

PAGES

MISSING



. THE CENTRAL . .
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Engineering
Club
OF CANADA

OFFICIAL PROCEEDINGS

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PROCEEDINGS OF THE CENTRAL RAILWAY AND
ENGINEERING CLUB OF CANADA MEETING.

PRINCE GEORGE HOTEL, TORONTO,

October 17th, 1911.

The President, Mr. Baldwin, occupied the chair.

Chairman,—

It is about time we made a start. Owing to the weather, I presume, we will not get a larger gathering to-night.

The first order of business is the reading of the minutes of the previous meeting. I think everybody has had a copy of the Proceedings of the previous meeting and it will be in order for someone to move that they be adopted as read.

Moved by Mr. Wickens, seconded by Mr. Cole that the minutes of the previous meeting be adopted as read. Carried.

Chairman,—

The next order of business is the remarks of the President.

I do not know that I can say a great deal under this head, any more than to urge upon you the necessity of bringing in more new members. This subject is usually left to our estimable Secretary to take up with the members, but I think it is my duty to endeavour to get some of the members induced to show a copy of the Proceedings of the meetings to their friends. I think that is all that is necessary, show them what we are doing and point out to them the high class of papers that are given before this Club and that will be sufficient to attract any mechanical man to join our Club.

Without doubt, I think, this year has been first class, both in attendance of the members at the meetings and in the class of papers that have been read to you from time to time, also the Social Evenings and the Picnic at Beaverton were excellent, and I do not think that anybody can find fault with what we have given them this year and it is on this account that I ask you to stir yourselves up a little and try and get in new members.

We should not have to take this matter up every night and I hope that between now and the end of the year we will really do something towards getting a larger membership.

The papers read before the Club, as I said before, have all been first class and the one we are going to have to-night I am sure will be under the same category, and the paper we have for the next meeting is by Mr. A. Dwight Smith, General Sales Engineer, of the Northern Electric Co., of Montreal, on "Train Despatching by Telephone" which you all know is a very interesting subject. They have been for a good many years trying to dispense with the ordinary telegraph system of despatching trains and use the telephone system and as Mr. Dwight Smith is an expert in this business I would ask you to try and induce as many members as well as their friends to be here as possible.

With reference to the remarks I made last meeting night in reference to the Social Evening. It has almost been decided to have our "Smoker" on the week following the next meeting, and to bring matters to a head it will be necessary for the executive to stay after this meeting to make final arrangements. You will all be notified in the usual way, of course, and it will be announced definitely at the next meeting.

In reference to the Smoking Concert I might add that at the last "Smoker" we had, while it was one of the best we ever had, still we did not bring in as many new members as the previous ones; why, I do not know. Members should not bring their friends to the "Smokers" just for the sake of bringing them, but they should endeavour to make them members of the Club and I want you to look at it in this light.

Through an oversight in the September issue of the Journal, the name of the donators of the Cup presented for baseball championship at the picnic was left off the list of donators of prizes. This cup was presented by the Canadian Supply Co., of Toronto, and was very much appreciated by everyone.

The next order of business is the Announcement of New Members.

NEW MEMBERS.

C. Meldrum, Apprentice Instructor, G.T.R. Shops, Stratford.

E. Smythies, Secretary, Boiler Repair & Grate Bar Co., Toronto.

H. H. Dryden, Traveller, Canadian Oil Co., Toronto.

J. Chipchase, Manager, Supply Department, Canadian-Fairbanks Co., Toronto.

J. Disney, City Traveller, Canadian-Fairbanks Co., Toronto.

Thos. H. Barnes, Salesman, Johns-Manville Co., Toronto.

MEMBERS PRESENT.

J. Bannon.	H. H. Wilson.	A. M. Wickens.
J. F. Campbell.	A. W. Carmichael.	H. G. Fletcher.
E. Logan.	J. H. Morrison.	C. A. Jefferis.
P. B. Brewitt.	W. Newman.	T. J. Ward.
G. McKenzie.	E. Blackstone.	E. A. Wilkinson.
R. Pearson.	H. E. Rowell.	D. Cairns.
J. Jackson.	W. David.	D. Campbell.
J. T. Fellows.	J. Bruce.	T. B. Cole.
T. H. Barnes.	G. S. Browne.	C. G. Herring.
W. Goodwin.	H. O. R. Horwood.	J. S. Adam.
W. H. N. Davis.	G. Baldwin.	J. Barker.
C. F. Nield.	H. Eddrup.	F. Scott.
W. Evans.	J. Dodd.	W. J. Jones.
L. Salter.	H. Hartley.	L. S. Hyde.
C. L. Worth.		

