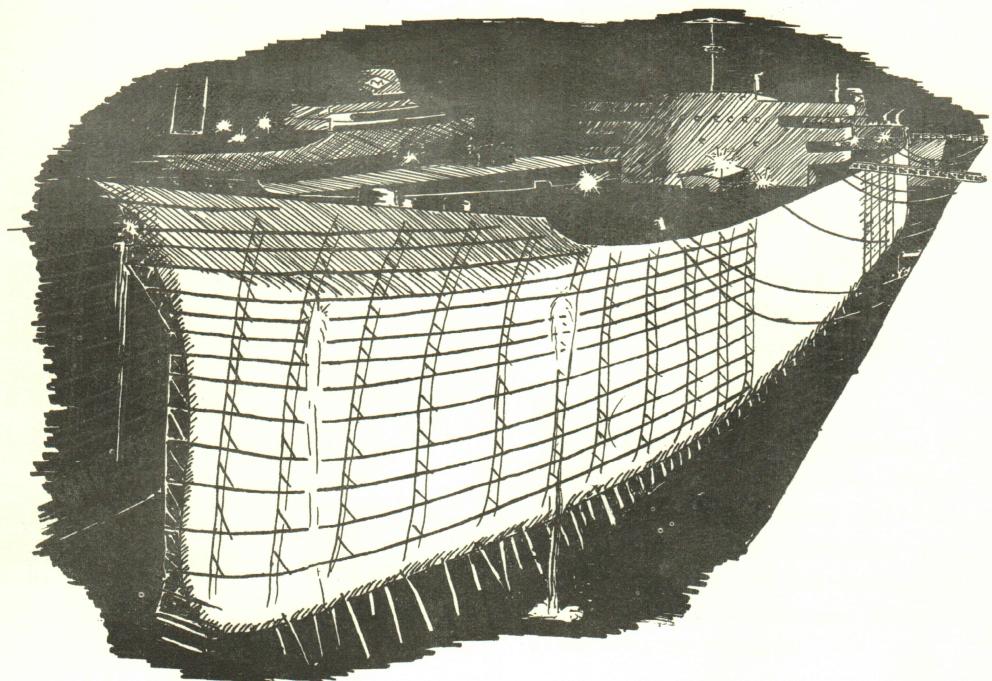


# BINNACLE

CALIFORNIA MARITIME ACADEMY SPRING 1965



SPRING 1

# BINNACLE

COLLEGE OF CHICAGO BRITISH ALUMNI ASSOCIATION

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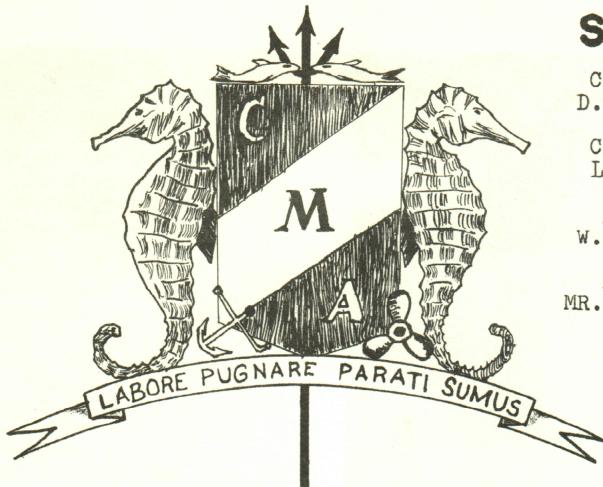
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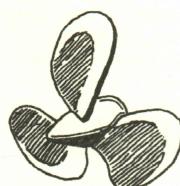
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The BINNACLE is a publication of the Corps of Midshipmen, California Maritime Academy, Vallejo, California. The opinions expressed herein are not necessarily those of the Corps, Administration, or Faculty.

Any individual wishing to express complaints, suggestions, misgivings, etc., may submit these, in letter form, to the editor for possible publication.



SUPERINTENDENT

CAPTAIN H.E. RICHTER

The following letter was received by the Superintendent a short time ago and he thought that it might be a good addition to the present issue of the BINNACLE.

Dear Sir:

As a '62 graduate of the Academy I want to express my sincerest appreciation to what I now consider to be one of the best educations a man can have. During my three years as a midshipman, I must admit, I had many doubts. Since graduation I have found that so many doors are open to a CMA graduate that these doubts were completely unfounded. I only wish I could somehow express this to any of the doubting midshipmen presently enrolled.

