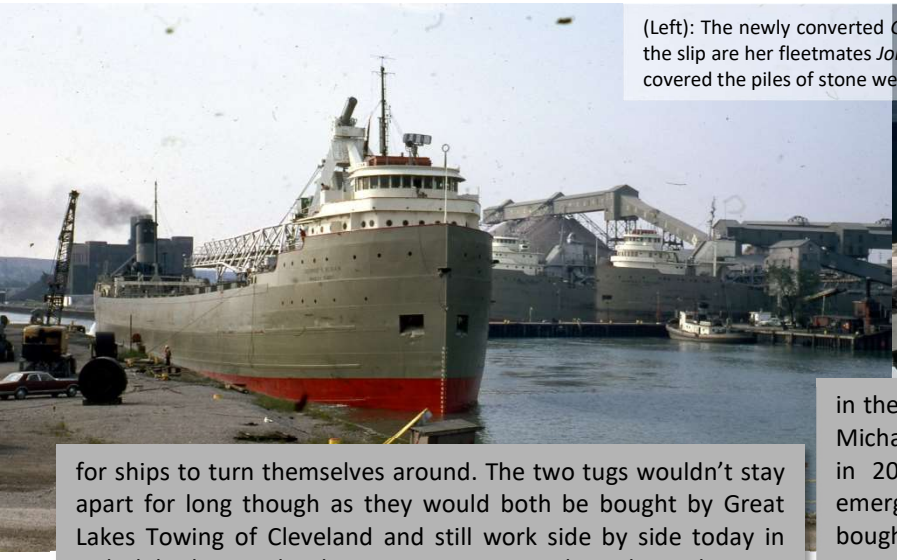
In early July US Steel announced the merger of the Bradley and Pittsburgh fleets into one, new, Great Lakes Fleet. This marked the end of 50 years of sailing under the name "Bradley Transportation Company/Line/Fleet" and 55 years since the *Calcite* first slipped into the water in 1912. Now all ships flew a new house flag, which consisted of US Steel's logo on a blue background. The ships also repainted their stacks to match the traditional "tin stack" design of the Pittsburgh fleet with "USS" in a roundel added to the top. The end of the Bradley name wasn't the end of the ships, though, as they continued business as usual under their new flag. The *Taylor* was repowered with a new diesel engine during the winter of 1968 and sailing on all ships continued without major accidents into the 1970s.

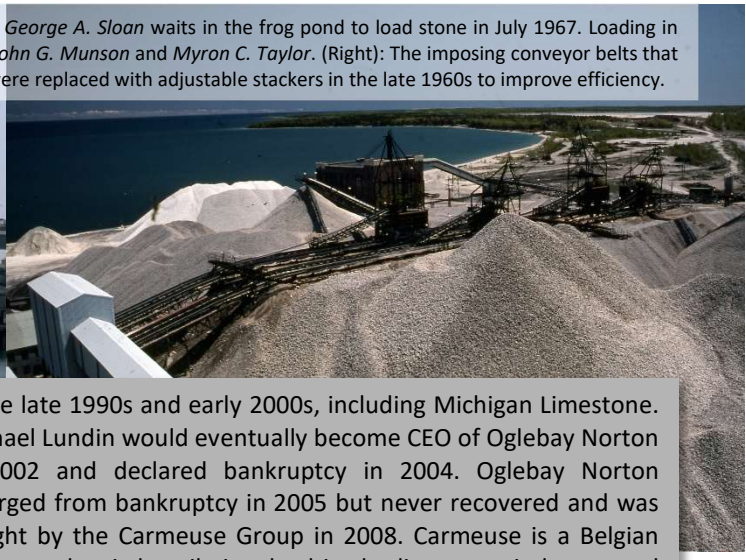
The 1970s would see some of the most immense changes at Calcite since the 1920s. While production remained high, changes began to be made. 85-ton dump trucks were bought to help with winter stripping operations while the trains began to be phased out and the old, large electric shovels were replaced with smaller electric shovels. The trains would be completely removed by the winter of 1983 when the crusher was converted to allow the trucks to dump stone directly into it. Most of the changes would occur with the fleet, however.