Chairman,—

This is not very many, but every "little bit makes a little bit more." I might say in reference to this, that these names have been passed on by the Executive and these gentlemen are duly elected as members.

We should like the names of any members who are willing to give us a paper or the name of anyone they know who would be willing to give us a paper. We are all right up to February and I suppose you think that is sufficient, but we would like to have papers for six or eight months in hand, if possible.

We will pass on the order of business "Reading of papers and discussion thereof."

We have with us to-night our illustrious friend Mr. Lewkowitz, who I am glad to see has got back safely after having travelled over six thousand miles to the Old Country and back, who has undertaken to give us a paper to-night on the "Development of Boat Davits," a model of which you see before you. I feel satisfied that what Mr. Lewkowitz is going to tell us will be highly interesting and I have much pleasure in calling on Mr. Lewkowitz.

THE DEVELOPMENT OF BOAT DAVITS.

BY A. J. LEWKOWICZ, CONSULTING ENGINEER, TORONTO.

Most of those present to-night are probably acquainted with the old-fashioned round bar cranes, used to swing a life-boat out from a ship's side, and called in nautical parlance "davits." There are hundreds of thousands of these old style davits in use at the present time and they, no doubt, have been used since long before Columbus sailed across the western ocean from Spain to discover the new world centuries ago.

One of the reasons that there has been so little successful development, and why so many of these antiquated davits are still in use, is due to the unusual conditions and neglect that they have to live through and survive, particularly when not required for service making it very difficult to improve on them on account of their extreme crude simplicity.

I do not mean to infer by the preceding statement that no attempts have been made to improve upon these davits, because I am given to understand, on good authority, that there are up-

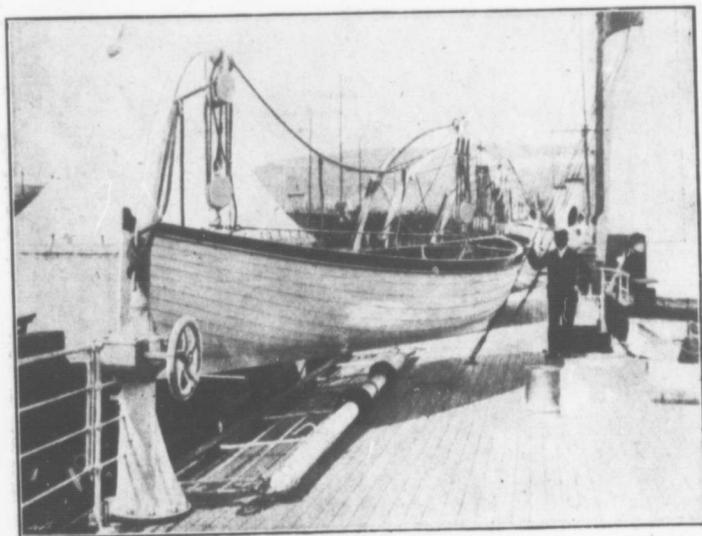


FIG. 1

wards of two thousand five hundred patents mouldering away in the United States Patent Office. A great many of them are very ingenious and reflect lots of credit for the thought and inventive ability displayed by their creators, but these very features as a rule require so much complicated and delicate machinery as to absolutely make them useless and inoperative under the corrosive and destructive conditions encountered at sea that an apparatus of this description is required to undergo.

There have been, however, several practical improvements made in davits that have successfully stood the test of time and the rigors of the conditions met at sea. One of them is the "Pett" Davit (See Fig. 1). It is virtually an old style