I am presently serving in the Navy aboard the USS ALUDRA (AF-55). She is an old C-2, ex-merchant ship converted by the Navy as a stores ship during the Korean Conflict. ALUDRA is quite a work horse spending most of her time supporting the SEVENTH FLEET. I spent the first eighteen months on board assigned to the Deck Department which, next to my three years at CMA, I will always consider the most rewarding and challenging year and a half I have ever spent. I am now being fleeted up to the Navigators billet and should relieve the present Navigator on our return from WESTPAC in June. Even though I wasn't the most outstanding midshipman navigator in my class I know I will not have any difficulty in handling the new assignment.

I have just received word from my parents that my brother is attempting to follow in my foot steps. He has evidently already taken the entrance examination for admission. I know he will make an outstanding midshipman and far exceed his brother's academic record. He has one big advantage over me and that is he has served 3-1/2 years on active duty in the Navy. He spent his entire tour on the USS COLLETT (DD-730) permanently stationed with the SEVENTH FLEET. The Navy has done much to mature him and make him realize he must work for what he wants. It has greatly pleased me to hear he chose my Alma Mater as the college to further his education.

If there is any way I can help convince any of the doubtful midshipmen of what it really means and the opportunities available to a CMA graduate please do not hesitate to have them contact me.

Sincerely,  
Alan J. McClenaghan  
LTjg USNR  
USS ALUDRA (AF-55)

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## TO MAKE YOU SEE

The sense of sight is one of the most important possessions with which a person may be endowed although the use of this sense to its fullest capabilities is something which appears to be lacking in many individuals. The ability to see and to have a feeling for that which is going on in the world is truly a great thing, but the act of seeing does not necessarily entail a coordinate feeling of compassion for what is seen. There are many people who go through life completely unaware of their surroundings and of their fellow human beings. It is indeed a fortunate person who possesses the ability to see where others are blind and to feel where others are cold. EDITOR

It was on a grey cold afternoon in Hong Kong that I experienced an event which left an impression on my mind that will not be easily erased. A friend and I left the ship about one o'clock, full of vigorous determination that we would visit various parts of the city which were seldom seen by Caucasians firsthand. We disembarked from the launch and pushed and shoved our way aboard a crowded double-decked railway tram. Being unable to find seats, of course, we accommodated ourselves on foot while hanging on to curious little straps which were attached to the roof of the tram. As we jostled along, trying to keep our hats on and maintain our balance at the same time, the panorama that rushed by outside

changed remarkably. Small shops of every description seemed to alter their way of doing business as we progressed further. The bartering and sales were transferred from dark interiors to the sidewalks and streets outside the various shops. The throngs of people who milled about outside also changed, becoming more oppressive in number and less scrupulous in attire as we moved on. With the spirit of adventure instilled in our hearts, we left the tram at the end of the line and entered upon the strange and wonderful world that was Hong Kong.

As mysterious smells filled our nostrils and inarticulate chatter played tricks on our ears, we passed through street after street. Stopping along the way, we examined octupuses for sale and took pictures of a mother with her child slung over her back. It was difficult to absorb and believe the filthy squalor which surrounded us. Houses made of cardboard and corrugated metal sheets merely sheltered their occupants from the rain....nothing more. Open sewers were lined with dwellings that housed an entire family in a single room. Everywhere children played in the hardened dirt paths that led to the hovels in which their families dwelt. In our wanderings, we, quite by accident, came across a large white structure, bordering on the slums, in which a number of youngsters played games in an enclosed court. It was a school.

The school, ironically enough, was a modern and spacious building. We finally convinced a nervous teacher who stalked us through the halls that we were not government inspectors. She heaved a sigh of relief and took us smiling from classroom to classroom in each of which forty pairs of eyes greeted us and followed our every movement. The

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simple beauty of the artwork that covered the walls and the well-mannered obedient way in which the children conducted themselves were amazing. After bidding farewell to the teachers and students, we started to make our way back to the tram station.

As we walked along in the growing darkness, I saw something which opened my heart as well as my eyes. There, sprawled in the gutter alongside the street, was a woman of about twenty-five years. She was shoeless and attired in the clothing of a man. Her entire person reeked with stench and was black with dirt. The long black hair that fell over her shoulders trailed in the gutter swill and was matted with mud and filth. As I passed by, she looked up and our eyes met. In those eyes I saw such a complete and utter look of despair and sadness that I quickly turned away and shivered with an imaginary chill. I wanted to help. I wanted to go back. I wanted to do something, but I kept walking. Throughout the remainder of the cruise I became aware that those eyes could be found in any port I visited. It took only those few seconds in the gaze of a poor, helpless woman, through eyes laden with hunger and pain, to cheapen my comfortable self-centered world and to broaden the horizon of my sense of brotherhood.

## HIGHLINE

Well, already we are half way through the last trimester. Everyone should by now be digging into the textbooks and reviewing for thirds.