Rogers City and *Robinson* were the first ships to see changes in the '70s; both would receive bow thrusters in 1970 and 1973 respectively. One ship that did miss significant time was *Irvin L. Clymer*. At the end of the 1973 season, she underwent inspection and failed. Because of that she was laid up in the frog pond at Calcite for the rest of the 1970s and waited for the call to return to service. One year later she would be joined in hiatus by her fellow old guard member as *W. F. White* pulled into Duluth in December 1974 for what would be the final time as a member of Great Lakes Fleet. In April 1976 the *White* was sold by US Steel to Reoch Transportation out of Canada and sailed to Ontario to receive her new name and paint job. She was registered as *Erindale* and operated by Westdale Shipping Ltd., in June. *Erindale* sailed for the rest of the 1970s and laid up in 1981 after running into a bridge with no expectation to sail again. However, she received one last lease of life when she was repaired during the winter of 1982-83 and sailed one last season before she was scrapped in 1984 at Port Colborne. The rest of the decade passed uneventfully for the former Bradley boats. The *Munson* spent the winter of 1976 in dry dock to receive a 102-foot lengthening operation. During her layup she received new hatch covers and her original coal-fired boilers were replaced with automated oil-fired ones. She re-entered service in 1976 at 768 feet long and a new capacity of 28,000 net tons.

Due to increased competition from other quarries around the state, combined with lower demand for steel, limestone production plummeted throughout the 1980s. In 1979 the plant shipped just under 10 million tons of stone, and by 1982 it fell to 4.2 million tons, and production wouldn't again reach 10 million tons until 1991. This downturn in production was what led to the changes at the plant. The trains were removed, systems that formerly required oversight were automated and the number of jobs fell from a peak of around 600 in the 1960s to around 220 in the 1980s. These changes hurt the local area, and production had to be scaled back permanently, but the mine was able to stay open.

By the late 1980s US Steel, a name synonymous with Michigan Limestone for almost its entire history, looked into divesting itself from its limestone operations. US Steel looked for buyers during the 1980s before one was finally found in 1987. Robert Ross and John Roselli, along with a group of investors, founded Michigan Limestone Operations (MLO) and bought the Calcite and Cedarville quarries for $3.1 million. The quarries stayed profitable under the leadership of Ross and his successor, Michael Lundin. The 1980s finally saw the end of tug service as well. The two remaining tugs, the *Limestone* and *Dolomite* were sold; the *Dolomite* in 1980 and the *Limestone* in 1982. The prevalence of bow thrusters on freighters meant tugs were no longer needed at port where the large harbor left ample room





(Left): The newly converted *George A. Sloan* waits in the frog pond to load stone in July 1967. Loading in the slip are her fleetmates *John G. Munson* and *Myron C. Taylor*. (Right): The imposing conveyor belts that covered the piles of stone were replaced with adjustable stackers in the late 1960s to improve efficiency.

for ships to turn themselves around. The two tugs wouldn't stay apart for long though as they would both be bought by Great Lakes Towing of Cleveland and still work side by side today in Duluth harbor, under the names *Missouri* and *North Carolina.*

In late 1980 the *Clymer* was towed up to Duluth for repairs and refit with a new bow thruster and re-entered service in 1981. That same year the Great Lakes Fleet was spun off independent as USS Great Lakes Fleet Inc. and would again change ownership in 1988 when USX (US Steel's name at the time) sold controlling interest in their transportation interests to Blackstone Inc. and *Clymer* sailed until 1990, minus another hiatus in 1986-87, when she laid up for the last time in Superior, WI, to end a remarkable 83-year career. She would eventually be scrapped in Duluth in 1994. Today all that remains of the old steamer is her pilothouse, a silent sentry greeting ships as they enter Duluth harbor to this day.

Two more ships would meet their demise in the 1980s as well. First was *Rogers City*, which was laid up at the end of 1981 in the frog pond. She was sold to Upper Lakes Towing in May 1987 and towed to Menominee, MI, where it was announced she would be cut down and operated as a barge. USX balked at that and the sale fell through as they wanted to sell her for scrap. In 1988 she was finally sold to a different company and towed to Recife, Brazil in June where she would meet her final fate. The *Robinson* was next to meet her fate. She started the 1982 season but was laid up in Rogers City in May and never sailed again. She remained tied up next to her sister for five years until she was sold for scrap and towed to Port Colborne. She eventually was towed to Recife in September, where she would be joined less than a year later by her sister.