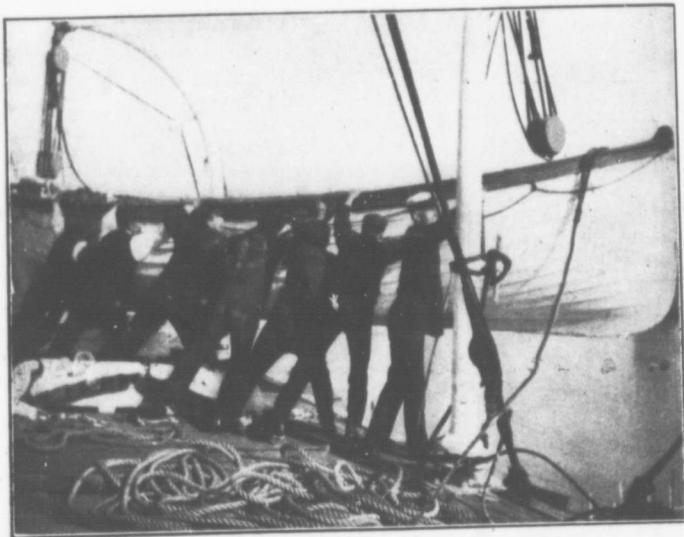


FIG. 2

davit equipped with a worm and worm wheel on the vertical portion of the davit, by means of which the power necessary to swing the davit out is largely augmented over methods required to do the same with the old-fashioned davit (See Fig. 2) which takes anywhere up to a dozen men under favorable conditions to swing out a boat of considerable size, say of 26 feet to 30 feet and 8 feet to 9 feet beam and is attended with a great deal of danger, as the boat is very likely to come back with a sudden swing when a ship is rolling, should the men have been unable to get the boat swung out sufficiently and the

guys fastened to prevent this. With the "Pett" davit the number of men required is much less and the boat cannot swing in with the rolling of the ship, as the worm by which the davit is actuated holds the davit at all positions.

Another improved davit, the "Welin", is very largely in use at the present day (See Fig. 3) in fact in the last advertisement of the people building it, that I saw during my recent sojourn in England, stated that over four thousand of them were in use on board ships, this in itself, speaks well for its superiority over the old-fashioned davits and also emphasizes the fact that the steamship companies and builders recognize the necessity for an improved apparatus to do the work they are

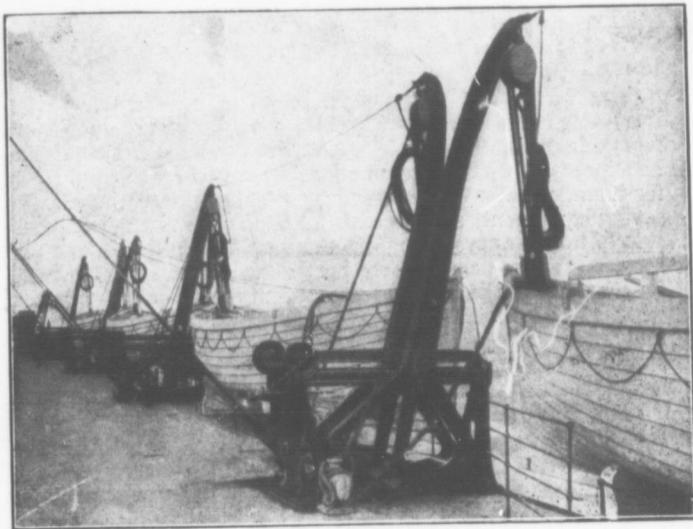


FIG. 3

intended for. The "Welin" davit consists of a quadrant attached to the base of a derrick arm. This quadrant rolls upon a rack at the base of a frame attached to the deck, and is operated by a crank which turns a screw that moves the centre of the quadrant either outward or inward, according to whether the boat is being run out or in.

It speaks well for the parties who have developed the latter davit that despite the fact that this davit is more expensive than the old-fashioned one and has no feature connected with that enables any economy in equipment and maintenance, it

has so much merit over the old davits in its favor as to force a recognition of this fact from the steamship people to the extent that it has.

When all is said and done, all the improved davits accepted up to the present time, and in use, are entirely and essentially only davits whose sole function is to run or heave the boat outboard from the deck of a vessel.

In the olden days when the sailing vessel was queen of the sea, the free-board, or height of the vessel's deck from the water, was not very great, the lifeboats were comparatively small and few in number and the crew were few in number on account of the small size of the vessels then in use. The advent of the steamship, which took away the supremacy of the sailing vessels, did not at first alter these conditions very much so that there was no need for any apparatus, other than that in use.

