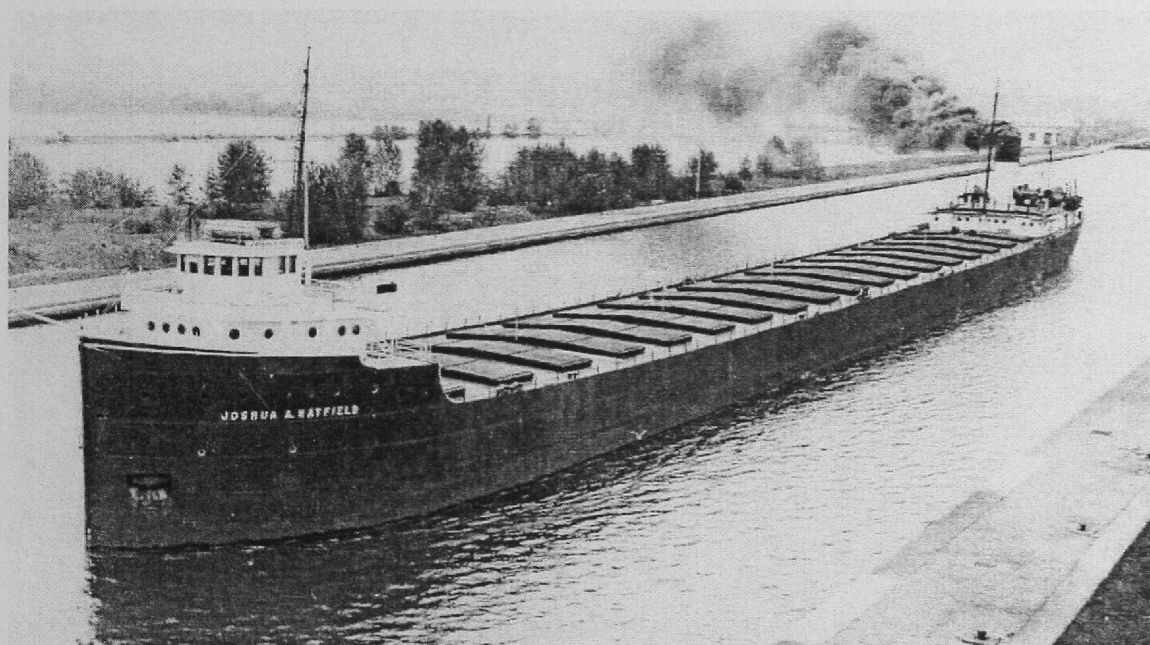


# A Pictorial History of My Coal Passing Career

Harry Benford  
Professor Emeritus of Naval Architecture &  
Marine Engineering, University of Michigan



For presentation before the  
Marine Historical Society of Detroit

Port Huron

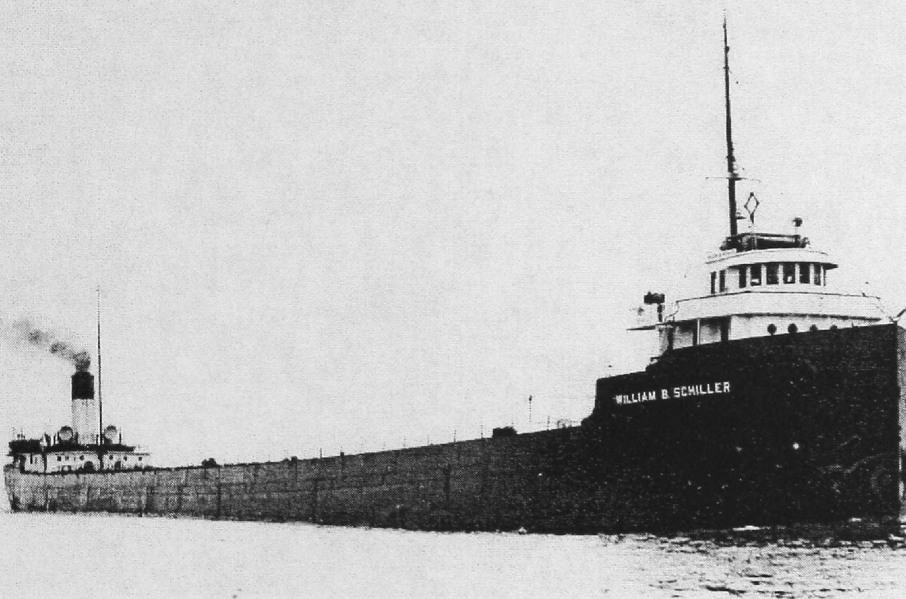
May 19, 2007



# A Pictorial History of My Coal Passing Career

Harry Benford

***Preface:*** *Seven decades ago I wanted to find a shipboard job as a way of complementing my formal education. I was studying naval architecture and marine engineering at the University of Michigan. Although our nation was in the midst of the Great Depression, I was lucky enough to find brief employment as a coal passer in the summer of 1936, and for almost all of the next summer. Much of what I report here is based on sketches and photographs I made during that initial stint, which was aboard the ore carrier William B. Schiller.*

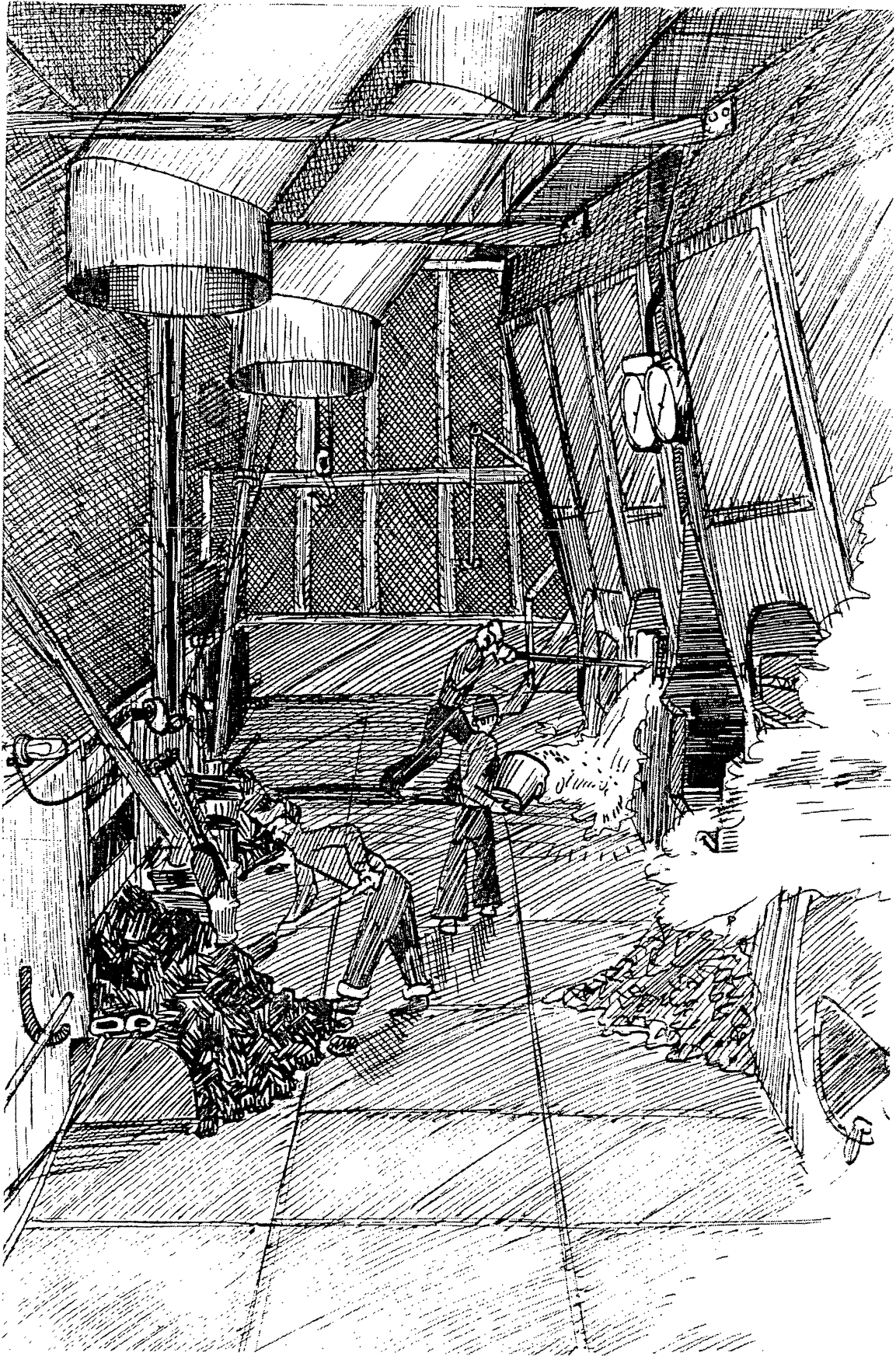


Steamer *William B. Schiller* of the Pittsburgh SS Co (now Great Lakes Steel Fleet). A typical ore carrier of the day, her hull and triple expansion steam engine had been built in 1909 at the American Shipbuilding Company's Lorain yard. Length: 580 ft, Beam: 58 ft, Depth: 32 ft.