It wasn't all bad in the 1980s, however, as the *Sloan* would receive a new diesel engine in 1985 which allowed her to continue to operate for many more seasons. The *Taylor* had a bow thruster installed in 1988, and in 1990 all of the surviving ships in the Great Lakes Fleet received a new paint job – their hulls getting painted red with a black and grey stripe on the bow, the colors they still carry today.

Michigan Limestone Operations continued to modernize the plant in the 1990s. As the diesel shovels replaced the electric ones they were scrapped and by 1995 the mining was done primarily by two diesel shovels and the small front loaders. A new, larger CAT front loader was bought and by 1997 the smaller diesel shovel was sold to a firm in Minnesota. Another front loader was brought in and replaced the final shovel.

In 2000 MLO was bought by the mining and shipping company Oglebay Norton. This arrangement didn't last long, however, as ON fell deep into debt due to a slate of acquisitions in the late 1990s and early 2000s, including Michigan Limestone. Michael Lundin would eventually become CEO of Oglebay Norton in 2002 and declared bankruptcy in 2004. Oglebay Norton emerged from bankruptcy in 2005 but never recovered and was bought by the Carmeuse Group in 2008. Carmeuse is a Belgian company that is heavily involved in the limestone industry, and they still operate the plant today.

Not much changed from 1990-1999 for the ships of the Great Lakes Fleet, but in 2000 Transtar bought out US Steel's share of the Company and became fully independent. For the first time since 1901 US Steel was no longer involved directly in shipping material around the lakes. That same year Transtar sold 3 of her ships to Lower Lakes Towing out of Port Dover, ON. Those three ships were *Myron C. Taylor*, *Calcite II*, and *George A. Sloan*. The *Taylor* and *Calcite II* would be operated by Grand River Navigation while the *Sloan* was reflagged Canadian and was operated by Lower Lakes. They would receive new names (*Calumet, Maumee*, and *Mississagi* respectively) and continued to sail into the 21st century. *Calumet* would sail through 2007 and was scrapped at Port Colborne in 2009. *Maumee* sailed through 2010 before she spent 2011 in lay-up to strip her of useful parts and was towed to the scrap dock in Port Colborne. *Mississagi* had a long and successful career with Lower Lakes; she sailed until January 2021, and in October she was towed to Sault Ste. Marie for scrapping. As of October 2024, her hull is still in the process of being scrapped.

This leaves the former flagship, *John G. Munson*, as the last ship to carry the legacy of the Bradley fleet. In 2004 Transtar sold the remainder of the Great Lakes Fleet to Canadian National Railroad, who still own the ships today, with Key Lakes Inc. of Duluth as the operator. In 2016 the *Munson* was repowered with a new diesel engine from MaK. She continues to sail, carrying cargoes of taconite pellets, limestone, and more to ports all over the lakes, including the port she called home for over 30 years.