It was only a short time ago that we left Vallejo; thirds then seemed a distant reality. We started cruise with some ap-

prehension. We were expected to know most of the answers. For instance, just what is the exact procedure for blowing tubes? How do you work out LHA of Aries for east longitude? Even a few silent prayers were given. "Please, God, don't let me spill any oil." Daily the familiar question, "Has anyone seen Aguilar's noon position?" could be heard. These were the familiar thoughts and questions during the first few weeks of cruise.

We soon fell into the same old familiar cruise routine which was brightened only by Don's night lunch, Sunday, and of course, liberty. I think everyone will agree that we had exceptionally good liberty ports, except maybe Sundfors and Curry. Kawika and Stanley had a chance to spend some time at home while the ship was in Hawaii. Pooh fell in love in Manila. Old Fat Andy rode up and down elevators in Hong Kong. Mocium, Phillips, Duke, and Mitchell dunned the Hong Kong Police Department and spent a "pleasant" afternoon at the Communist Border at Lo Wo. Fugi and Froude almost bought out Hong Kong, except they ran out of money. Pooh fell in love again while playing his guitar with Kawika accompanying him on trumpet at the New Tokyo Bar in Hong Kong. Drahos hob-knobbed around Yokohama with his long time Japanese pen pal. Puppy stayed aboard and wrote letters to Donna. And, believe it or not, Pooh fell in love again in Yokohama!

"Finished with engines," so ended the last cruise aboard the Golden Bear for the class of '65. On our next cruise we shall be shipping as mates and engineers. ....GOOD LUCK ON THIRDS.

## SECOND CLASS

The second class is now better than halfway through the course of instruction given at the Academy, and, with this in mind, it was suggested by one of the officers, (Mr. Peterson), that a second class opinion poll would be an interesting topic for the BINNACLE. Mr. Peterson's suggestion was readily accepted, and the results appear below. The poll was taken approximately one week before arrival in San Francisco.

### ACADEMICALLY SPEAKING:

Q. Do you think that the curriculum at the base is adequate, too easy, or too difficult? In your opinion are some subjects weighted too heavily while others are slighted?

A. The majority felt that the curriculum was adequate for the school's main purpose-training men to be merchant marine officers-but there were many reservations and qualifications in this answer. Over fifty per cent of those polled thought that more attention should be given to marine engineering and nautical science classes during the third class year, so that the third classmen could decide at an early date whether or not he was really suited for a sea-going career. A majority of the engineers felt that physics and chemistry classes were not too beneficial without accompanying lab courses. Many engineers also felt that more time should be allotted for the auxiliary machinery course, while the deckies felt that more navigation at an earlier level would be beneficial.

No one thought that the curriculum was too stiff, and a few would like it to be more difficult.

Q. Are you satisfied with your performance at the halfway mark?

A. This question brought a fifty - fifty split, with half of the second class satisfied and half dissatisfied. It's interesting to note that those who were dissatisfied with themselves had few plans for future improvement and were apathetic on the whole towards suggestions of doing better this trimester. One well known and extremely outspoken deckie replied thusly: "All I want is my license. I put out either a maximum or a minimum effort in order to pass every course. All I want out of this place is my license!"

### REGARDING CRUISE

Q. If your funds had been the same for each port, (say, fifty dollars), which one would you have enjoyed the most?

A. As could be expected, it was a toss-up between Hong Kong and Yokohama, with a few stalwart souls voting on Manila.

Q. If the choice were yours to make, would you prefer to visit a few out of the way places on next year's cruise (e.g., unpopulated tropical islands) as well as the larger, more metropolitan ports?

A. Nearly one hundred per cent of those polled responded "yes" after thinking of the advantages to be gained in visiting out of the way spots. A spirit of adventure spearheaded this reaction, (which should disgruntle those elders who expound vociferously on "soft and security - conscious American youth"). Many had comments regarding the opportunities for skin diving, swimming, exploring, etc., and there were also those individuals who wanted only to see places few others would ever see, even in this constantly shrinking world. Naturally, economy was also a reason for going to unpopulated areas, but it was only coincidental to the aforementioned reasons.

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Q. Do you feel that "formal" classes on practical marine engineering should be held on cruise or is informal instruction and individual effort sufficient?

A. Approximately twenty-five per cent thought that a few classes on the operating principles of steam turbines and associated electrical propulsion machinery would be very helpful. The majority, however, thought that individual effort was sufficient and that those persons who put out minimal effort were only cheating themselves.

DECKIES ONLY:

Q. Do you feel that more time should be spent on cruise learning navigation or should more time be spent learning the manual side of seamanship, i.e., rigging, knot tying, blinkers, signal flags, etc.?

A. Seventy five per cent felt that more attention should be spent on navigation, while still maintaining the various "manual" classes at their present level.