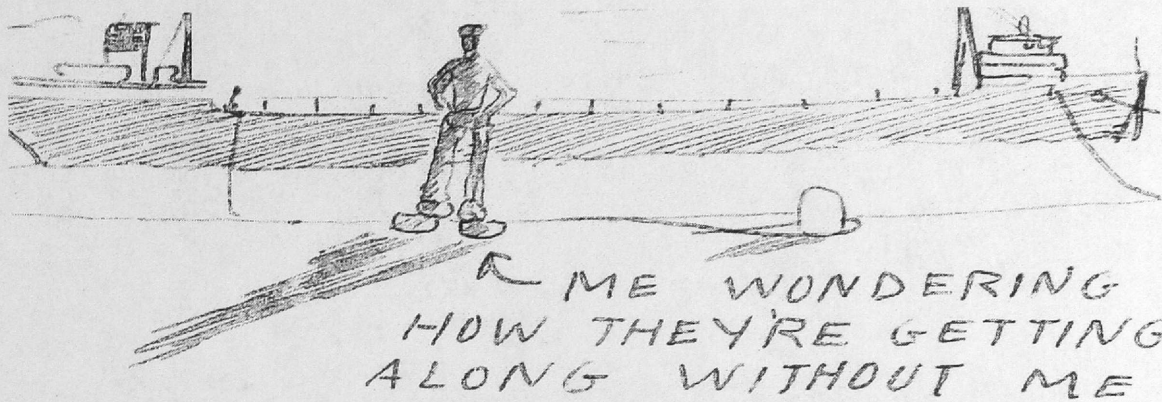
Having been told to meet the ship in Lorain, I arrived the night before and stayed in a hotel right next to one of the steel company's blast furnaces, which kept the night alight and filled with lusty industrial noises. I am sure I did not sleep well.

The *Schiller* arrived in mid-afternoon and I was signed on as a temporary coal passer, replacing the regular fellow who was on leave. The Chief Engineer assigned me to the 6 – 10 watch, and my first task was to carry baggage ashore for the Chief's wife and kids, who were just returning from a round trip. While I was thus engaged, the *Schiller* was being eased to a new position, so I couldn't re-board for an hour or two – and thus my seafaring career got off to a halting start.

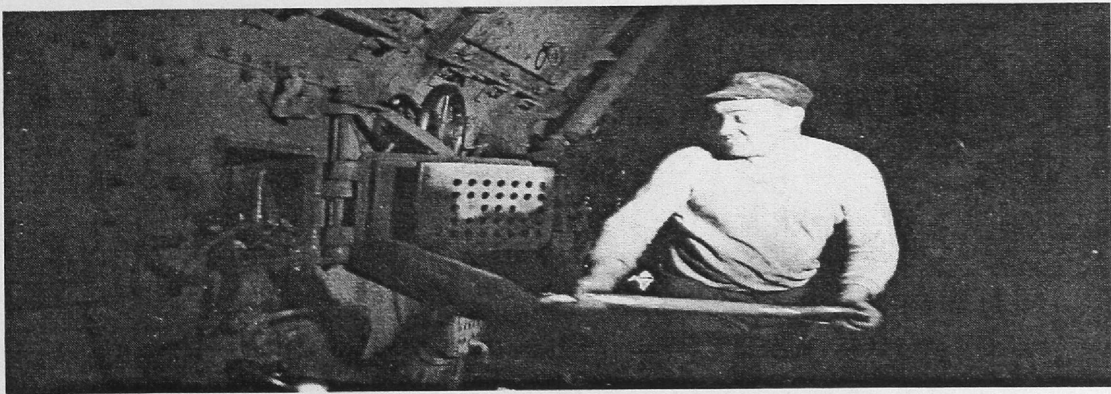
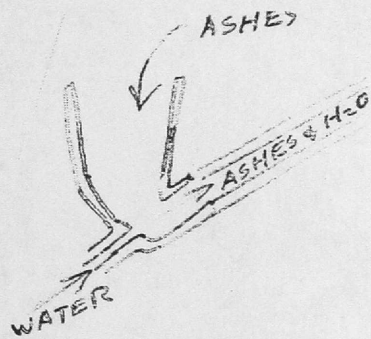




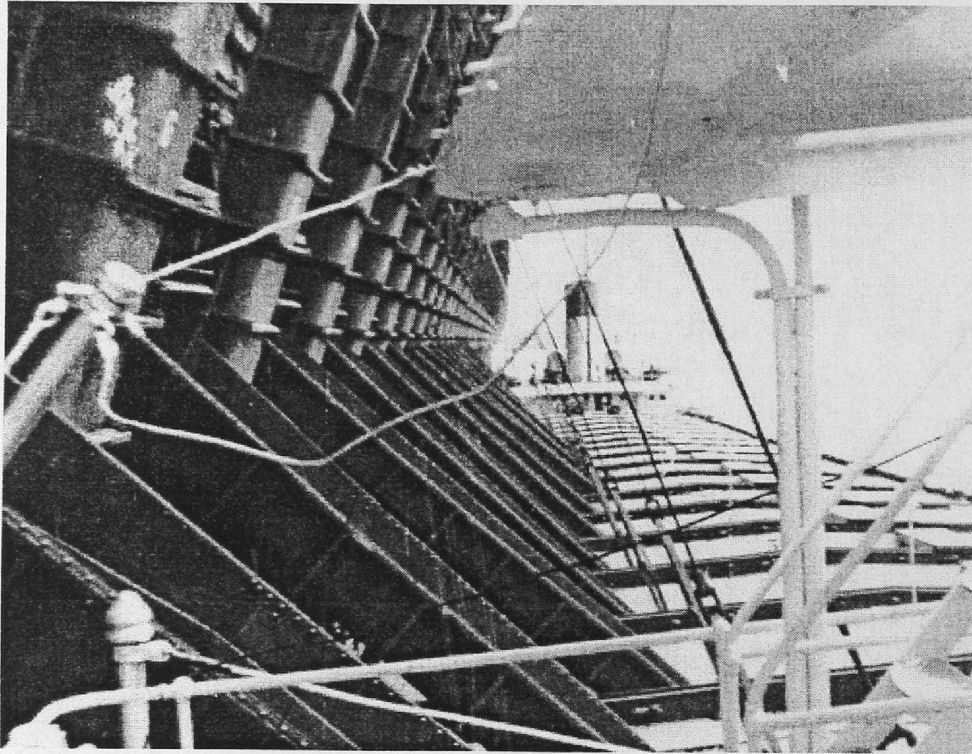




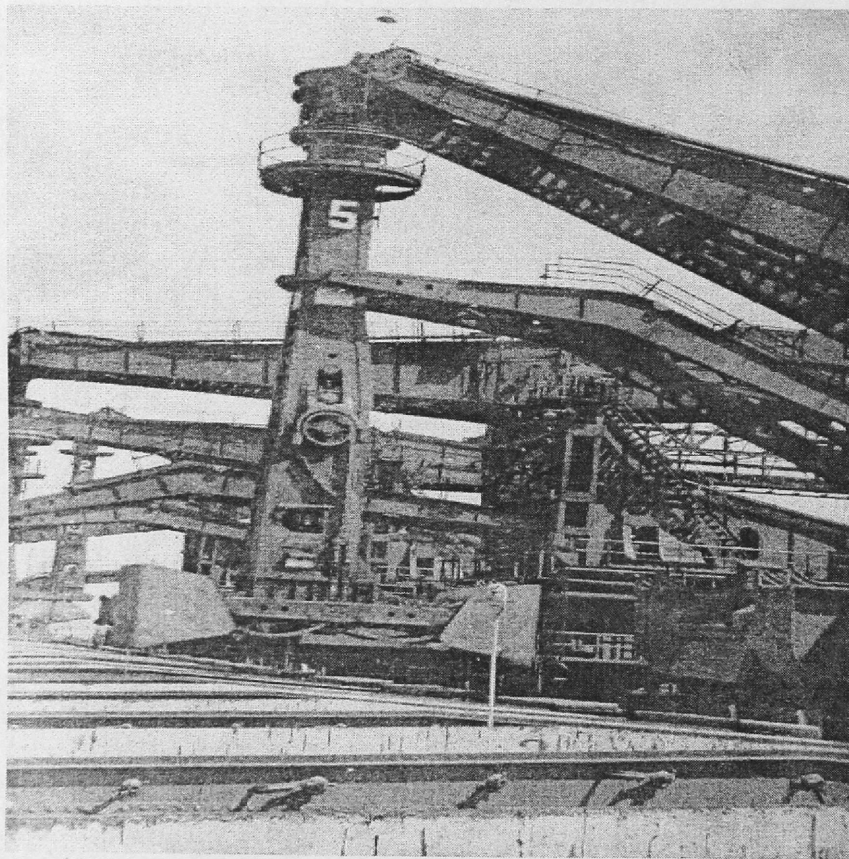
When finally back on board, I found my typical 4-hr watch started with a brief period helping two firemen clean the ashes out of the boilers. My job included hurling a pail of water on the red-hot ashes, then shoveling the wet mess into the hopper of the "ash gun." My log records the sophisticated system employed in activating the ash gun's watery blast. This involved blowing into a pneumatic tube terminating in the engine room and informing the engineer by code: One whistle: port gun; two whistles starboard gun; three whistles: shut off. With that out of the way I stepped into the bunker and shoveled the coal to within easy reach of the firemen's shovels.



