Correspondence—continued

our opinion will grow, would benefit from a separate class. A short lecture (half-hour) followed by a discussion and a final summing up would be the programme for such an evening. The lecturers could be varied and should be drawn from all parts of the docks.

A very difficult problem on which we have not formed a definite opinion is whether an age limit of 19 years or something similar should be set for entrance to this course. The argument for having such an age limit is that it would be better for younger students to have more general subjects, e.g. commerce with a special regard to Transport, English and Geography. The argument against it is that it would deprive students of the advantage of passing the Port Working Examination before being called up for military service so that after return from the services they could start right away on the Institute of Transport Examination, and our fear that most of the young boys would not come to a class which has a general educational background because there would be a tendency to look at it as a mere continuation of their school activities, and not a professional or semi-professional course.

The next question we asked ourselves was whether this one-year course would form a substitute for a preliminary examination for a professional body. We feel also that the passing of the examination will be a real and sufficient test that the students have reached the necessary standard of maturity to be ready for the full course of the Institute of Transport. It has been suggested (Institute of Transport Bulletin No. 27 for 1951) that English should be introduced into the syllabus. The argument advanced against it, that the inclusion of an academic subject would deter many students, is one with which we agree.

There are no suitable text books available for this particular course. The existing text books, although excellent, are too expensive, and also go too deep. What is needed is a short and precise text book written in easy language. I am sure that amongst the new lecturers who have been taking this course this year are many who have prepared notes, and these notes might perhaps form the foundation for such a text book.

We have no experience yet of the examination but we feel that three evenings of three hours each will be a heavy strain for students who have been working all day and have to take an examination at night. The suggestion made above that two evenings would be sufficient together perhaps with the cutting down of the time from three to two and a half hours would ease the burden materially. At the same time we feel, that a purely written examination may handicap some students, and some thought should be given to the possibility of having a combination of oral and written examination, or even only an oral examination.

A last word about what, although it seems trivial, proved to us of great importance. The responsibility and the full initiative for the running of the course must rest fairly and squarely on the school, and the Institute of Transport. In no circumstances must the impression be given that this course is mainly sponsored by the Dock Labour Board, or the Trade Unions. Suspicion is rife in dockland and grievances die hard. The docker may not trust the Dock Labour Board, and may suspect even his own Union. He will welcome the independent setting of the school, the independence of his lecturers, and he will benefit by mixing with other students of the institute. In our case we preferred to run the course even in our own building which is a grammar school normally used by boys, in preference to better equipped premises offered to us by the Port Authority and Trade Union. We feel that if the impression gained ground that this course is one run by the Dock Labour Board it would not attract the best type of student who wants to keep independent of his employer.

This is the first attempt to bring education to the dock worker. Nothing must stand in the way of making it well known and successful. The efficiency of our docks depends in the last resort on a well informed and alert labour force which understands not only its own job but its background and its place in our economic life. By making this course a success we can contribute towards this aim.

Yours faithfully,

Evening School of Commerce,
Salford Education Committee.

(Signed) R. FOX,
Principal.

April 15, 1952.

To the Editor of *The Dock and Harbour Authority.*

Dear Sir,

Decasualisation at Rotterdam

In your Editorial Comment on the problem of the " Turn-round Delays to Ships in Port " (February, 1952) the remarks you make concerning labour conditions at the Port of Rotterdam are not altogether in accordance with the prevailing position, and I would therefore appreciate it if you would correct any false impression which your readers may have gained.

(1) It is a fact that the dockworkers in the Port of Rotterdam work normally 8½ hours a day and 48 hours a week. Only those stevedoring firms, specialised in the transhipment of bulk goods, i.e. cereals, coal and ores (the so-called mechanical industry) work continuously, and that in a three-shift scheme, not in a two-shift system. The normal working day lasts in this case 7½ hours (40 hours a week). Few dockers are concerned with this trade (actually only about 12 or 15% of the total of dockworkers at Rotterdam) and the cause for this continuous working is to be found in the economic necessity, resulting from the—in comparison with the general cargo transhipment — extraordinary high degree of capital-intensity of these companies.