DECKIES AND ENGINEERS:

Q. What did you do with the majority of your free time while at sea?

A. Reading, playing cards, and sleeping won first, second, and third places respectively for off-watch activities on cruise. This response seemed slightly hypocritical when contrasted with some of the more studious (and perhaps not so honest) replies received on the academic questions, for surely at least a portion of the available free time could be spent in a more productive manner than the response to the above question indicated.

## SWABCALL

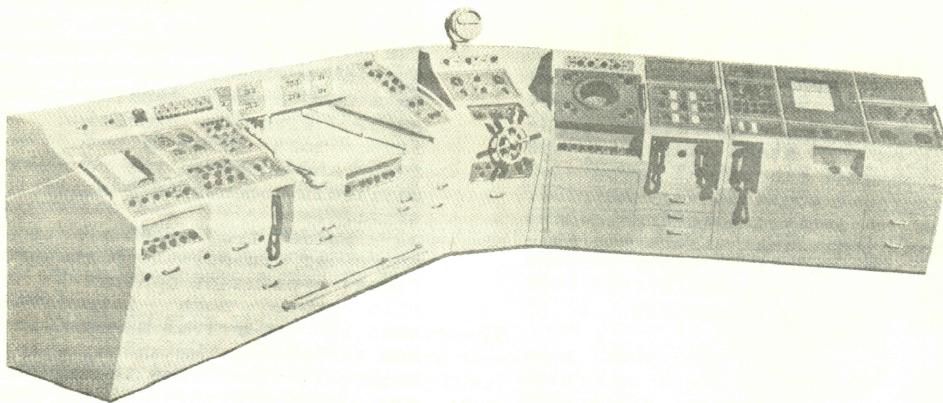
The third class returned from cruise with a little more self-confidence and seamanship

ability than was evident at departure. The daily routine of "clean sweepdown fore and aft..," watches, turn-to, and close living put everyone to the test. The pipe "C.C.'s to the messdeck" brought engineers and deck hands to a common understanding of the swab. With the exception of five, most of us withstood the test and accepted the rough and difficult moments as a condition of life.

Aside from the practical angle of cruise, the ports provided a pleasant contrast. Manila proved more interesting than the pre-arrival speculations had warranted. The shops, entertainment, the tour to Tagatay, and our counterparts at the Philippine Merchant Marine Academy, will always be remembered for what they offered of Philippine life. The British Crown Colony of Hong Kong was colorful in everything from shopping to ship's operations. The later due to Mary Soo's girls. Most of the third class came away from Hong Kong satisfied with the port's merchants, although several of us found that it can be difficult to account for all of those dollars spent, in spite of low prices. The general consensus of Japan was expressed in the enjoyment found there by the whole corps. One of the most impressive effects of Japan was her hospitality. Even though the Japanese seemed partial toward keeping their street signs, it appeared that they were really interested in seeing that we enjoyed ourselves.

In retrospect, the ports proved to be as essential to us as a safety valve to a boiler. Yet, in spite of the romantic moments, we learned that a seaman takes care of his duties, no matter what his personal opinion of the job may be.

## AUTOMATION



INTEGRATED BRIDGE CONSOLE, DEVELOPED BY SPERRY-PIEDMONT

Automation, a subject hotly contested between ship operators and maritime labor leaders at this crucial period of time for the American merchant marine, is the result of mankind's age old experience with the sea as a means of transportation meeting head on with the technological developments of recent years. The subject of automation which is still in its infancy and yet promising to become more expansive with time, is a field necessarily encompassing many different and diversified areas ranging from the delicate problems of labor-management relations to the newly organized areas ascribed by reliability engineering. The aspects under which automation is employed are many: reduction of man-hours through containerization; control of bridge functions through the aid of computers and other electronic apparatus; control of engine room functions through computers from the bridge.

To the average working man on a ship or ashore, automation has come to mean the reduction of jobs, perhaps his. The ever

prominent labor leaders who are perhaps fearful of losing their grip on the unions will not let the "little man" forget the fact that automation could take his job next. To the ship owners, on the other hand, automation means an increase in efficiency and a resultant increase in profits. Whether or not these increased profits can be put to use through an increase in shipping and in jobs depends upon the restrictions or conditions imposed by the government and by labor unions concerning the use of automated features.

A sound instrumentation and control system is the main basis for more efficient machinery control and a reduction in engine room personnel, and basically, the two areas of endeavor encompassed are: simplified engine room arrangement and/or more extensive instrumentation and control. Since the majority of equipment necessary for all phases of automation has been or is being developed, it is only necessary to evaluate each operation for economical feasibility. Although a number of ships now

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sailing claim automation, it has been found, and can readily be seen, that their "automation" consists solely of wheel house control of the engines and a glass - enclosed control room. While operating with reduced crews, it is apparent that the ship could operate quite successfully without "automation" with a reduced crew. In the final analysis, the main reason for a large engine room crew is simply repair and maintenance work which, with the advent of reliability engineering, could reduce the crew in numbers without seriously impairing the ability of the ship to operate. With this problem in mind, it can easily be seen that the computerization of the engine room cannot and does not completely alleviate the problems remaining when intergrated with present machinery.