A typical round trip, which took about a week, consisted of carrying iron ore from Duluth/Superior to one of the steel mills on Lakes Erie or Michigan, then returning in ballast. Often we would pause briefly at Detour (on the St Mary's River) to refill the bunkers. My work as a coal passer increased progressively as we neared the end of the bunkering cycle. In one extreme case we sailed short-handed for one round trip. That left two of us coal passers, each working six-hour shifts.



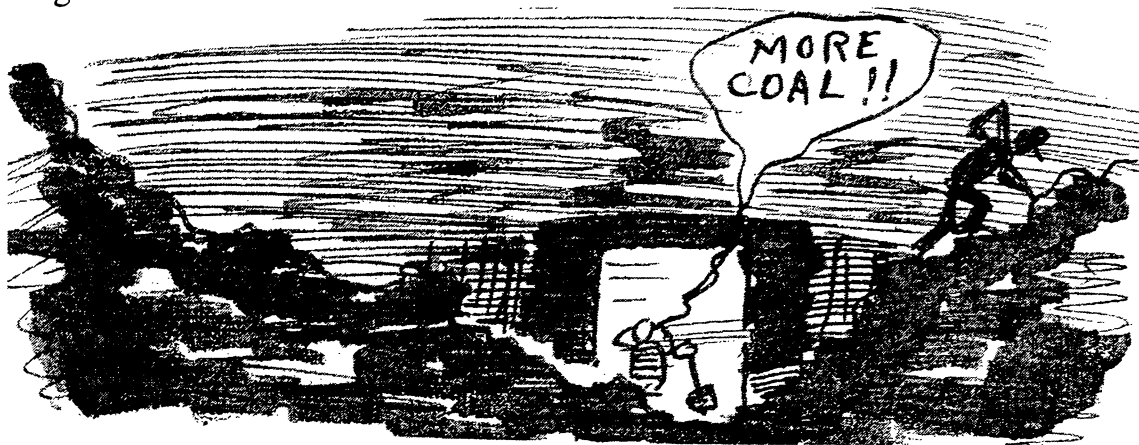
Gravity loading took only about four hours.



The big Hulett might unload us in eight hours.



Toward the end of the bunkering cycle we had to spend almost all of our time coaxing coal from bunker to fire hold.



Here is how I looked after such a grueling watch



UP ON  
DECK  
AFTER  
JUGGLING  
COAL ALL  
WATCH.  
(WHY WERE  
CALLED "THE  
BLACK GANG")

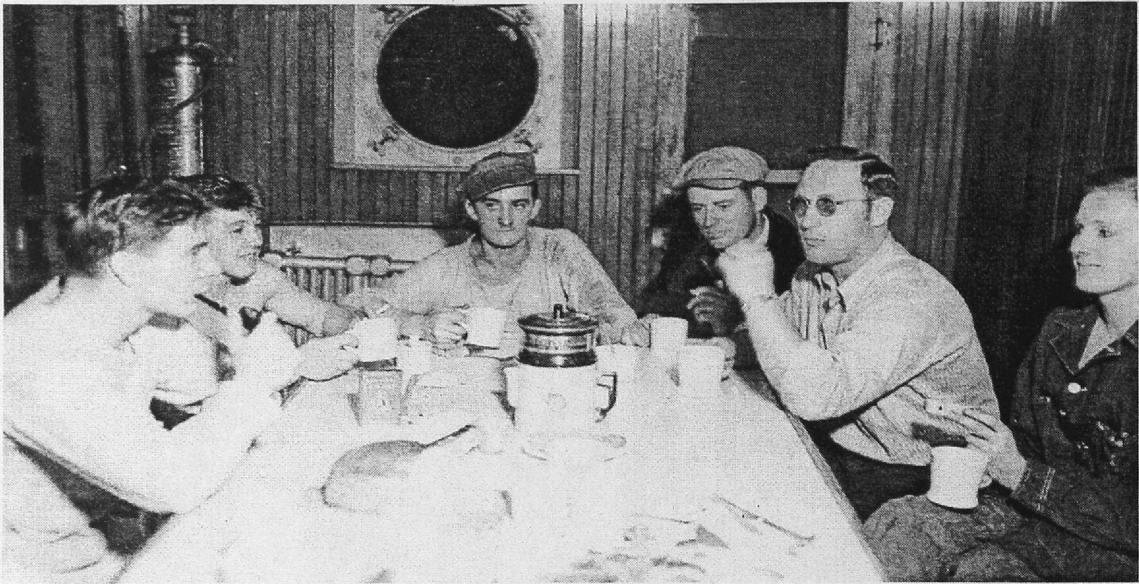
Of course the work was hard and sweaty, but the bright side was that food never tasted better, and a drink of cold water never more exhilarating.

We were blessed with good cooks and the portions were generous. While the officers ate in their own rather sumptuous dining room, we lower rank fellows ate at a long table covered with a checkered tablecloth. This cloth served as a community napkin, and was turned over after a week's use.



JUST CAUSE  
FOR BEING  
A FILTHY GLUTTON!  
A BIG APPETITE + GOOD FOOD  
AND LOTS OF IT





Once my boiler room work was done, I eagerly reported to the third assistant engineer in the relatively comfortable engine room dominated by an enormous triple expansion steam engine. There I carried out miscellaneous tasks: painting, cleaning, and running errands, or also such assignments as (quoting from my diary) “Keeping the water jug full when running in any of the rivers or Lake Erie.” (Mostly, we enjoyed drinking water pumped right out of the upper lakes.)

Were I a poet I should create a lyric poem in praise of marine reciprocating steam engines. I should extol their quietly swishing up-and-down pistons and connecting rods; their galloping cranks and never-resting Stephenson links. I should attempt to convey a feeling for their warm enshrinement in the fragrance of steam and oil, and the appealing vision of multiple, well-lubricated moving parts, all of which, when taken in total, are far beyond the powers of my prosaic vocabulary.

When in confined waters, the engineer had to work continually to control the main engine. In that situation I would be stationed at the Chadburn (engine telegraph). There I would swing the handle to match the command signaled from the pilot house: slow ahead, slow astern, and so forth – and shout the order to the engineer. Now the engineer would be standing right next to the Chadburn and could see the signal for himself, but he was too busy tugging levers to swing the handle in response. My real responsibility was to use the telegraph to acknowledge the orders coming from the pilot house; shouting the orders was secondary; and that’s a good thing because on a couple of occasions I yelled “Ahead!” when I should have yelled “Astern!” Fortunately, the engineer was wide awake; he saw my mistake and ignored my verbal command. Nice guy that he was, I never received so much as a dirty look for my absent minded behavior.

The otherwise uneventful routine was enlivened by two mishaps that I recall. In one case the Chief and one of his assistants decided to adjust the endless metal belt

on the refrigeration machine. Having completed the adjustment, they gave the unit a trial spin. The machine worked to perfection, but having forgotten to re-install the shield, they found the well-lubricated belt throwing grease and kerosene to the four winds. Do I need to tell you who was called upon to clean up the mess?



On another occasion, having over-loaded an ash gun, that otherwise complacent device struck back by regurgitating a goodly quantity of newly generated mushy ashes/water. Again, I was called upon to clean up the mess.