But as the distances by sea began to shorten due to the increasing speed of steamships and the colonies began to grow largely in population and in wealth, the demand for larger ships and more luxurious accommodation for those who could pay for them, and the Governments passing laws regulating the life saving equipment, all tended to develop the mammoth steamship of to-day approaching one thousand feet in length and one hundred feet in beam, whose boat decks are one hundred and four feet above the keel and over seventy feet above the water, when the vessel is loaded, has gradually brought and forced forward the fact that there is great need for an adequate lifeboat launching apparatus that will enable lifeboats to be launched quickly and safely into the water after swinging them out.

With all the previously mentioned davits, the lowering of the lifeboat is to-day accomplished even on the largest of the existing steamships in the same old primitive way, each davit being equipped with a triple block and a triple block at the bottom of the tackle, making a six part tackle at each end of every lifeboat, each of these falls is operated independently of the other, and on the biggest ships are about thirty three feet apart. It is obvious that on a dark night, in the midst of the confusion that would attend an accident requiring their sudden use, possibly in a storm, that after the boat had been lowered out of sight in the darkness, the men at one of these davits could have no possible means of determining whether they were lowering their end of the boat faster or slower than the men at the other end. One can readily understand that in lowering a lifeboat seventy feet, which would require the letting out of four hundred and twenty feet of falls at each davit, it would take but very little variation in the speed at either end to let

one end of the lifeboat down so much faster than the other, so as to precipitate any passengers in it into the sea.

I know of one boat launching gear that has been fitted with a lowering gear on davits of the "Pett" type, but as each is independent of the other it has the same dangerous feature of the possibility of one end being lowered faster than the other with equally disastrous results. This feature is the one that has caused the greatest number of accidents and loss of life in launching life boats, particularly during panics following disasters at sea, not only then, but it has even occurred in the launching of a life boat by seamen with only a few seamen in the boat, in comparatively calm weather, in view of all the ship's passengers, in an attempt to save the life of a crazed fireman, who jumped overboard to commit suicide. An account of which I will read you from a newspaper clipping of last year,—

TELL OF OCEANA DROWINGS

Rescue Boat Descended Stern First—Its Crew Emptied into the Sea.

Members of the crew of the German steamship *Oceana*, chartered by the Quebec Line and plying between this port and Bermuda, told yesterday on the ship's arrival here how four of their shipmates lost their lives on Sunday morning in a choppy sea when within a day of Bermuda.

Gustav Baruch, a Swiss stoker, who had willed his belongings to another stoker, intimating that an accident might happen to himself on the trip, jumped overboard on Sunday morning. The liner was stopped and her engines reversed and she backed to within a few hundred feet of Baruch. A ring buoy was thrown to him and he grasped it.

The port lifeboat amidships was made ready for launching in charge of Chief Officer Alois Boecher and seven seamen. The seaman who had charge of the stern fall found himself unable to hold it because of the heavy weight in the boat. The rope slipped through his hands, cutting them to the bone. The bow fall held fast and all hands in the boat were dumped into the sea.

A large number of the passengers had gathered on deck and they began throwing life buoys to the men in the water. Fifteen in all were hove overboard. Christian Dahl, the carpenter, and two other men clung to one of the buoys until they were picked up by another lifeboat, in charge of Second Officer Stormer, lowered from the starboard side. The port boat had dropped completely into the sea and Julius Meister and Otto Mierwalt, *able seamen*, were holding on to ropes attached to it.

The men in the starboard boat passed Meister and Mierwalt, supposing that they could hold out better than the men drifting

on the buoys, but both let go and were drowned. The boat rescued the ship's carpenter and the two other men clinging to a buoy. Carl Sylvester, another seaman, who could swim only a little, was unable to reach a buoy thrown close to him and he also was drowned. Baruch, the stoker, decided after clinging a while to the buoy that he preferred to die and deliberately shoved the buoy from him.

The Oceana waited until all except one of the ring buoys had been picked up before proceeding. Her skipper did not want to have his ship reported as in possible trouble in the future because of the finding adrift or on a beach of one or more of the buoys; besides they are valuable.

However, I may say that great attempts are being made by numerous people and concerns to make an apparatus to meet the present needs along these lines safely.

For the past few years I have been the Consulting Engineer



FIG. 4

for a Canadian Company that has undertaken the development of a davit that will meet all requirements that are necessary to insure this life saving equipment aboard vessels being such that it can always be as properly and safely handled as human ingenuity can make it.