Despite the promise of reliability engineering, the first economical automation was in the field of cargo handling, namely, the containerization of coastwise commerce. A number of United States shipping firms, following the lead of Matson Navigation Company and Sea-Land, have projected containers in this specific area. Foreign trade container service is plagued with the problems of non-standardization, stowage, and handling. Almost every shipping company has one sort of container or another, but they are invariably constructed to different specifications and are carried in standard general-cargo vessels. The low volume of usage makes the stowing and handling of these containers little different from that employed with general break-bulk cargo. However, in the coastwise trade, the conversion of two major companies to containers in all respects has proved favorable. Matson and Sea-Land, having con-

verted vessels to containers-only, employing standardized containers, and utilized special cargo gear, have made impressive headway in this field. This can best be demonstrated by the fact that both companies have roughly doubled their earnings in the last year.

Matson Navigation Company, carrying their automation program further, has plans for a 300-foot semi-automated container vessel. This vessel will be used by Matson in extending its interisland service from major island ports. The 2,900 gross ton, 1,600 horsepower ship will carry a 25-ton capacity gantry crane to handle 156 dry and refrigerated cargo containers. The new vessel, operating at 11 knots, will be able to carry 800 tons of liquid cargo. Costing over \$2,000,000, the vessel will initially carry a crew of six; however, this crew size will be reduced to three or four if the automated equipment is satisfactoraly demonstrated to the Coast Guard during the actual operation of the vessel. With the exception of the gantry crane, all machinery and equipment can be operated automatically or by remote control. Incorporating special mooring devices and dock fittings with a bow thruster, it will be possible for one man to dock and secure the vessel without the aid of tugs or line handlers. Matson intends to study the knowledge gained from the operation of the interisland vessel with the possibility of application to the automation of their freighter fleet. However, several problems in the labor - management field remain yet to be circumvented with the result that Matson does not intend to build the vessel "unless there is a satisfactory understanding with the appropriate unions in its manning, as presently planned and

approved by the Coast Guard." It is quite likely that the construction of this vessel will not take place for several years due to labor union demands.

A significant advance in automatic boiler and burner control has enabled a United States steamship, the WILLIAM G. MATHER, a Great Lakes carrier operated by Cleveland-Cliffs, to receive a United States Coast Guard certificate to permit operation without a fireman. Two-element, wide-range combustion control, and feedwater control constitutes the boiler control system on the MATHER with burners monitored and operated through a Bailey-760 Burner Control System. One-man supervision of the power plant is attained with the operator-oriented control console, and the system will automatically correct any burner fault likely to result in a hazardous situation such as fires going out while fuel is flowing in. The need for repair of the electronic circuitry is eliminated through the modular construction of the system. With spare modules carried aboard ship, faults can be quickly identified and a replacement module inserted in minutes. With automatic pressure, temperature, and level regulating devices controlling those plant conditions which would normally require the constant or immediate attention of the operator, the only manual valve adjustment, during all phases of operation, manuvering included, is the turbine throttle. Therefore, this type of automation is reliable and relatively inexpensive with speed of operation and predetermined sequence ability a desirable factor for plant safety and stability. The biggest advantage resulting from boiler automation is the safeguard against furnace explosions at start-up and during normal firing if loss of ig-

nition occurs at one or more burners. Burners are automatically lit-off and secured as a function of the load by the Bailey 760 computer-logic control system, but manual lighting-off and securing is also possible at the watch engineer's discretion. Lighters, dampers, fuel valves, air registers, etc. are operated in the normal start-up and shutdown cycles in a sequence established by a pre-determined program which also provides immediate and proper action in the event of an abnormal condition in any phase of burner operation. The need for cleaning burners, with at least one month between periodic cleanings, is reduced due to steam atomization.