(2) The Port of Rotterdam has been decasualised since June, 1949, and the following measures are in operation :—

(a) centralisation of the demand for dockworkers;
(b) centralisation of the offer for work;
(c) restriction of the offer, in other words, the forming of one collective reserve for all firms together;
(d) granting of guarantee-wages for the time that the dockers are involuntarily out of work;
(e) the obligation of the dockers to report at a fixed place and time and to accept the work offered to them.

It is perhaps interesting to remark that there is a further resemblance to the English system (and the French) in so far that the dockers do not make any financial contribution.

The differences from the English system are as follows :—

(1) the guarantee-wages are paid for each hour of unemployment (up to a maximum of 48 hours a week);
(2) they amount to 80% of the standard wages per hour;
(3) not taken into consideration are any extra earnings (i.e. overtime, very dirty jobs, etc.).

With regard to these three points of difference, I venture to suggest that in this respect the Rotterdam dockworkers are in a better position than their English colleagues. I also think that this way of payment evokes in the docker a stronger financial stimulus to work, for in the English scheme the extra earnings are taken into account for the calculation of the guarantee " make-up." Not so in Rotterdam.

On July 1st next, it is hoped that a general obligatory " half-pay " and " unemployment "-insurance-scheme will be introduced in the Netherlands (including the Port of Rotterdam), with the consequence that those workers who, in the event of depression of port activity are removed from the register, will receive during a certain period a " half-pay " unemployment-benefit, before they, as unemployed persons, will be dependent on Government's support.

Yours truly,

Rotterdam.
8th April, 1952.

N. Th. KOOMANS,
General Manager of the Port.

To the Editor of *The Dock and Harbour Authority.*

Dear Sir,

English and Dutch Methods of Shore Protection

In his new book " Coast Erosion and Protection " (Chapman and Hall, 1952) the well-known writer of several eminent books on civil-engineering subjects Mr. R. R. Minikin, writes about the Dutch method of Coast Protection as being unnecessarily expensive, even £20,000 to £25,000 per groyne. " The constructions become more and more grandoise and expensive; in fact, viewed against the history of the simple early works of generations ago, it does not appear that these modern methods have even the functional success of their forerunners."

Those " forerunners " were the wooden fence-groynes still used extensively on the English coasts in some form or other. We

Correspondence—continued

abolished these fences about 1730; it would therefore appear that two centuries ago the Dutch engineers protected their coast better, and in a more economical way, than they do now (pages 221 and 222 of the book). Mr Minikin's idea is to promote " sea-sense " and he writes: " It is only right that new works and methods should be tried out, but they must be more closely related to the ends in view." Now this is a rather serious doubting of our horse-sense as well as our sea-sense.

Knowing the English shores fairly well (and admiring their beauty) and having noted down my views on coasts, estuaries and tidal hydraulics in the new " Civil Engineering Reference Book " (Editors Probst and Comrie). I venture to explain the difference between the English and Dutch methods of shore protection as they are to-day. They are as follows:

The Dutch want artificial capes, the English mobile material to protect their coasts. Mr. Minikin says, page 34: " The erosion of high cliffs containing durable minerals is a very useful source of supply of littoral drift for beach economy. The loss of ground surface is surely a small price to pay." Since Holland has no cliffs it has very little littoral drift. There is some, but it is unreliable and halting. The whole coast has a tendency to recede slowly, some parts more than others. We could not pay the small (?) price of loss of ground surface of the receding places and therefore defended those places, of course diminishing the littoral drift by doing so.

The 12 mile stretch between Hook of Holland and Scheveningen with its 66 groynes which are specially evoking Mr. Minikin's scorn, had to be built because the sand dunes there became so narrow that the sea would have broken through. The cape-like expensive groynes have kept the depth-line of 7 metres well out of the shore, and kept the whole low country behind it safe. We have learned to look under water. The tidal currents had to be kept off, well away from the shore. Mr. Minikin says that nobody " should interfere drastically with the natural regimen of the lower foreshore," but we had to do so. There would not have been any cheaper way to escape calamity.