I have just recently returned from England where I went to build and install the most up-to-date davit that I had designed

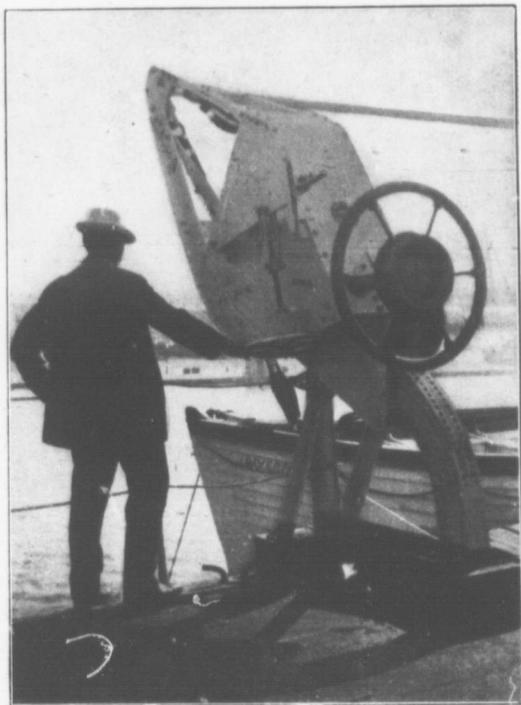


FIG. 5

for this Company, with the object of getting the British Board of Trade's authority to install them on British ships. This apparatus is such that one man can safely run out and launch the lifeboat into the water seventy feet below, in less than one and a half minutes. The lifeboat is carried bodily outboard by the apparatus which runs on cam-shaped tracks at each end, which motion is actuated by the turning of a crank (See Fig. 4) which revolves a worm in mesh with a worm wheel

attached to a shaft connecting both ends of the apparatus, then the brake is applied to a combined drum for galvanized wire rope falls, mounted on same end as the heaving out gear. This brake is so arranged that it absolutely must be tightened sufficiently to hold full load, before the hoisting worm can be brought out of mesh thus providing a necessary safety feature. (See Fig. 5). This brake is so nicely adjusted that either slow or high speed can be attained in lowering the boat, and is so arranged that both ends of the boat can only be lowered in unison, thus making it absolutely impossible to lower one end faster than the other. No doubt, when the occasion arises

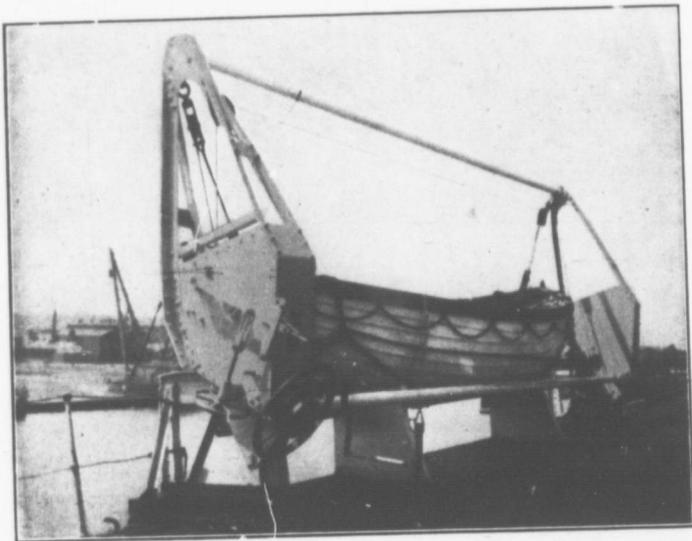


FIG. 6

requiring the launching of a boat at sea, one of the officers in the charge of the boat will probably look after the lowering himself, and should occasion arise he can, if necessary, perform the whole operation without assistance.

Another feature that is very objectionable in the old davits is that should the ship have a list of over four degrees it is absolutely impossible to launch a lifeboat from the high side of the ship. In this respect the "Welin" davit shows its greatest superiority over the old davits, and the davit that I went to England about has only one advantage over the "Welin" in this feature of heaving out and that is, that this movement is

operated by one man instead of a man at each davit as on the "Welin", there of course the comparison ends, as at present, there is no launching apparatus on the latter.

The "Martin" davit (See Fig. 6), which is the one I have been developing, can easily and safely lower a boat at a speed of 10 feet per second or more, which, allowing seventy feet, will require only seven seconds to lower the boat into the water and the boat can be landed in the water as gently as desired, even when fully loaded.