It is not necessary for one to possess an advanced degree in economics to realize that the spiraling costs of crews are seriously handicapping United States shipowners in the nationally important struggle for survival. The losing battle of the unsubsidized merchant fleet is clearly pointed up in the Great Lakes and the Gulf-East Coast oil trade. Not only do the higher costs of the maritime industry impose a burden on other dependent United States industries, but the United States citizens are obligated to pay higher prices and higher taxes. Although shipboard labor cost is not at fault alone, it is predominantly increasing the cost. Indeed, the situation, after further investigation, is much worse than is first thought. Admittedly, crew members wages are higher than wages for a similar position ashore, but less obvious items of crew costs must also be considered. Hidden costs are such items as food, annual cost of investments in accomodations, cleaning and painting supplies, protection and indemnity insurance, hotel service fuel, shipyard maintenance of accomoda-

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tions, hull and material insurance on accommodations, laundry, linen, dishes, medical expenses, repartition and overhead. Therefore, the hidden costs, in addition to direct wages, elevate unlicensed crew costs to about three times as high as one would at first think. Automation by itself will not achieve much good. Full intergration with other radical innovations will be necessary to reduce costs in conjunction with automation. The following technological and operational innovations must be fully considered: 1. Shipboard maintenance, in which half of the crew is routinely engaged, results in a seaman's wages being twice as high as a shoreside man doing the same work. Although the seaman's work will not result in delaying the ship, his work is limited to certain areas while underway. Since the ship must be hauled out for bottom work at certain intervals, it would be much more efficient to accomplish topside work at the same time, and the shoreside man's production is multiplied through mechanization. Therefore, maintenance by seamen could be confined to emergency repairs and general housekeeping. 2. The need to reduce the amount of maintenance is also required. This requirement can be met through better design and greater use of readily available corrosion-resisting products and protective coatings. 3. In the engine room, the number of components and the need for frequent adjustments by hand should be reduced to a minimum. Since galley manning requirements are a direct function of the number of men in the crew, a successful reduction of men in other departments will be reflected by the elimination of men in the steward's department. Automation aboard ships will undoubtably fail if the ship is taken as it

is and automated gadgetry is added to every mechanism already aboard. The propulsion plant should be selected with regard to low initial cost, simplicity, reliability, and operating economy. Careful arrangement of living and working areas can also add to the reduction of costs through automation. In the ultimate analysis, if a small number of men can operate a tug and barge with the same capacity as a ship, why cannot the same number of men operate the ship?

Longshore labor-management relationships also enter into the total cost of automation. Of singular interest in illustration is the Mechanization Fund Agreement negotiated between Matson Navigation Company and the International Longshoremen's and Warehousemen's Union. This agreement provides for the annual payment of \$5,000,000 for a period of five years by management into a special labor fund utilized by the union to accelerate retirement, increase retirement benefits, and otherwise provide further security for longshoremen who have been displaced by mechanization and modernization of the longshore labor system. There is no mention in the agreement, however, of the wasted man-hours which are generated by the operation of the archaic longshore working methods. In return for this bribe, the shipping company is permitted to install labor saving systems, new machinery, and equipment without regard to previous outdated work rules or labor practices. The labor unions, however cognizant of the fact they may be, take no interest in the fact that with automation, the maritime industry will very likely increase its productivity and size thus generating additional jobs for the longshoremen. By requiring payment for automation, the addi-

tional profits resulting from the savings in cost cannot be returned to the industry. Thus, the long time benefit is nonexistent. By far a better policy would be when a company installs labor-saving devices, it agrees to absorb the displaced workers in other jobs. The company would thus realize the saving from new equipment over a period of time, as normal attrition reduces the labor force. However, no matter how willing the company may be to adopt this measure, it can only do so with the co-operation of an enlightened labor union--a labor union dedicated not to fighting the machine, but to fighting for the protection of the people! Such a union must be fully aware that the well-being of its members is necessarily linked with the well-being of their employers. Through this realization, and only through this realization, will automation and the labor union find the track to success together.

Automation of the bridge functions, although necessarily limited in scope, has made significant advances. The radar data computer, a result of Goodyear Aircraft Corporation research, is designed to operate in conjunction with the ship's standard radar system. Offering audible and visual warnings of collision courses and forecasting both the relative and true courses of other ships thirty minutes prior to Closest Point of Approach, the watch officer is advised of the necessary evasive action for maneuvering out of potentially dangerous approaches with other vessels. Norden Division of United Aircraft Corporation has designed a course computer and steering system which is capable of dead reckoning to estimate the present position of the ship. It can compute bearings between two points

up to 1,000 miles distance. Centered around an electronic automatic pilot, the steering system constantly maintains the ship on its course to a pre-set destination. The system continually estimates position, distance to reach the ship's destination, and the time necessary to reach the destination. The system possesses the advantage of making hull and draft corrections, a built-in capability of converting for gyro-error, and computation of set and drift. A bridge control system console providing for improved and consolidated methods of steering, position plotting, navigation communication, radar and ship condition has been developed by the Sperry-Piedmont Company. This system is capable of determining the effects of weather and sea upon the ship and its projected course, provides a means of determining the effects of sea forces on the ship and cargo, can determine the stability of the ship, and improve the means of surveillance and communications with other ships and within the ship. Although it is evident that progress is being made in the area of bridge automation, there obviously remains quite a bit of work to be accomplished before the automation of the bridge will reach a degree similar to that of the engine room, for the nature of the work is such that it cannot be easily automated.