The English method may be the cheapest in England so long as that country can suffer the sea to produce enough littoral drift from its shores. We would perhaps welcome England to provide us also with some material of its eroded shores, but England is on the wrong side of the Channel, and I fear we even would suffer from it in our river and harbour entrances. Littoral drift has its disadvantages too.

Of one thing we are sure; there is no other way to stop sea-erosion than by making or keeping strong capes. In the long run, even in England, the coasts will recede in the same proportion as its capes and cliffs recede, many low parts between the capes and cliffs included.

Yours faithfully,

35, Stalpertstraat,
The Hague, Holland.

DR. J. Van VEEN.

April 7, 1952.

Book Reviews

Maritime Works (Travaux a la mer) by Marcel Blosset. Published by Eyrolles, 61, boulevard Saint-Germain, Paris, 5e. 510 figs., 635 pp. price 3950 francs.

This book is divided into four parts : (1) the Elements, (2) Necessary adjuncts to maritime traffic, (3) Construction of Maritime works, (4) Harbour Exploitation. There are 24 chapters, 635 pages, and 500 sketchy illustrations, mostly of the type that would be depicted on a blackboard accompanying a lecture. This is understandable as the author is Professor of civil engineering at the Ecole spéciale des Travaux Publics. It is a feature which is convenient as it rivets attention upon the matters discussed in the text. The book covers a very wide field in one volume, and is a veritable compendium of maritime engineering activities featuring design, construction, use and administration. It will be appreciated that such an extensive range does not allow of detailed treatment, nevertheless, the author has succeeded in producing a volume of great interest upon a technical subject that never becomes uninstructive or boring. Such treatment makes it a valuable aid to students to master the ramifications of the subject before specialising in any of the branches discussed.

The first part deals with wave action, tides, and currents; sea industries, and various schemes for utilising tidal power; hints on constructional materials, etc.

The second part commences with descriptions of post-war vessels and their harbour needs; and then discusses the provisions, from the naval architectural standpoint, for the seaworthiness, security, and navigability, of vessels. The modern development of navigation aids, and recommendations of international conventions, or associations, for safety provisions are examined. Useful notes on the production of charts and the preparation of soundings diagrams are given, lightships, lighthouses, harbour direction lights and radar equipment stations are also treated.

The third part is the most extensive and covers more than half the volume sketching maritime works from harbours of refuge, outer harbours, calling piers, etc., to those works required in the largest of commercial ports. There are 13 chapters in this section dealing with tipped rubble breakwaters and vertical walls and the methods of design and construction; the layout of the essential facilities for discharge and transfer of cargoes to land transport and storage, the expeditious loading, or unloading, and despatch of bulk cargoes, the economics of transporter and luffing cranes, etc. Lengthy treatment is given to the construction of various types of quay walls for shallow and deep water docks and to mooring facilities alongside, wharves, dolphins, buoys, etc. Numerous hints are given on materials of construction and for fendering vessels alongside quays. One of the chapters is devoted to dock gates and shipping locks. Then follows a chapter on grids, ship-building and repair berths, slipways, and floating docks. Various types of bridges for spanning navigable waterways and channels are described. Other matters receiving attention are: dock and harbour maintenance, wreck removal, dredging, etc. Then follow chapters on coast defence and the improvement of tidal rivers, and canals.

The fourth part, of three chapters, deals with commercial, administrative, and special matters such as seaplane bases, oil ports, fish marketing facilities, and the duties of a harbour engineer.

To sum up, the book is most interesting reading and gives full attention to the essentials of the subject as a whole. It provides an excellent, although sometimes a sketchy, summary of the construction of maritime works and maintenance, and should be of great use to young engineers wishful to acquire information over the whole of maritime harbour activities. R. R. M.