I wish to state here my appreciation of the methods and the thoroughness with which the British Board of Trade subject any apparatus brought before them for installation for life saving equipment aboard steamships. They put the davit to every test that they could think of that it might be subjected to in adverse sea conditions. They had us fill the boat while in the chocks with about six thousand pounds of sand (See Figs. 7 and 8) to see what the davit could do should the boat be rushed by frenzied passengers, who had got beyond the control of the ship's crew and had us heave it out and launch it, which was done successfully. Then they had the boat stopped while it was being hoisted, when about twenty-five or thirty feet below the deck, and by pulling on the painter attached to the bow of the lifeboat, got it swinging as hard as they could,



FIG. 7

fore and aft, as it might possibly do when loaded should the ship be pitching badly. In all it took about three months of testing of the apparatus before they finally gave their permission for its installation aboard British ships.

The apparatus was also demonstrated to a number of steamship companies, owners, marine superintendents, captains and officers, and it was very gratifying to the reader of this paper to learn of the unanimity of approval expressed by this class of experienced men.

The "Martin" davit is equipped with galvanized wire rope falls which the British makers guarantee for five years and



FIG. 8

declare with that proper attention, such as lubricating it with graphite grease, should last as long as the davit. This means a saving of two coils of 4 inch rope, 70 to 100 fathoms long each per annum for each lifeboat equipped with this davit, and in

my opinion will be its greatest factor in commending itself to ship owners.

Great consideration has been given to the deterioration of the exposed parts of this davit and also to the necessity of making all bearings self lubricating, so that the apparatus can always be operated when needed even in cases where it has been neglected by the man delegated to look after it.

Before being brought before the British Board of Trade it had been submitted to the Steamboat Inspection Department of Canada and the United States and the approval of both obtained. In fact the United States Department of Commerce and Labor endorsed the approval of its Steamboat Inspection Department's Board appointed to pass on the "Martin" davit.

Mr. Lewkowicz then gave a short description of the working of the davit with the model.

Mr. Adams,—

On a freight boat when the crew available to man the life-boat is small and one man remains on the boat to operate the davit and he lowers the boat with the crew in it, how does he get into the boat?

Mr. Lewkowicz,—

He can slide down the life line into the boat after it has reached the water, or he can start the boat going down slowly, and then slide down the life line into the boat before it reaches the water.

Mr. Adams,—

That must be hard when the ship is rolling.

Mr. Lewkowicz,—

As the boat is lowered about 10 feet a second and with a fall of 40 or 50 feet you can time it so that the boat will reach the water as the waves are coming up. A boat of 300 or 400 feet in length will not make more than 12 oscillations a minute so that there is plenty of time to judge the right moment to let the boat into the water. As demonstrated to you, it is possible to let the boat down rapidly, and then check it, letting it into the water gently, although the old seamen say they like to see a splash.

Mr. Adams,—

Then you get the hooks out? What kind of hooks do you use?

Mr. Lewkowicz,—

The releasing hooks are part of the boat equipment, and have nothing to do with the davit.

Mr. Adams,—

Can that equipment be used for canvas boats?

Mr. Lewkowicz,—

Oh yes, on most vessels nowadays they have canvas boats.

Mr. Adams,—

How near to the side of the vessel is the boat when it is launched?

Mr. Lewkowicz,—

The boat is launched close to the rail. This apparatus gives you an idea how close to the ship the boat is when it is launched.

Mr. Baldwin,—

Can this system be adopted in lowering steam pinnaces on battle ships?

Mr. Lewkowicz,—

Yes. One of the points brought out was that with this apparatus it would be possible to have larger life-boats. The Canadian rules and regulations only allow boats up to 22 feet to be used, although I understand they have been increased to 24 feet in recent years, this being the longest boat they considered could be safely handled with the old fashioned davit, and I think they were very wise to make that restriction.

Mr. Bannon,—

What would be the result if the man in charge of the apparatus lost his head, and allowed the boat to drop suddenly, would it not swamp the boat?

Mr. Lewkowicz,—

Commander Thompson of the Life-saving Department at Ottawa told me that the midshipmen in the navy have to practice manning a boat and dropping it down from the releasing hooks, with the object of accustoming them to letting both ends down simultaneously.