One of two examples of automation in United States shipping is the "Constellation Class" series of cargo vessels being built for Moore-McCormack Lines of New York by Ingalls Shipbuilding Division of Litton Industries, Pascagoula, Mississippi. Three of the anticipated six vessels, the MORMACLYNX, MORMACARGO, and MORMACVEGA, have been completed. Each of these 12,000 dwt. vessels cost approximately \$10,000,000, and they are claimed

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to be the fastest cargo ships in the world by the United States Maritime Administration. Wave pile-up is reduced, water resistance is lessened, and increased speed with decreased fuel consumption is obtained with a bulbous bow. Engines, refrigeration equipment, pumps, and steam boilers all feature electric control. For handling cargo, there are six holds, with three of the holds having multiple hatch openings, with no obstructions, thereby allowing cargo to be stowed directly beneath the cargo handling gear. Heavy cargo can be handled at hatches three and four by a 75-ton Stuelken heavy lift boom. Sensitive cargo needing controlled temperatures is accommodated in an air-conditioned area amidships. There is 40,000 cubic feet of refrigerated cargo space and plastic lined, heated deep tanks for bulk liquid cargo. 20,000 gallons of fresh water per day is produced by the distilling plant. Each crew member will have a single room, air-conditioned and with semi-private bath while officers will be accommodated in private staterooms with bath. Better than 24 knots of speed will make these vessels among the fastest cargoliners afloat today. The safety-standards of the United States, the highest in the world, provide for such safety features as self bailing, self-righting plastic lifeboats; the newest and most modern navigation equipment including improved radar, loran, radio direction finder, and VHF radio telephone; thorough and wide-range alarm and monitor systems. Electronically controlled from the bridge, the engine room features high efficiency top-fired boilers of compact construction in an improved engine room layout. Stack gasses are exhausted through two tall kingposts abaft the midships

house.

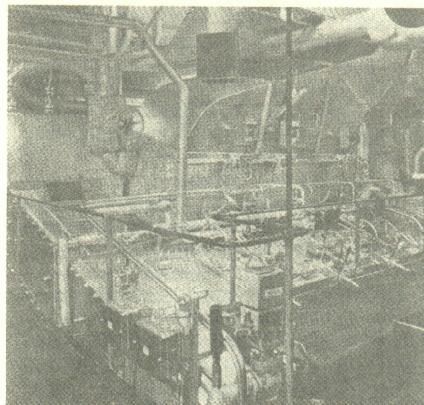
The first of five "Challenger II" class cargo vessels, the AMERICAN RACER, is a 544 foot highly automated vessel built for United States Lines by Sun Shipbuilding and Dry Dock Company, Chester, Pennsylvania. The five, 13,300 ton vessels, costing a total of \$52,950,000, may be controlled by one or two officers from the bridge. The engine room console, center of the cargoliner's automation system, provides remote control of the engines, boilers, and various auxiliary equipment, in addition to recording and monitoring temperatures and pressures of operating equipment and the conditions of its operation. The data-logger, automatically recording information concerning operating conditions, preserves a printed record for future reference and comparison while supplementing the visual data of the console dials. Thus, the watch engineer is constantly presented with complete and up-to-the minute information concerning the operating status of the plant. The watch officer on the bridge, at his discretion, may use direct throttle control or the conventional engine order telegraph. If, in the event that a given section of the engine room is malfunctioning, a series of checks and balances designed into the complex automation system will activate apparatus for the purpose of warning both bridge and engine room personnel. A crew reduction of up to 25% is estimated as a result of the engine room control system. The new class of cargoliners will have six holds equipped with quick-opening hydraulic hatch covers with the two center hatches served by a Newport News 70-ton heavy lift boom. A steam turbine, rated at 18,750 shp will propel the vessel at a cruising speed of 21

knots.

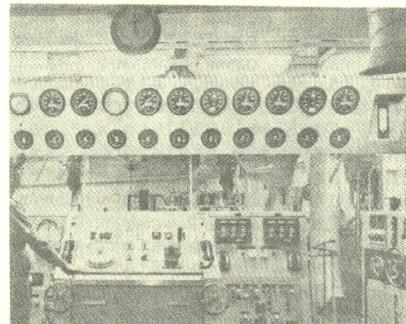
Moore-McCormack Lines and United States Lines, in vying for the lead in maritime automation in the United States, have brought to the forefront the problems of manning scales in conjunction with automated ships. While the scales now in effect are a compromise of company/union manning scales, with time and experience, the scales will most likely be reduced to the advantage of the company. It may be simply stated that the problems of automation, in the final analysis, dwell in obtaining the consent of the unions to manning scales which are compatible with the technological possibilities of automation.