Three Hundred Years on London River by Aytoun Ellis, The Bodley Head, 30s.

This book is the Hay's Wharf story from 1651 to the present day and is rich in the history of riverside Bermondsey and Southwark. It traces its development from a small wharf to the present-day continuous line of wharves extending from Tower Bridge to Bankside with ancillary cold stores and wine and spirit vaults lying behind the riverside warehouses. The book also traces the development of the lighterage, cartage, and shipping and forwarding interests associated with the present-day company, The Proprietors of Hay's Wharf, Ltd.

In the early days of Hay's Wharf hoys and other sailing coasters were the only vessels to berth at the wharf. In the early part of the nineteenth century there were services from the wharf to Swansea, Plymouth, Stockton, Ipswich and other coastal ports. In the middle of the century the China clippers came to the wharf to be followed later in the century by steamers. The author has dealt generously with the history and the warehousing side of the Hay's Wharf business; he has also brought into his narrative the family records of those far-seeing men who built up the business as London knows it to-day, but much of interest has been lost by not telling the reader something about the ships which so many thousands of Londoner's see day by day as they cross London Bridge.

The book is well illustrated with old sailing bills, maps, plans and contemporary pictures and prints. Several of the illustrations have been specially painted by the author's son, Mr. Gordon Ellis. A. G. T.

Correspondence

To the Editor of *The Dock and Harbour Authority*.

Dear Sir,

English and Dutch Methods of Shore Protection

Adverting to the letter on the above subject in your May issue over the signature of the well-known maritime authority, Dr. Van Veen, of the Dutch Rijkswaterstaat, may I also ask the hospitality of your columns, as thereby readers who have not read my book on " Coast Erosion and Protection " may the more easily appreciate the argument. First of all, I should like to clear the ground by assuring the worthy Doctor that my approach to maritime matters is with humility and never scorn. The paragraphs, pages 221 and 222, of my book from which he quotes a few sentences read as follows :—

" The sandy foreshores of the Low Countries have for centuries been given careful and constant attention, and the fame of the engineers concerned is widespread. It was always opined that the outstanding feature of these important coastal protection works was the resourceful utilisation of cheap and readily acquired materials, yet the modern tendency on these shores during the last few decades has changed considerably. The constructions become more and more grandiose and expensive; in fact, viewed against the history of the simple early works of generations ago, it does not appear that these modern methods have even the functional success of their forerunners. It is only right that new works and methods should be tried out, but they must be more closely related to the ends in view, and the natural conditions, than to the material characteristics of the construction: for example, the construction of the Scheveningen groynes was a formidable undertaking.

" On a 12-mile stretch of coast north of the Hook of Holland there are 66 groynes extending for about 330-ft. below low water line. The cross section of these groynes shows that they are about 80-ft. wide and about 12-ft. high from the base to the crest. The central body consists of a tier of fascine mattresses tapering from nearly 80-ft. wide on the bottom to 30-ft. at the top. On the top fascine a straw mattress is laid and staked, and then covered with a blanket of rubble to a humped form. Over this, for a central width of 20-ft., basalt blocks are laid, and confined at the outer edges with heavy timber stakes. Then on the outside of the stakes, large rubble is tipped to completely cover the whole of the fascine mattresses projecting beyond the basalt crest, at both sides. This rubble is then grouted with bitumen mastic of 20 per cent. bitumen, 60—70 penetration, 10 per cent. filler, and 70 per cent. dune sand, poured at temperature of 180 degrees Centigrade.

" The groynes so treated remained in good condition for six years without maintenance, but those which were not grouted suffered considerable damage.