I have let a loaded boat go down as fast as it possibly could with this apparatus, just to test it. Of course it made a big

splash, but that was all. I made the same test at Washington to satisfy the Marine and Fishery Board, who were looking the apparatus over. I let the boat down as fast as possible, and all it did was to nearly swamp another boat which was close by. It just makes two waves that shoots out from each side of the boat.

As I pointed out to you, it is absolutely impossible to lower one end faster than the other, which is the great danger when lowering boats rapidly with the old-fashioned davit.

Chairman,—

Is there any danger of ice blocking up the apparatus?

Mr. Lewkowicz,—

Not as much as with the old-fashioned falls, which have to be beaten with bars to break the ice, and sometimes if there is time, steam is put on them, and if the falls are at all tight fitting it is almost impossible to get them to reeve through the blocks, whereas, with the wire rope we use, a slight knock is sufficient to loosen any ice that may have accumulated.

Chairman,—

This apparatus will take up much more room than the old-fashioned davits?

Mr. Lewkowicz,—

Yes. Because the ordinary davit is only a piece of round iron, but no more room is taken up by it than the boat.

Mr. Adams,—

How do they unfasten the boat from the falls?

Mr. Lewkowicz,—

I was surprised to find that there are no requirements in reference to the hooks used, and as they are part of the boat's equipment and not of the davit, I have purposely refrained from mentioning them.

In the United States the law requires simultaneously releasing hooks, so that one man in the boat can release both ends at once.

In England I saw a hook that was so constructed, so that it could not be released until the boat was water borne.

Mr. Wickens,—

Were these tests made with the boats standing or running?

Mr. Lewkowicz,—

Standing. It is not a very desirable thing to make a test while the boat is running. I have seen tests of that kind at Washington while the vessel was running at 10 or 12 knots an hour. One can easily understand that when a vessel is travelling, say 9 knots, what inertia must be overcome by the boat when dropped into the water.

Mr. Adams,—

I should think the water would draw the boat into the side of the vessel.

Mr. Lewkowicz,—

As a matter of fact this is not the case, there seems to be a tendency to shove the boat off.

Mr. Adams,—

That would be after it was released?

Mr. Lewkowicz,—

No, the boat was always shoved away from the ship. No doubt this is due to the bow waves of the vessel.

Mr. Adams,—

How about logs? they are sucked under, and also human bodies.

Mr. Lewkowicz,—

These would be likely to be sucked under, if too heavy to float. It is very likely that they would be struck by the propeller as the propeller of the vessel is below the water, except vessels travelling light. But as I said before, the tendency of the boat is to sheer away from the side of the vessel. That has always been the case in all the experiments I have seen made.

Chairman,—

Supposing that when the boat is lowered, one of the hooks is taken off, and the boat gives a lurch while one of the hooks is still on, would not that jerk the boat out of the water?

Mr. Lewkowicz,—

It would most likely swamp the boat. They very seldom attempt to launch a boat while a ship is under way, as it is a very dangerous proceeding. If the ship is travelling at any

speed, and the boat is released, it would be useless as they never attempt to lower a boat with passengers in it. However, that takes us away from the davit back to the hooks on the boat.

Chairman,—

Do I understand, then, that in the case of a man overboard, they stop the boat before they attempt to launch a life-boat?

Mr. Lewkowicz,—

Yes. On the big boats they have life-buoys on which there are acetylene lights and when a man is overboard by just pressing a button the life-buoy drops into the water, and the action of the water generates the gas which makes a light appear on the buoy so that the man overboard can see the buoy, and if he is able to get to it, he can be picked up by the boat that is put out for him.

While I was in England we made an attempt to make a record of launching a boat with the old davits, after the covers were off and the boat was ungriped it took six of us just twenty-two minutes to get the falls straightened out so that they would reeve properly, and to get the boat into the water. I understand that with a proper complement of men it can be done in ten or twelve minutes. Under the most favorable circumstances I think the man who fell overboard would be a considerable distance away, especially with the fast boats which travel about 26 knots an hour, that is about 30 miles an hour, and five minutes would mean that he would be $2\frac{1}{2}$ miles behind the boat, and pretty nearly out of sight, and as there is always a roll on the sea, it would be rather hard to see an object in the water at any distance from the boat. I have seen a barrel thrown overboard, and in a very short time I could not locate it, and a man is a very much smaller object.

I thank you all for your kind attention, and wish that I had had more time to prepare this paper. I understand that there was a paper lacking to-night, and I trust that it has been of interest to you.