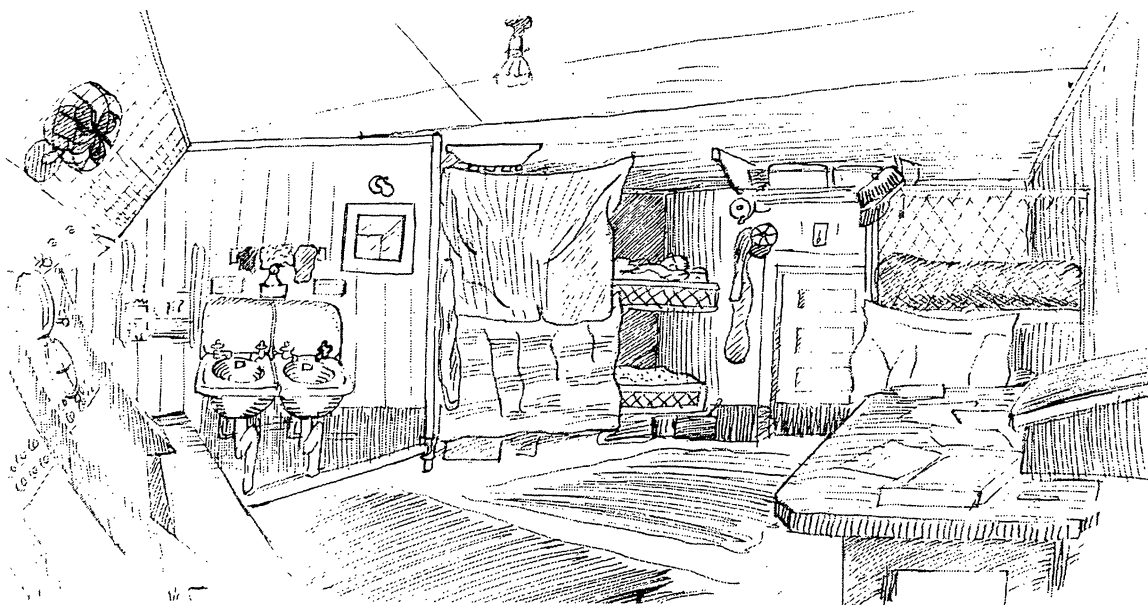


Perhaps my most disagreeable task was cleaning the “bottom pan,” if I recall the term properly. That was the tightly confined space between the bottoms of the

boilers and the tank top. I suppose the clearance was perhaps two feet, and featured a few inches of water and wet ashes. Equipped with a bucket and little shovel, I had the pleasure of crawling around and ridding that right-little, tight-little, dim-little enclosure of both ashes and water. The best thing I can say about the experience is that I had to do it but once in my entire coal-passing career. Still, it must be said, there may be times when a coal-passer's lot is not a happy one.

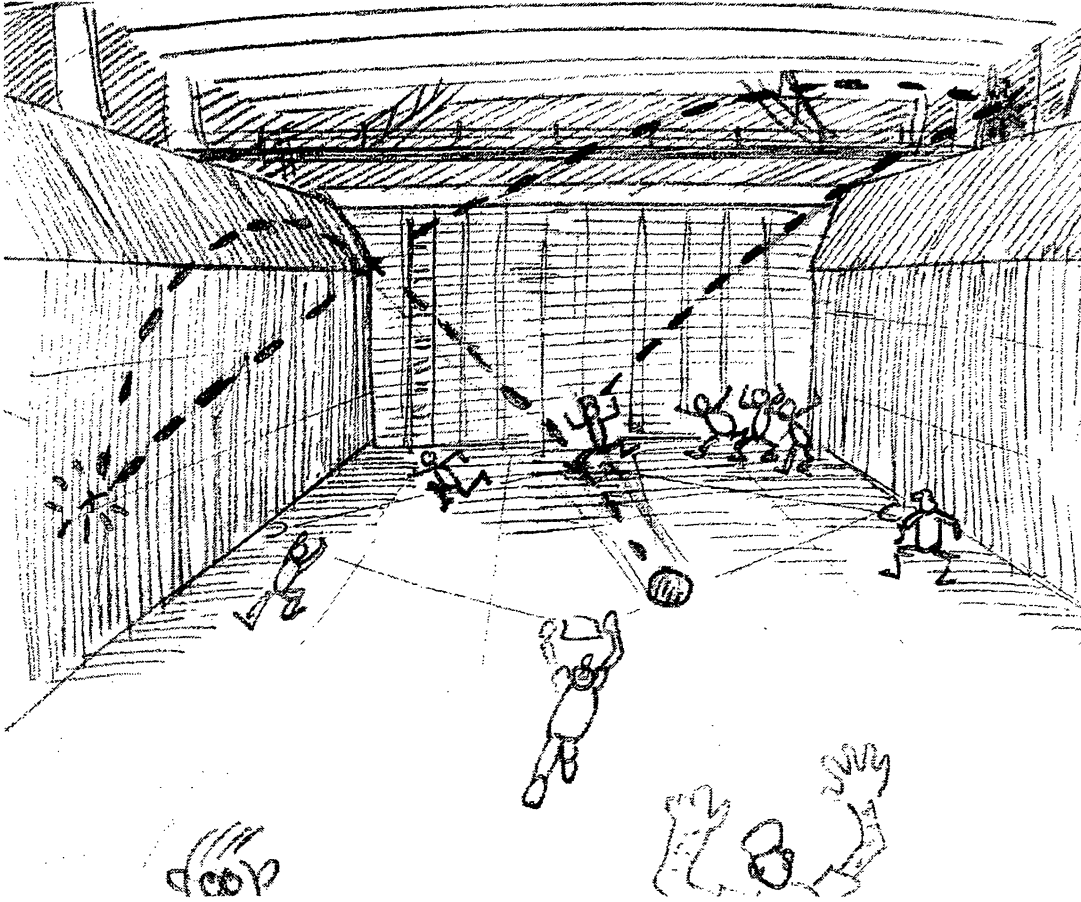
Technical aside: The engine room of the *Schiller* abounded in little, mostly single-cylinder, steam engines driving pumps, generators, etc. One of the engineers and I counted no fewer than 26 such individual units, and that meant a lot of potential problems with countless individual parts.

Shown below you can see the on-site sketch I made of the cabin I shared with the other two coal passers. This was not within the deck house, but down under the uppermost deck, and that's the side shell framing you see on the left. The electric fan was mounted on a sloping surface behind which ran a chain connecting the steering engine to the rudder quadrant. It seems that, rather than mounting the steering engine right above the rudder in the usual way, the designers had chosen to place it in the engine room and connect it to the quadrant, by lengths of chains, port and starboard. There was nothing wrong with that in principle, but in practice it made for an intermittent rumbling clatter that did nothing to help rock us in the arms of Morpheus.



Of course, working only eight hours a day, we always had at least a few hours for recreation. This might involve a game of quoits between the hatches, or perhaps a vigorous softball game in the number one hold.





These games were marked by the complete integration of deck and engine personnel and a leveling of ranks, which is documented in my log: "I struck the Skipper out twice in one day."

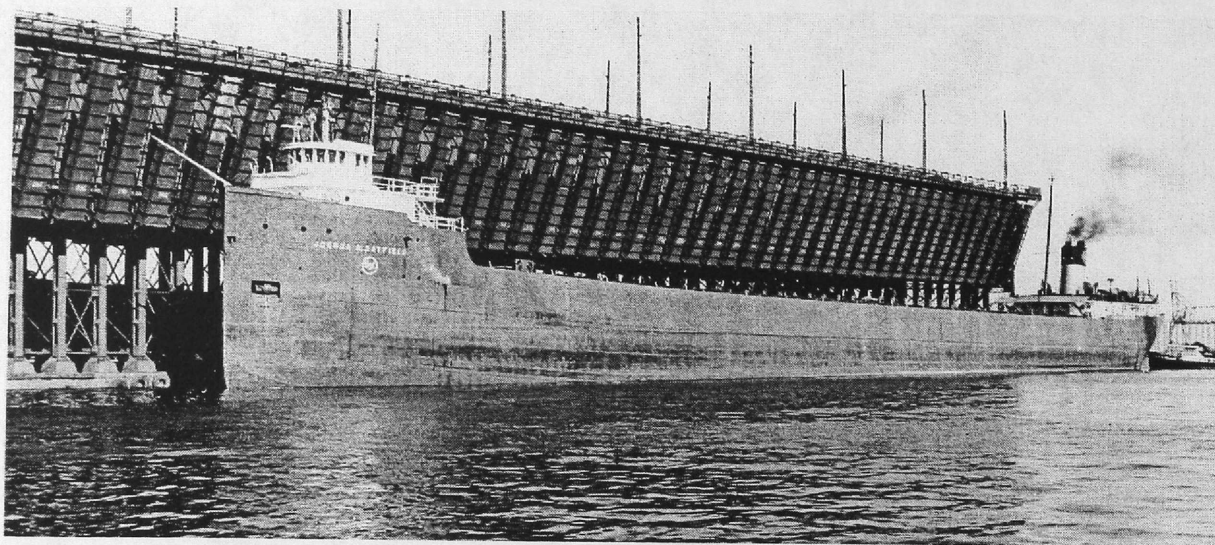
Being completely surrounded by steel surfaces, as we were, you can imagine how our shouts re-echoed. Indeed, on foggy days we were not allowed to play for fear the uproar would make it difficult for watch-standers to hear fog horns. (Of course those were in the days before electronic communications.)