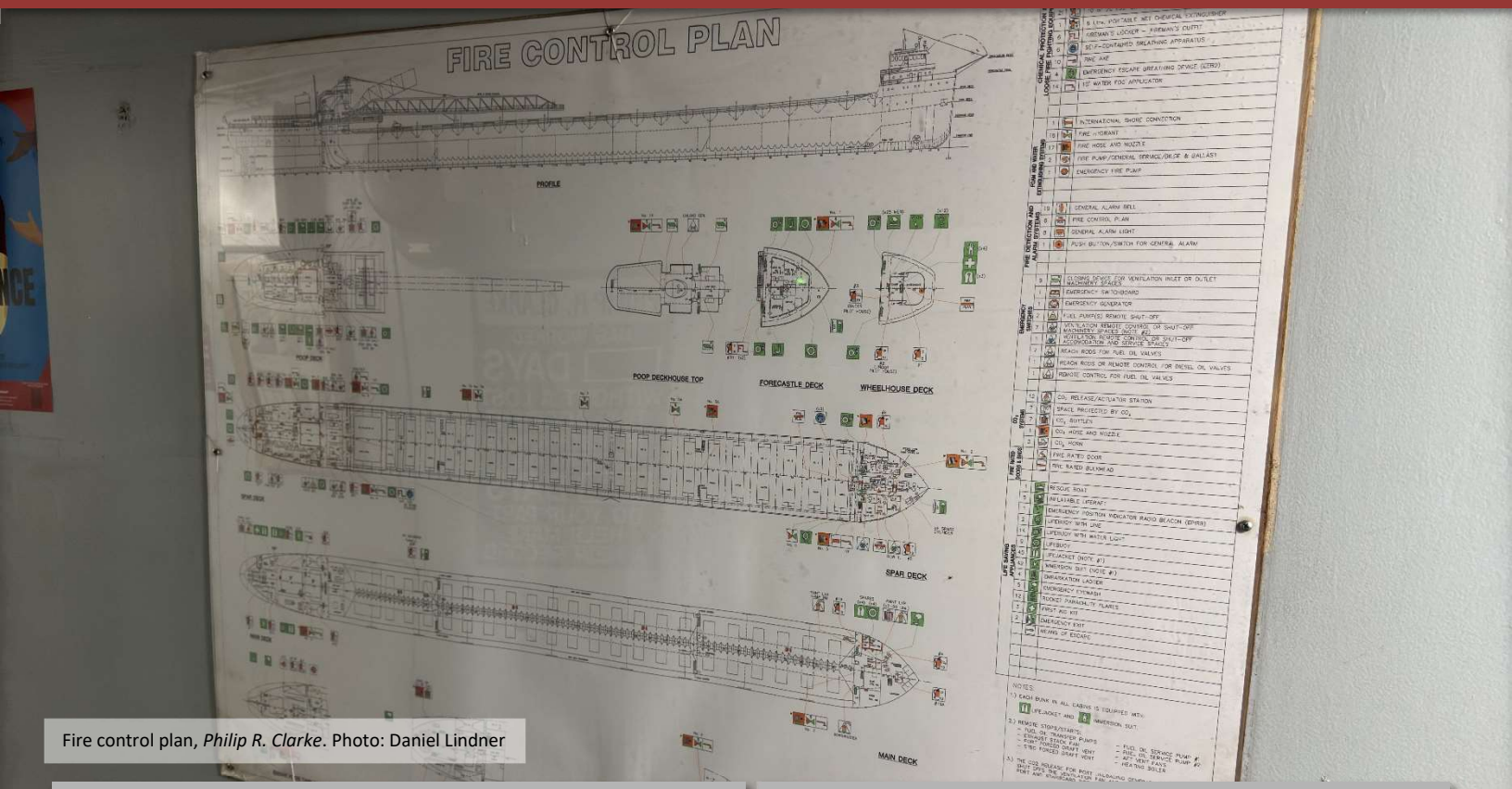
Today the Calcite quarry still ships stone for all kinds of uses. In 2019 the quarry shipped 8,216,920 tons of stone, up from 7,810,399 tons in 2018. Much of the work done is now done by contractors, such as blasting and winter tree removal for stripping operations, but the plant still employs between 100-200 people and new equipment was purchased as recently as 2020. While this is a far cry from the peaks of the 1950s, the quarry is still a vital industry not just for Presque Isle County, but also for the entire Great Lakes region. The face of the plant has changed immensely in 112 years but the future remains bright and the hustle and bustle of mining operations should continue for years to come. ☐

Special thanks to Alex Czarnecki, Curator of the Presque Isle County Historical Museum, for preparing this story. All photos courtesy of Presque Isle County Historical Museum.

IN THE DESIGN – NAVAL ARCHITECTURE & MARINE ENGINEERING DEPARTMENT

FIRE SAFETY IN DESIGN

A LOOK AT SAFETY EQUIPMENT AND DESIGN CONSIDERATIONS



Fire control plan, *Philip R. Clarke*. Photo: Daniel Lindner

Fire is one of the most dangerous hazards that can be faced onboard a ship. The U.S. Coast Guard (USCG) regulates fire safety onboard U.S. vessels, and the International Maritime Organization (IMO) handles international vessels. These organizations outline requirements for construction and outfitting materials, design of manned spaces onboard, and suppression systems used when the event of fire does occur. These factors can be broken down into three main categories, structural fire protection, fire detection, and firefighting and suppression.