Looking into the future, it can be seen that the future mariner will need several skills in order to effectively carry out his job on an automated vessel. This need has already been foreseen, and a special training school has been set up under the auspices of the American Merchant Marine Institute, the National Maritime Union, the Department of Labor, and the Maritime Administration. The sole purpose of this school is to train men for jobs aboard ships that did not exist ten years ago. The trainees will complete the school as either deck-engine mechanics or enginemen to be assigned to automated cargo vessels that will soon be delivered to Moore-McCormack Lines, United States Lines, Lykes Brothers Steamship Company, and Gulf and South American Steamship Company. The deck-engine position will require personnel with prior experience as an electrician, junior engineer, oiler, and plumber; the engineman will need past experience as fireman, oiler, and engine utility worker. Thus, it would appear that while the unions are hindering the automation effort in the present, they

are at the same time looking enthusiastically ahead to a very bright future in the automated Merchant Marine of the United States, a future which only their co-operation can make possible.



TOP-FIRED BOILER



ENGINE ROOM CONSOLE



ENGINE CONTROLS ON BRIDGE

## UNITY

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UNITY

Take any group of people who live together, work together, and spend much of their spare time together. If there is a need for unity among them, which there is here at the Academy, and if there is a desire among them to promote this unity, an excellent method of achieving this desire is to set up some type of organizational structure through which everyone has a voice in the function of the whole.

In such a group as an individual class at the Academy, it is essential that the members of the class act as a unit to as great an extent as is possible. With such a number of people as is found in a class here living in such close quarters, especially on cruise, and being expected to work together as a team, a divided class can be very detrimental. If the class is faced with a division or inner rivalry, it will tend to lose sight of the overall objective of the school. In the merchant marine, people either get along with their fellow human beings or they will be a failure in the career which their presence at the Academy indicates they have chosen. The primary duty of a merchant marine officer is to perform his job effectively, and this can only be done with a united, smooth running crew. Any break in the structure will tend to prevent the achievement of success in such a system.

The third class elections which were just held are an example of such a division within a unit. The division is an initiation of what may continue to be a further split in the class. With a class which constantly fights within itself, there can be no progress made toward the betterment of the whole. EDITOR

BINNACLE BOOKSHELF

John Steinbeck's The Log From The Sea of Cortez is a story of the collaboration between the marine biologist Ed Ricketts and the novelist John Steinbeck. This story deals with their joint scientific expedition to the Gulf of California. The trip occurred in 1941 and the book was originally published in 1941 as The Sea of Cortez, but has since been republished as The Log From The Sea of Cortez, with an added introduction about the colorful and likeable Ed Ricketts. A reader who enjoyed the original Sea of Cortez without experiencing this later edition's introductory character sketch could very possibly be missing much of the insight that makes this story a valuable source of contemplative inspiration.

The friendship between Ed Ricketts and John Steinbeck provided the later with the basis for his fictional "Doc" in Cannery Row and Sweet Thursday and in real life "Doc" loses none of his carefree appeal. Steinbeck describes him as a man whose interests were so varied and whose knowledge was wide enough so that to any acquaintance he had the appeal that is supplied by a common ground for conversation. Conversation, in fact, appears to have been the spice that accompanied "Doc's" relentless effort to keep his shaky Pacific Biological Laboratories financially stable. Over infinite bottles of cold beer, with a background of his beloved Bach fugues, Ed Ricketts discussed anything and everything. The wonderful speculation and discussions that took place for six weeks on the "Western Flyer", a sardine fishing boat under charter for the trip, form the basis for this book.

They made their trip to the

Gulf of California with a crew of three and collected from about fifteen pre-selected areas. The collecting was all done from tidal flats without the use of the now popular scuba gear. An attempt was made to observe the life of these areas in all their inter-relationships, and finally, to draw any relevant conclusions from the way these animals lived.

This book is by no means a scientific journal. Steinbeck has presented a touching sample of the flavor that the towns of La Paz, Loreto, and Guaymas, notable ports of call, have to offer. The entertaining and provocative thoughts that were discussed and the always appealing style of John Steinbeck make this book something anyone can and should enjoy.

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HELP WANTED

Enterprising future second classmen are needed to work part time on a promising student publication....the BINNACLE. Desperately needed are a good typist and a fair speller. Any interested midshipmen should contact M/S Nelson, Div. 1-D.

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I would like to take this opportunity to thank all of the people who have contributed their time and literary abilities toward the publication of this paper. It has been an enjoyable experience and one that I will never forget.

*Doug Grant*  
*Leopold Malt*