To this point I have been recalling things on my first ship, the *William B. Schiller*, let's not overlook my second ship, the *Joshua A. Hatfield*, on which I completed my coal passing career the following summer (1937). She was much like the *Schiller*, although fourteen years younger, and inches bigger in major dimensions. She, too, had been built in Lorain. From my point of view she had three superior features. First, our cabin was in the deckhouse, rather than down below, so that ventilation and lighting were both improved. Second, we were shielded from those noisy steering chains; and third, the coal bunkers had hopper bottoms, so gravity moved much of the coal on our behalf.

While that third feature should be considered an improvement in design, it diminished the ship's transport efficiency. Why? Because the empty space under

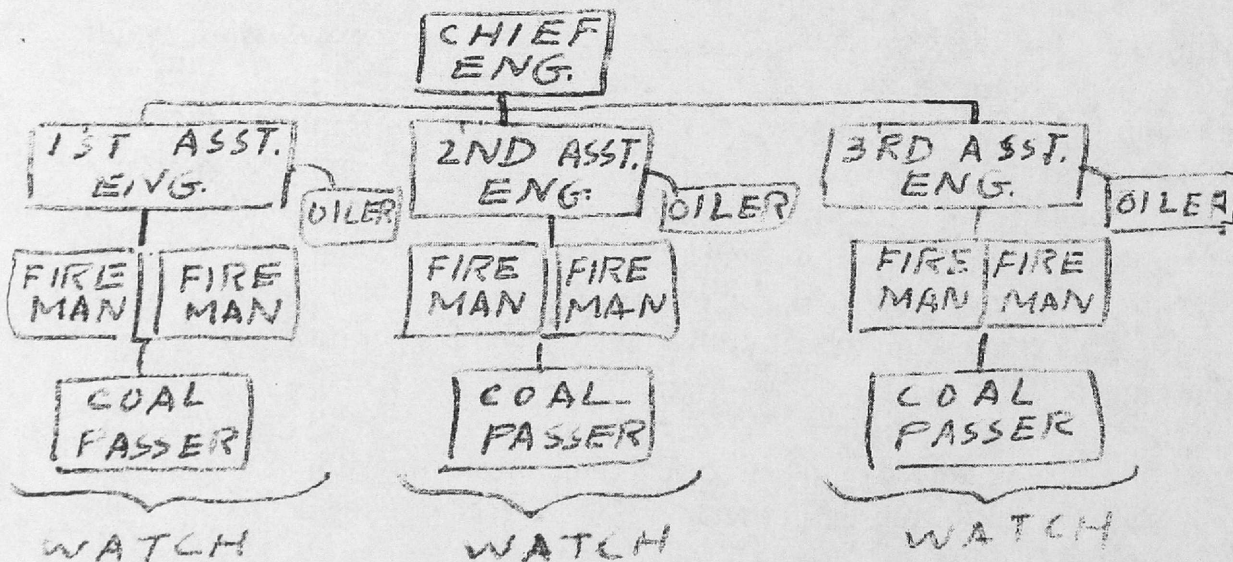
the hoppers attracted semi-useless stuff, such as stage boards, the cumulative weight of which subtracted from the cargo transport capacity.

If remember correctly, wages had gone up. On the *Hatfield* I was paid at a rate of just over \$81 per month, vs about \$75 per month on the *Schiller*.



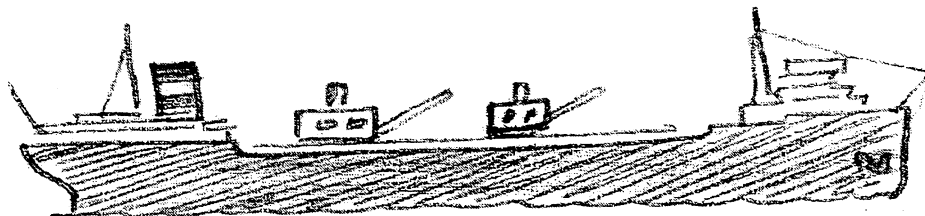
Steamer *Joshua A. Hatfield*

I made the figure below to show the organizational structure of the black gang. It shows us coal passers reporting to the firemen, but of course that was true only during the start of the watch. Actually we spent more time working with the assistant engineers. Of equal interest to me was the social structure off watch, when rank was largely ignored. I well recall that I frequently went ashore in the company of the assistant engineer, the oiler, and both firemen with whom I shared the 6 to 10 watch. I should add that I never once saw the captain or any other officer from either end of the ship wearing a uniform, or even a gold braided hat.



Speaking of skippers, on one otherwise peaceful afternoon I came close to getting into trouble with the captain of the *Hatfield*. It was like this: being anxious to supplement my education, I thought I should try steering the ship. The mate on watch at the time, being bored with his tranquil existence, listened with sympathy to my plea that I be granted a few minutes at the wheel. So I was allowed to relieve the (equally bored) wheelsman, and for a few glorious minutes I was in control of that monstrous ship. This was only made possible because the captain was at mid day meal several hundred feet away, in the after house. My moment of glory had gone on for but a few inspiring minutes, when the mate answered the phone. It was the captain, who had interrupted his meal to enquire why were failing to maintain a straight course, as evidenced by the steering engine, which was making a continual din in answer to my clumsy hand on the wheel. I was then quickly relieved of my trick at the helm. This happy/sad incident came to a close a few minutes later when the captain was seen making his way to the pilot house. The mate thereupon instructed me to sneak down the port ladder because the skipper was storming up the starboard. I am still grateful to that kind mate for saving me from a chewing out. I suppose that innocent wheelsman must have borne the brunt of the captain's ire. I'm grateful to him, too.

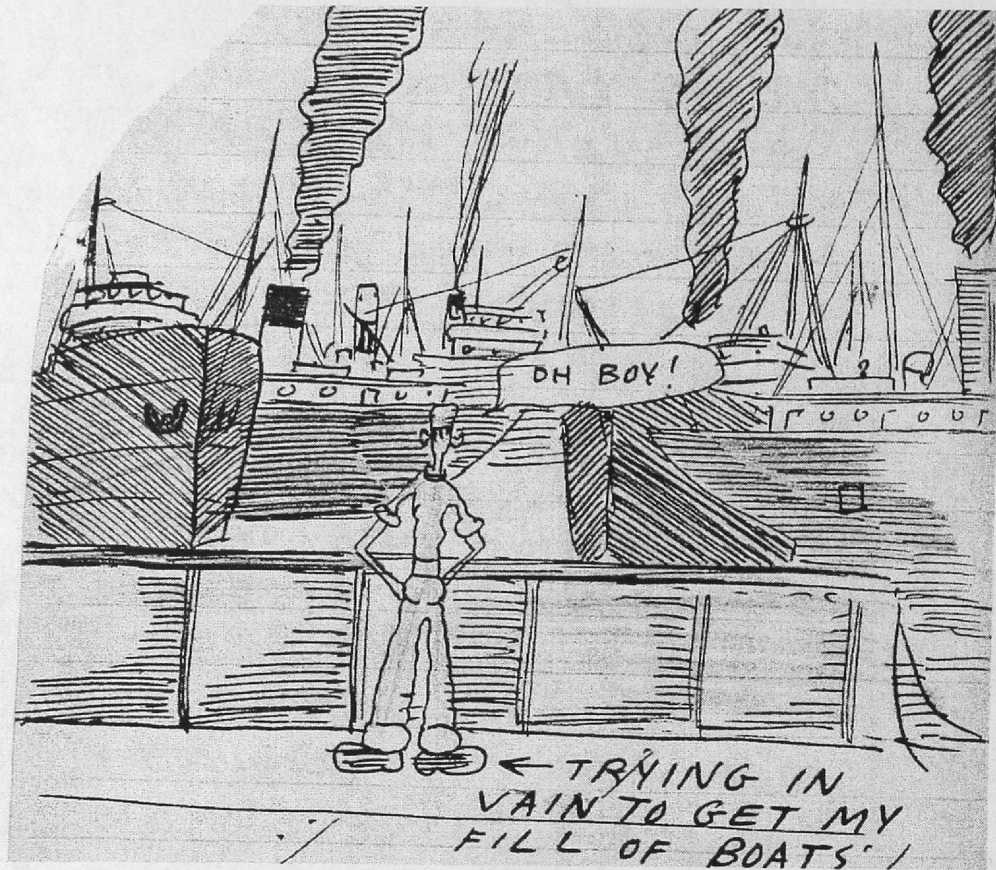
An important off-duty activity was laundering our dirty work clothes, which we did, I guess, about once a week. We had at our disposal an old oil drum, plenty of hot water, and a plunger comprising a bucket of hardened concrete in which was embedded a two-foot length of steel rod topped with a loop or hook about two inches in diameter. Into that drum of boiling hot water we would cast our dirty clothes and a suitably sliced-up cake of brown soap. Then we would acrobatically hook the looped-end of the plunger onto an appropriately reciprocating part of the main engine. With our simple mechanical system thus activating the plunger up and down about a hundred times a minute, coal dust and grease would be thoroughly defeated within an hour's time. The system did a thorough job, so thorough, indeed, that the clothes might well be turned to rags if left too long. In those politically incorrect days we referred to the clever device as "the Chinaman."