Structural fire protection is prescribed by the USCG or in the Safety of Life at Sea (SOLAS) code from IMO. These requirements outline construction materials of the structures as well as insulation classes between boundaries of different classed spaces. Materials are classified with a letter-number (A-#) format. The letter designates the material type, and the number represents the number of minutes in intervals of 0, 15, 30, and 60, that the unexposed side will remain within a certain temperature range. Class “A” divisions are of steel construction and Class “B” divisions are of approved non-combustible material construction. Openings between divisions are also taken into account. Doors, windows, HVAC ventilation, and more are purchased as type-approved components. HVAC and ventilation systems will be fitted with controllable fire dampers to prevent spread of fire.

Fire detection has its own code of requirements, and is further separated into three different categories – smoke, flame, and thermal detection. The type of detection sensor required in a space is determined by the space classification set by USCG or SOLAS.

There are several of methods of fire suppression used onboard a ship. A variety of fixed and portable fire extinguishers are used for firefighting onboard. Fixed systems are common in engine room, mechanical, and accommodations spaces. These systems can be remotely operated from a control station or triggered by fire detection. Systems can be fueled with varying types of fighting agents, such as CO2, Halon, water mist, fog, and more. The type of firefighting agent used depends on the location onboard, cargo type, and presence of people. More investigation is currently going into localized fire suppression for combustion machinery as a first-line fire defense rather than triggering the system for an entire space. Systems on larger vessels are customized while smaller vessels will often use packaged systems. If CO2 is used as the fire-fighting agent, the gas must be odorized with a mint smell so it can be detected by people onboard, similar to the scent of rotten eggs with natural gas. Mint is the second most recognizable scent in the world, behind only peanut butter.

Fire-fighting in cargo spaces or other portions of the ship is typically handled by water via fire mains. Vessels are required to have two fire pumps that pull seawater onboard, located in different spaces. Isolation valves are located throughout the fire main lines in case of a compromise in the line. In addition, two fire stations are required to be located on each level. Some exceptions can be made, if the fire station is located adjacent to a stairway and two 50’ hoses can be connected to reach another level then the station can count for multiple levels.

Portable fire extinguishers are located throughout the ship. The type of fire extinguisher kept in a particular space varies depending on space classification. A variety of chemical, dry

(Main): Fire axes are among things used for fire fighting onboard. (Inset, L-R): Common fire extinguisher found onboard. CO2 tank station for CO2 fire suppression system. Fire equipment locker with fire fighting gear stowed, Philip R. Clarke. Photos: Daniel Lindner

powder, and galley-specific extinguishers are kept in most accommodations and machinery spaces.

SPACE AND MATERIAL CLASSIFICATION

Spaces onboard the vessel are classified into accommodations, machinery, cargo, or other types based on the purpose the space is serving. Boundaries surrounding certain spaces are required to be steel and possibly insulated with special fire insulation. Spaces with combustion engines will require more fire insulation than others. A-0 is the maximum required fire rating around fire boundaries from the USCG Great Lakes vessel rules. In some cases, the owner of the vessel will choose to install higher-rated fire boundaries. The *Mark W. Barker* was fitted with A-60 boundaries surrounding specific spaces onboard. Canadian vessels must follow the SOLAS code and are required to have A-60 boundaries surrounding stairwell trunks and other machinery and accommodations spaces.

Cargo tunnel and unloading conveyor spaces are categorized as general engineering spaces and are not required to have fire suppression, but some operators are adding systems in these spaces as a precaution. Often unloading tunnels will have a "washdown" main that is built to the specs of a fire main. This system is primarily used for washdown in the tunnel but can be used in emergency to help fight fire. Unmanned barges are not required to have fire protection and suppression onboard. Some may be equipped with washdown systems similar to those used in unloading tunnel spaces on manned vessels.

If the ship handles hazardous cargoes such as petroleum or chemical products, spaces surrounding cargo vents and other hold access points are deemed hazardous zones. Regulations prescribe what types of electrical equipment can be installed in surrounding areas. Some hazardous cargoes have a 5' tall hazardous zone located directly above the deck. Equipment in hazardous zones must be rated "EX" for explosion-proof. Firefighting stations are also strategically located near hazardous zones in case of emergency.