" Now, as the foreshore is of fine sand and there are no sandbanks off-shore for a considerable distance, the question arises, are the functional benefits obtained from these massive structures commensurate with the cost? The overall problem of this coastline is without doubt best understood by the coastal engineers but, as far as sand accretion is concerned, in *no way has a case been made out* for solid obstructions opposed to wave or current. It is much more likely that large solid obstructions will accelerate sand transportation by prolonging the time the grains remain in suspension under wave action and subjected to current movement, and thus promote local scour and settlement of the groynes. If the turbulence about them is sufficient to scatter the rubble, then it is obvious there will be no deposit or accretion of sand grains. As each of these Scheveningen groynes cost between £20,000 and £25,000, it will be appreciated that such works cannot lightly be undertaken."

Surely this is a fair comment in view of the fact that elsewhere on the sandy west coast of Denmark similar heavy groynes of concrete blockwork have not given the degree of efficiency commensurate to their cost. For example, on a 4½-mile stretch of coast south of Bovbjaerg the coast recession before groyning was 10-ft. per year. After the construction of the groynes the erosion was eventually reduced to 3-ft. per year but, unfortunately, in the immediate lee of the series, the coastline for a considerable distance (originally stable and comprising valuable agricultural land with cliffs of moraine clay 30—40-ft. high) suffered the severe erosion of 200—250-ft. in ten years.

Another factor proved alike by the Danish and Dutch engineers was the high cost of maintaining the seaward extremities of these structures; in fact, while the Dutch were forced to bind the boulders with bitumen into a cohesive mass, the Danes were compelled to shorten their groynes by 300-ft. Further, the settlement rate of the groynes into the sand entails a considerable renewal every ten years or so. Many other examples of a similar nature show the hazards attendant on massive groynes or " strong capes."

Dr. Van Veen's explanation that these capes were constructed with the sole intention to throw the tidal currents further out to sea, with the full acceptance of the consequent loss of any available littoral drift, constitutes probably the most daring expedient to reduce erosion that has ever been devised. I sincerely hope it shows good measure of success. My doubts, however, arise from the conviction that an onshore gale and conditions of the sea bed that make for wave convergence create severe turbulence and out-to-sea under currents of strong erosive power. Against this, groynes, or capes, alone, are of little use.

Much as I admire the maritime skill and wide knowledge of Dr. Van Veen I cannot subscribe to his penultimate sentence, I quote, " Of one thing we are sure; there is no other way to stop sea erosion than by making or keeping strong capes."

I would like to emphasise that what I have written above is the portrayal of my thoughts and is not fault-finding criticism of his helpful letter nor yet solely justification for statements in my book. I am as keen as Dr. van Veen to arrive at reasonably effective practical solutions of sea problems within the economy of social values and logical geophysical limits.

Yours faithfully,

13, Mendip Gardens,
Bath, Somerset.

R. R. MINIKIN.

Handling of Cargo at European and U.S.A. Ports

continued

(a) Hardly more than 50 per cent. of all present day ships dispose of sufficient booms as to be worked by more than 5 gangs.

(b) Even in the case of modern ships equipped with a larger number of booms, these are generally working to full handling capacity with 5 gangs, as part of the winches have to be employed for shifting cargo below deck.

If quayside cranes are available for the handling of cargo the picture is as follows:

(a) If the ship and the hatches are large enough a number of up to 13 gangs may be working to the shore.

(b) In addition the ship can work simultaneously a further 5 gangs on the off-shore side into floating craft and still has available a sufficient number of winches for the shifting or stowage of cargo below the deck.

The above figures agree with the practical experience that the loading and unloading of ships in European ports is performed **considerably faster** than in U.S.A. ports. Reports from ships' officers and port operators tell that, by the use of quayside cranes the handling output of a ship is increased by 50-70 per cent. as compared with the exclusive employment of ships' gear. This, after all, is the decisive point of our study, since by faster dispatch of the ship the quayside cranes fulfil their foremost task: to contribute in setting the ship free for its true purpose, i.e. moving across the seas. Thus the use of cranes increases the productivity of the whole operation and promotes the business of the port. Unavoidable demurrage of the ship is of no account for the comparison of quayside cranes with ships' gear as either means of cargo handling is affected in the same degree.

(To be continued)