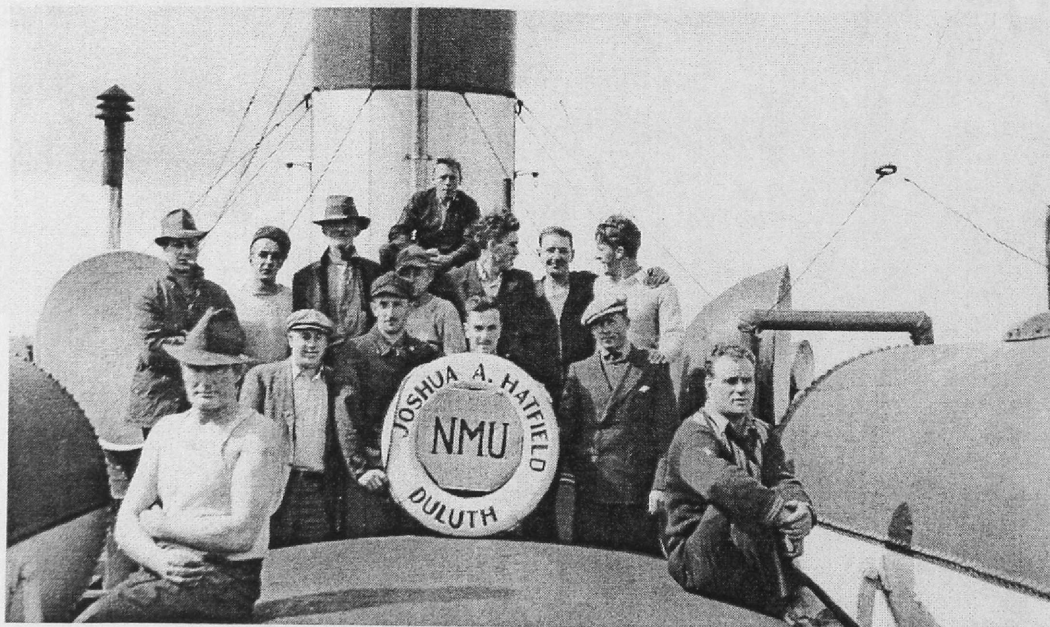
"LAGONDA"

As I review my old log I am impressed with the amount of ink I used in recording the names of other ships I happened to see. From this I infer that I was still pretty much like a farm boy thoroughly thrilled to see real live ships with my very own eyes.





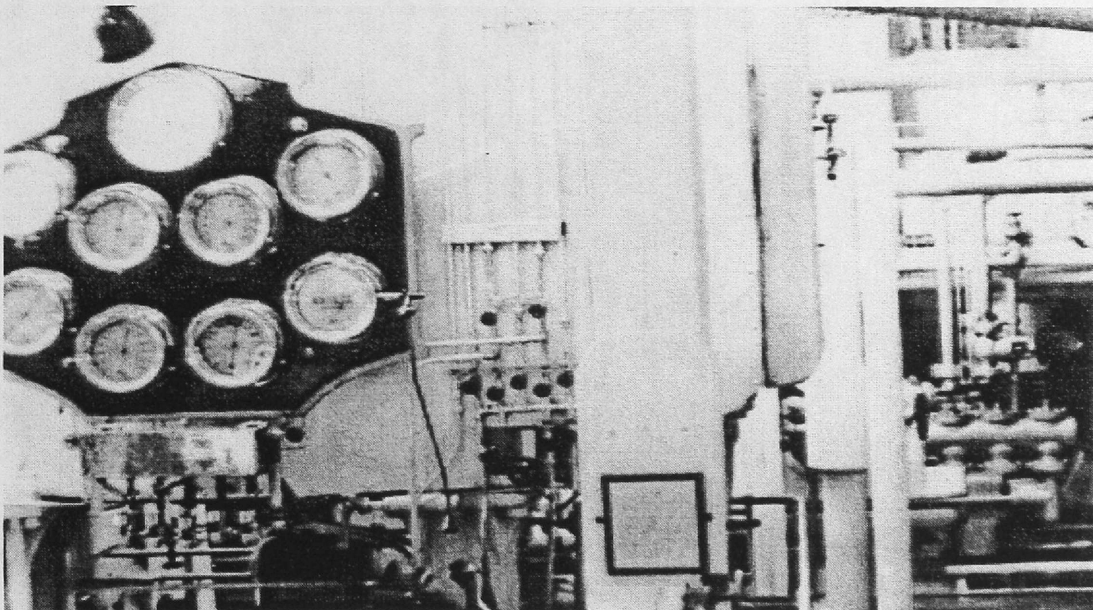
My impression is that the typical Great Lakes sailor was a former farm boy who knew all about hard work. Steeped in old fashioned courtesies, he usually showed up for duties ten or fifteen minutes ahead of schedule. On the other hand I recall a couple of "one-trippers," a pair of harmless old bums who spurned the galley coffee in favor of what they preferred to brew over a pile of live coals on the boiler room floor. They terminated their tenure as soon as they had collected enough cash to replenish their wine.



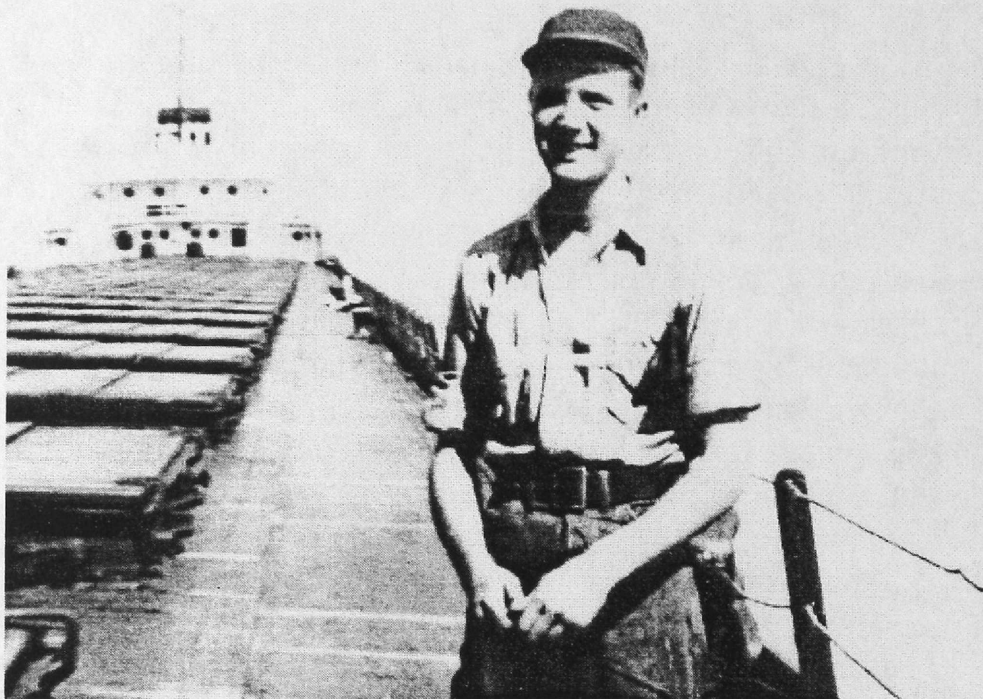
During my brief time on those two ships the National Maritime Union was starting to make itself felt. To the best of my knowledge, few of my ship mates were particularly impressed by the organizers' appeal. This was because the typical Great Lakes sailor obtained his job through family connections with the ships' officers, and felt loyalty to the organization as a result. The organizers' tactics generally involved trying to sell the workers on the view that their company's managers were greedy capitalists with whom the laboring class was at war. Although I never subscribed to the "hate your boss" philosophy, others did take that view, and unions became strong soon after I had abandoned my brief shipboard career. I suspect that the advantage of higher wages won by the unions must have been somewhat offset by the loss of satisfaction arising from reduced respect between the laborer and his employer.