Ships are also required to have fire control stations strategically located around the vessel. These stations are located at easy-to-access locations and have controls to HVAC and ventilation dampers, fire suppression systems, and quick-closing valves to shut off specific fuel sources for combustion engines. Fire control plans are also displayed at common locations around the vessel for reference in case of emergency. These plans have details regarding fire boundaries, fire suppression system controls, fire extinguishers, and escape routes.

Construction and outfitting materials fitted onboard are controlled by USCG and the SOLAS code. Items such as floor coverings, wall coverings, and mattresses must all be approved as non-combustible or certified for non-hazardous fumes if they catch on fire. Mineral wool material has replaced asbestos as the primary fireproof insulation material. Fire insulation can come in board or batting form, and insulation must meet certain coverage requirements onboard certain spaces.

EGRESS

Another important aspect in fire safety in design is egress – methods of getting in and out of spaces onboard. Regulations demand two ways in and out of most spaces onboard. If an entire room can fit within a 5m radius around the door, then another access point is not required. In cases where another door out cannot be arranged, a vertical ladder to a quick-acting hatch above can be considered. Stair trunks are required to have fire boundaries, and gratings must be fire-rated.

The world of fire safety and control in design is ever-evolving following accidents in recent years. Systems and designs continue to improve to make shipping safer and reduce the risk of fire and fire spread onboard. ☐

Special thanks to the naval architects who provided their time and resources to assist in the writing of this article. Thank you to Travis Martin and Fred Koller from Bay Engineering, and Nick Hunter from NETSCo.

VESSEL FEATURE

ST. MARYS CHALLENGER / PRENTISS BROWN

(Main): *St. Marys Challenger / Prentiss Brown* on the Detroit River, June 2023. Photo: Isaac Pennock. (Inset): *William P. Snyder* on drydock, Detroit, MI, date unknown. Photo: Courtesy of MHSD Collection

The keel for the *St. Marys Challenger* – then known as Hull #17 – was laid over a century ago on October 16, 1905, at Great Lakes Engineering Works' Ecorse, MI, yard, as a result of a contract from Shenango Furnace Co. to construct their first Laker. Hull #17 was the standard as far as gearless bulk carriers went at that time, built with longitudinal framing and was 552' long, 56' wide, and 31' deep with a capacity of approximately 10,900 tons. She was powered by a yard-built 1665-IHP triple expansion steam engine and two yard-built coal-fired scotch boilers. What set her apart was her luxurious guest quarters and accommodations, something Shenango would make a name for themselves with. Hull #17 was christened *William P. Snyder* and launched on February 17, 1906, and set sail on her maiden voyage on April 26, 1906.

William P. Snyder had a relatively uneventful early career. She was reboilered in 1924 with coal-fired water tube boilers. She was sold to Stewart Furnace Co. of Cleveland in 1926, and renamed *Elton Hoyt 2nd {1}* on June 26. The *Hoyt* was sold again in 1929 to Youngstown Steamship Co., under the management of Pickands Mather & Co. The Youngstown fleet was absorbed into Pickands Mather's Interlake Steamship Co. the following year.

In 1950, *Elton Hoyt 2nd* was repowered by Christy Corp. of Sturgeon Bay, WI. Her old triple-expansion engine was removed and replaced with a 3500 IHP Skinner Marine Unaflow Reciprocating steam engine, and her boilers were exchanged for new water tube boilers. Not even a full season into her new engine, the *Hoyt* was involved in a collision with the *Enders M. Voorhees* in a snowstorm in the Straits of Mackinac on November 24, 1950. Both vessels suffered significant damage, and the *Hoyt* was repaired by her builder's yard shortly thereafter. *Elton Hoyt 2nd* was renamed *Alex D. Chisholm* in early 1952 to free her name for a new vessel under construction for Interlake.

Reaching the end of her useful life in the ore and coal trades, the *Chisholm* was laid up at Erie, PA, in 1962. She was purchased by Medusa Portland Cement's newly-formed Cement Transit Co. in 1966 for planned conversion to a powdered cement carrier.

Medusa was nearing completion of constructing a large cement plant in Charlevoix, MI, and was in need of a vessel to distribute product to terminals around the Great Lakes region. *Alex D. Chisholm* was towed to Manitowoc Shipbuilding in Manitowoc, WI, for refit. There, a centerline bulk head, slopes and airslides were installed in her cargo hold leading to a centerline conveyor belt. The conveyor then feeds a vertical bucket elevator aft of the forward house, with a 48' discharge boom for unloading into shoreside terminals. In addition, her boilers were converted to oil-firing and her accommodations were renovated.

She was rechristened *Medusa Challenger* on June 27, 1967, in Cleveland, OH, and began her second life as a cement carrier delivering product from Charlevoix to terminals in Chicago, Manitowoc, Milwaukee, Detroit, and Cleveland. In her early years as a cement carrier *Medusa Challenger* made many trips up the Chicago River to the Medusa Terminal on Goose Island, just northwest of downtown. She was nicknamed the "jinx ship" when she traveled up the Chicago Sanitary & Ship Canal, as many downtown bridges got stuck in the up position when they opened for her to pass through. A new terminal opened in South Chicago on Lake Calumet in 1979, and the *Challenger* no longer made trips through downtown Chicago.

(Left): *Medusa Challenger* inbound on the Maumee River, Toledo, 1990s. Photo: Jim Hoffman. (Right): Pusher tug *Prentiss Brown* in the notch, Detroit River, June 2024. Photo: Isaac Pennock

Medusa Challenger began calling on Ferrysburg, MI, in 1984. Medusa brought the small cement carrier *Badger State* in to use as a storage barge to determine if it was feasible to build a permanent facility, which was built in 1988. The *Challenger* was the first vessel to unload at the new Medusa terminal on May 22, 1987, and the first to call on the new Miller Paving Terminal in Owen Sound, ON, on November 20, 1990. Of interesting note, the *Challenger* was hit by a waterspout on northern Lake Michigan on October 5, 1997, not sustaining major damage.

Medusa Challenger was caught in the midst of several large cement company mergers in the late 1990s and early 2000s. Medusa Cement was sold to Southdown Inc. in 1998, and the *Challenger* was renamed *Southdown Challenger* in April 1999. Southdown was sold to Mexican cement giant Cemex in 2000, and the ship was sold to Wilmington Trust and chartered by Cemex in order to maintain her Jones Act status. The *Challenger* was managed by HMC Ship Management, a subsidiary of Hannah Marine Corp. Great Lakes operations of Cemex were sold to Brazilian company Votorantim Cimentos in 2005, with ownership of the facilities being placed under the wing of their St. Marys Cement US division. *Challenger* was renamed *St. Marys Challenger* prior to entering service for the 2005 season.

2006 marked *St. Marys Challenger*'s centennial season, sailing from April 4 to December 11, 2006. Her Texas deck gunwale was adorned with the phrase *"Still Steamin 1906-2006"* to celebrate the occasion. Hannah Marine Corp. went out of business in early 2009, and management of the *Challenger* was taken over by Central Marine Logistics. At the time, Port City Marine Services – a subsidiary of Muskegon-based Sand Products Corp. – was managing the operation of St. Marys' other cement carrier, the barge *St. Marys Conquest*. Central Marine Logistics passed off the operating agreement to newly-created Port City Steamship Services – a wing of Port City Marine – in 2009. Port City Steamship purchased the vessel outright from Wilmington Trust in 2010.

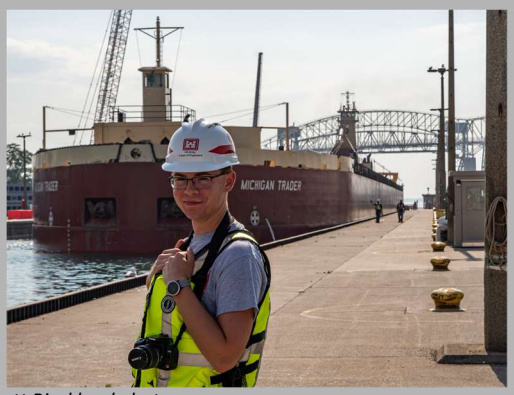
It was decided to convert *St. Marys Challenger* into an Articulated Tug-Barge unit at the time of her next special survey in 2013. While the vessel was still a perfectly operable steamship, the lack of availability of replacement parts for her propulsion system presented a large risk. She laid up at Fincantieri Bay Shipbuilding in Sturgeon Bay, WI, on October 11, 2013, and her steam plant was shut down for the final time. Her pilothouse was removed and replaced with a small lookout tower forward. The accommodations spaces being used to house new generator units. Her aft accommodations and stern were cut down and the old steam engine removed while units for a notched stern were fabricated and fixed to the hull in drydock. She returned to service on June 3, 2014, paired with the tugboat *Bradshaw McKee*. *Bradshaw* was switched with the *Prentiss Brown* as the primary push tug in 2015.