**Conclusion:** I hope this paper has given you a feel for what a coal-passer's life was like seven decades ago. To me those brief round trips were a valuable complement to my formal education as a naval architect. I learned the importance of designing details for safety and ease of operation, and the benefit of making crew quarters comfortable. They also widened my exposure to laboring men and an understanding of their views on life. I was pleased to find that, despite my greatly different background, because I worked hard and affected no airs, I was readily accepted by all with whom I came in contact.

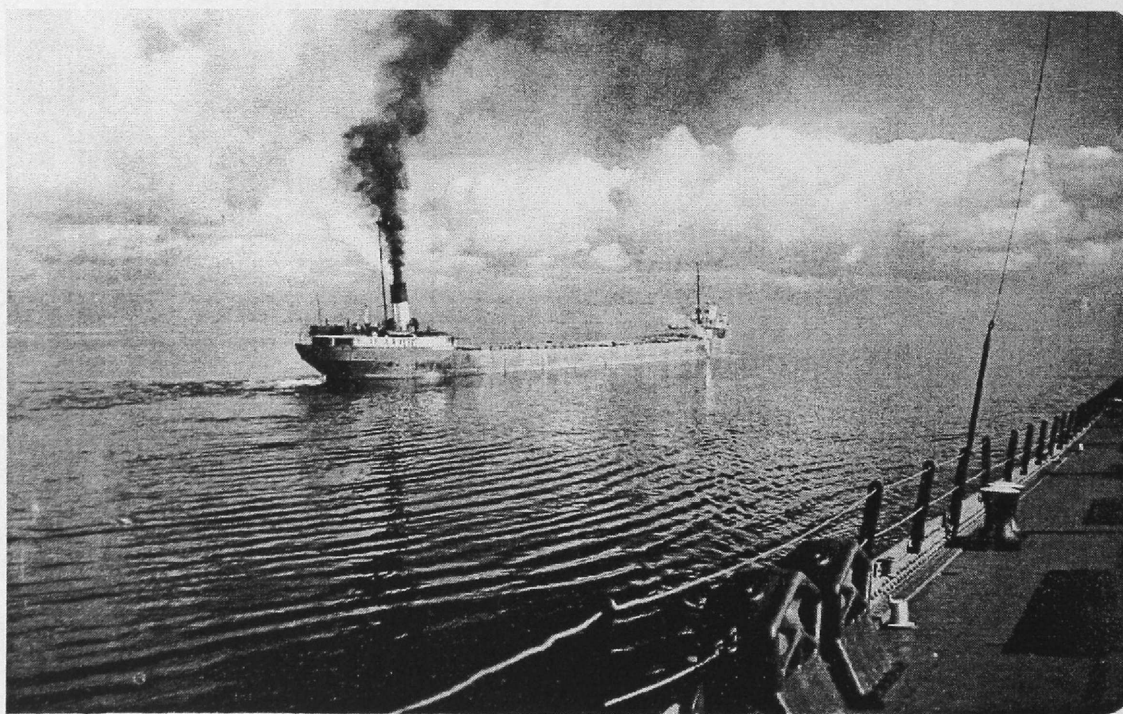
I learned that the mundane job of shoveling coal could be made interesting if one gave thought to the technique of doing it most efficiently. I also learned that, like most aspects of life, there is joy and satisfaction in doing hard, unpleasant work as long as one brings a proper attitude to the task.





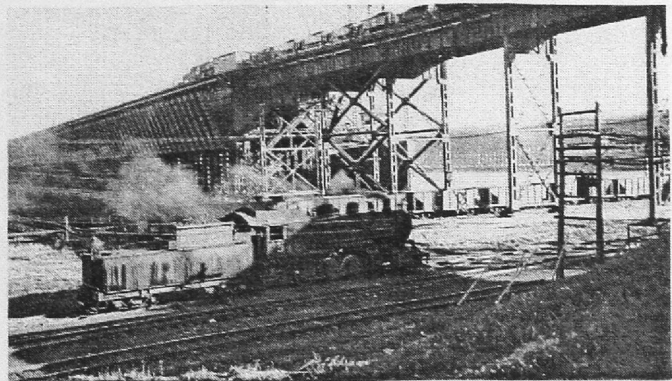
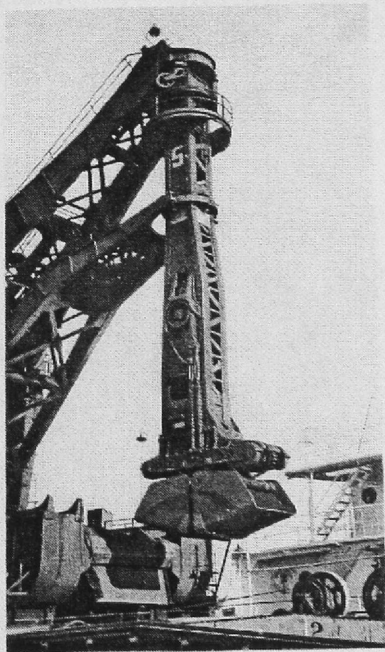
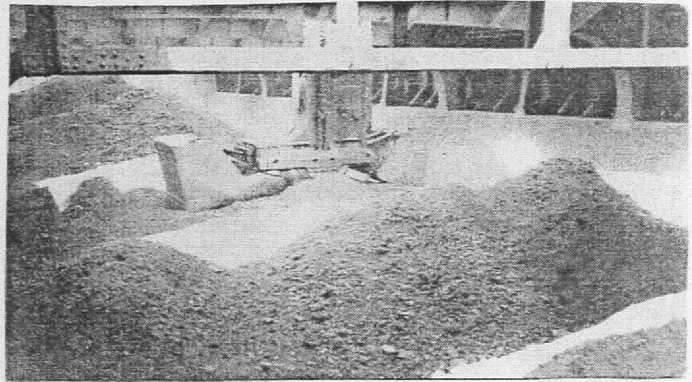
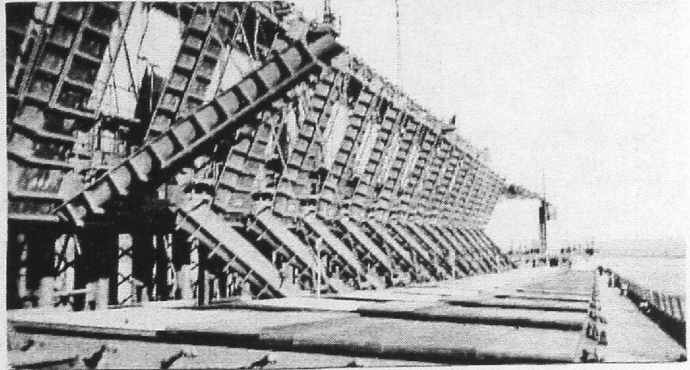
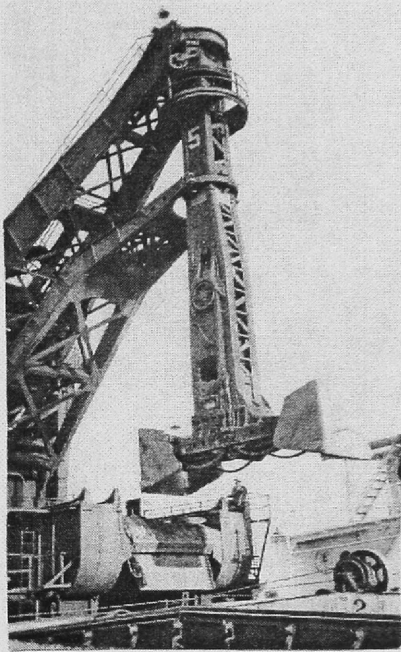


**Acknowledgements:** I am grateful to Rhonda Curtis for her skillful work in integrating the art work and written words into an attractive and easily comprehended opus. Thanks, too, to David Singer for guiding me through the mysteries of power point projection