After the conversion to a barge, *Challenger*'s old pilothouse was donated to the National Museum of the Great Lakes. The pilothouse was transported to Toledo on the foredeck of the *Paul R. Tregurtha*. It will be opened for display in the near future as part of an expansion of the museum.

While no longer in steamship form, *St. Marys Challenger* continues to serve Port City and St. Marys Cement as a productive carrier, focused on Lake Michigan runs to Milwaukee and Chicago and Lake Erie trips to Toledo and Cleveland.

The twin-screw tugboat *Prentiss Brown* was built in 1967 by Gulfport Shipbuilding of Port Arthur, TX, Hull #693. She was built for Gulfcoast Transit, a subsidiary of Tampa Electric Co. and named *Betty Culbreath*. The *Brown* is 123'05'' long, 31'06'' wide, and 19' deep with a draft of 13'08", and powered by a pair of GM EMD 12-645-E2 diesels producing 3900 BHP. She was delivered in August 1967, and paired with the bulk cargo barge *Pearle Jahn* that fall. She was primarily engaged hauling coal from Gulf ports to Tampa Electric power plants in Tampa, FL. She was sold to McAllister Towing & Transportation of New York, NY, in 2003 and renamed *Michaela McAllister*, and served as a harbor assistance tug in Charleston, SC.

The *Michaela McAllister* was purchased by Port City Tug Inc. – a subsidiary of Sand Products Corp. – in mid-2008 and brought to the Great Lakes. She went to Bay Shipbuilding for interior renovations and the installation of a Bludworth ATB coupler system. She was renamed *Prentiss Brown* after Prentiss Brown Jr., board member of Sand Products and son of the Senator from Michigan. *Prentiss Brown* departed Sturgeon Bay on February 8, 2009, bound for Milwaukee, WI, where she was paired with the barge *St. Marys Conquest*. The pair entered service for Port City Marine Services on March 8, 2009, bound for Charlevoix, MI. *Prentiss Brown* swapped places with the *Bradshaw McKee* as primary push tug for the *St. Marys Challenger* in 2015, where she remains today. ◻



Scott Bjorklund photo

BRENDAN FALKOWSKI is a Naval Architect/Marine Engineer student at University of Michigan who shares his passion for the Great Lakes shipping industry through his newsletter, research, and photography. He hails from Bath, MI. He is an avid musician and is a member of the Michigan Marching Band. Brendan is also a competitive sailor, and is an assistant coach and photographer for the Bath High School Sailing Team. He enjoys sailing, photography, chasing boats, and spending time with his friends and family. ◘

SHIPWATCHER NEWS CREW: *Content:* Brendan Falkowski, Sam Hankinson, Jack Hurt, Scott Bjorklund; *Photo:* Daniel Lindner, Roger LeLievre, Isaac Pennock, David & Gus Schauer, Ethan Severson, Logan Vasicek

SPECIAL THANKS TO THE SPONSORS OF *SHIPWATCHER NEWS*

Support Shipwatcher News at www.shipwatcher-news.com/support/
Special thanks to the sponsors of Shipwatcher News:

MATE SPONSORS

Gerald Micketti

ENGINEER SPONSORS

Don Detloff

Thomas & Donna Heck

John Hughes

Bob & Mary Schroeder

CAPTAIN SPONSORS

Algoma Central Corp.

Bay Engineering, Inc.

The CSL Group

Ross & Debbie Falkowski

Jerry & Dee Dee Heck

Martha Heck & Richard Wilson

Interlake Maritime Services

Know Your Ships

NETSCo. Inc.

Ocean 5 Strategies

Port City Marine Services

Jerry Siudara & Lisa Lemans

Soo Marine Supply

VanEnkevort Tug & Barge

www.shipwatcher-news.com

Cover Photo: *Tim S. Dool* downbound on the Detroit River, November 20, 2024. Photo: Sam Hankinson