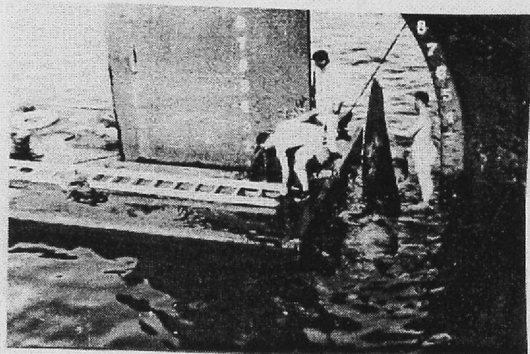
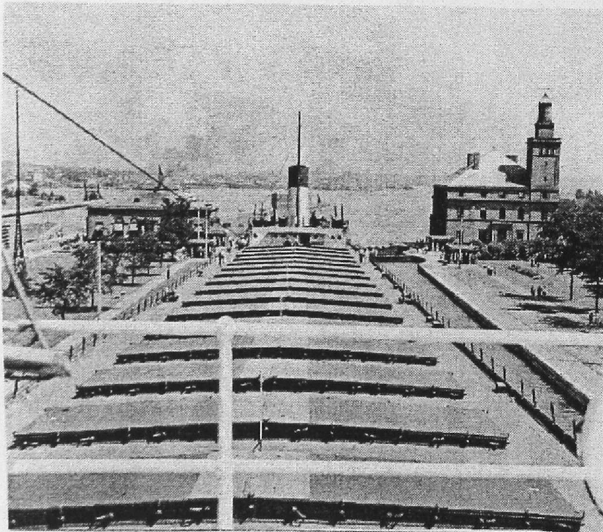
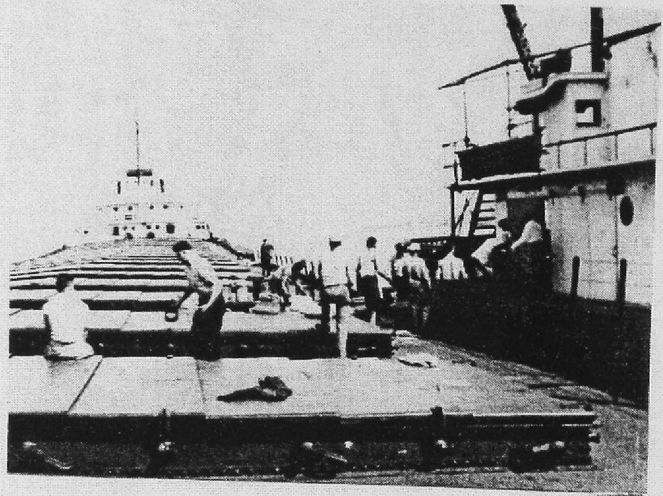
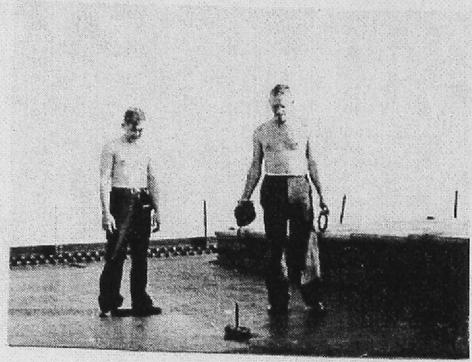
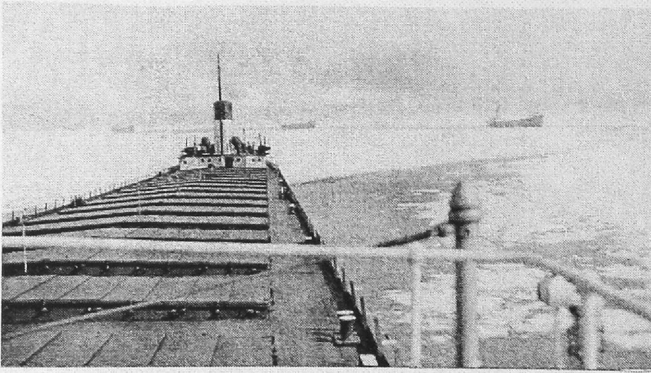




Appendix 1; Cargo Gear

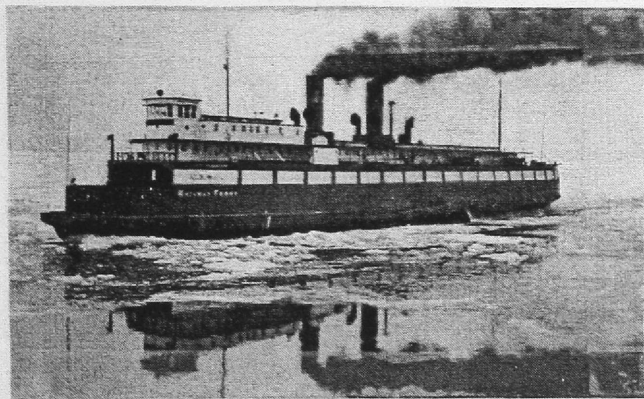
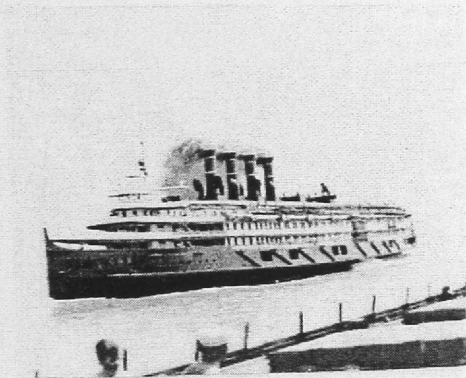
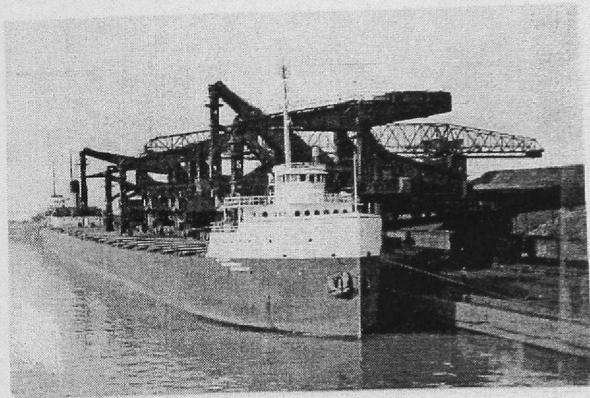
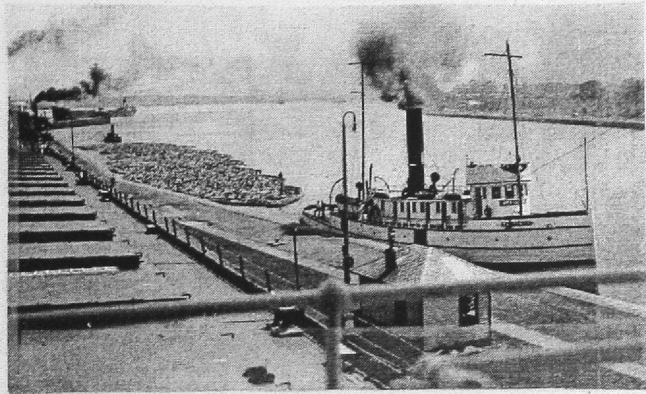
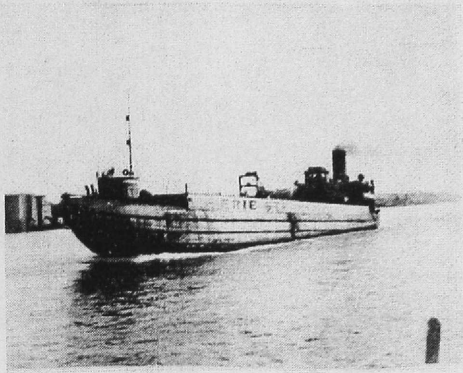


## Appendix 2: Life Aboard Ship

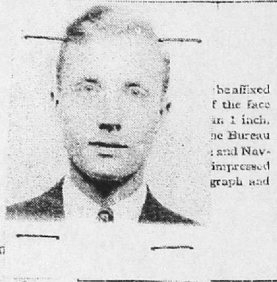




### Appendix 3: Other Ships







affixed  
of the face  
in 1 inch.  
the Bureau  
and Nav-  
inscribed  
graph and

Issued by  
Bureau of Marine Inspection  
and Navigation

CONTINUOUS DISCHARGE BOOK

STATEMENT OF NATIONALITY

OFFICER'S LICENSES

Place of birth Schenectady, N.Y.  
If naturalized—year \_\_\_\_\_  
If first papers—year \_\_\_\_\_  
If alien—date of head tax \_\_\_\_\_  
Nationality U.S.

Grade	Number

NAME OF SEAMAN, IN FULL

STATEMENT OF AGE

Harry Bell Benford 17 17

STATEMENT OF PERSONAL DESCRIPTION

Height—		Color of—		Complexion
Feet	Inches	Eyes	Hair	
<u>6</u>	<u>0</u>	<u>Blue</u>	<u>Bland</u>	<u>Fair</u>

HOME ADDRESS OF SEAMAN

1475 Bagley Pk.  
Schenectady, N.Y.

SEAMAN'S CERTIFICATES

Grade	Number
<u>O.S. 1st.</u>	<u>E128434</u>



Signature of issuing officer H.W. Gould

Title \_\_\_\_\_

Port of Cleveland, Ohio.  
Cleveland, Ohio.  
Cleveland, Ohio.

Signature of seaman Harry Bell Benford