Mr. Wickens,—

We have all been delighted with Mr. Lewkowicz's paper on "Davits," and no doubt he has made a very close study of this arrangement and to a novice it looks pretty good. To a man who has never had any experience or seen a life-boat launched in a storm he is hardly in a position to make up his mind just how good the arrangement is, undoubtedly it is perfect as far as lowering the boat is concerned, perhaps, better than anything any of us have ever seen, but when the boat is in the water and ready to be unhooked from the davits it is in the

same position as if lowered by the old davits, and, to my mind the critical time is at the unhooking of the boat, as if the boat is not properly unhooked, that is if the wrong end is let go first, there is every possibility of it being swamped.

I am sure we have all enjoyed the talk Mr. Lewkowicz has given us, and it has started some of us thinking if we can swim or not.

I propose a very hearty vote of thanks be tendered to Mr. Lewkowicz for the very complete manner in which he has placed this subject before us.

Mr. Lewkowicz,—

I would like to repeat on the point brought out by Mr. Wickens that this is part of the boat equipment, and not of the davits. In any case with this equipment both ends of the boat are lowered in unison, and it is impossible to lower one end quicker than the other, therein lies the danger in the old davits.

Mr. Adams,—

I would like to say that I am a marine engineer, and in that capacity I am supposed to have charge of one of the boats if anything should happen at any time.

I would like to say right here that I believe that many a life would be saved if the boat davits would work a little better. I know for a fact that in Toronto bay many a life would have been saved if the davits had been in such condition that a boat could have been swung quickly into the water. If they were in the condition they should be there would be no need for a police boat on the bay to save lives, as a boat could be lowered and the person in the water got into the boat long before the police boat could be got to the scene of the accident.

Mr. Newman,—

Before that motion is put before the meeting I would like to say that I was in the Old Country this summer attending a convention of Naval Architects, at which were representatives from every navy in the world, also from all the big shipping companies, and there were several forms of davits exhibited there. I would have liked to have had Mr. Lewkowicz and his model present. There were several excellent davits exhibited, but the chief fault with all of them was that they had too much exposed mechanism, and would soon become useless through being clogged by paint before they had been on board ship very long. You know that the ordinary routine of the men on the big steamships of to-day is largely taken up with the scrubbing or paint brush. If Mr. Lewkowicz had made a

careful examination of the acetyline lifebuoys he was speaking about, on the boat he went over on, which are supposed to be let go by the pressing of a button, he would have noticed that there was over a quarter of an inch of paint on the guide bars, and that the whole apparatus in connection with the lowering of the buoys was in such condition that it would be absolutely impossible to let them into the water even with the aid of a crow bar, and the same applies to most mechanical davits. The davit which Mr. Lewkowicz has shown you to-night is so constructed that it will work satisfactorily with a quarter or even half an inch of paint on the exposed working parts.

In connection with the releasing of the lifeboat when it is in the water, which some gentleman has spoken about to-night, I might say that more lives have been lost by boats being improperly released than have been saved from shipwrecks, and it has not always been caused by careless handling of incompetent men.

Take the time when the "Camperdown" was rammed by the "Victoria", as soon as it was discovered that the "Camperdown" was sinking, the order was given on the "Victoria" to man the boats, which were immediately lowered. The "Victoria" was working astern at this time, and notwithstanding that the boats were manned by the crew of one of the best British battleships, the leading end of three of the four boats struck the water first, and the hooks at once released at that end. The ends of the boats went under water, and standing the boats on end, dumped the crews out. With few exceptions, all were drowned.

This would be impossible with Mr. Lewkowicz's davit.

While davits have been greatly improved upon, releasing equipment has not been developed as fast.

I think gentlemen, that the davit you see before you to-night is the very best on the market to-day, and I take great pleasure in seconding the vote of thanks to Mr. Lewkowicz.

Chairman,—

You have just heard the motion to tender a vote of thanks to Mr. Lewkowicz, proposed by Mr. Wickens, and seconded by Mr. Newman. What is your pleasure? Carried.

Mr. Lewkowicz, it gives me the greatest pleasure to tender you the hearty vote of thanks of the members present for the very interesting and instructive paper which you have delivered to us to-night.

Mr. Lewkowicz,—

Mr. Chairman and fellow members, it affords me a great deal of pleasure after my long absence to get amongst you again,

particularly to-night, under such adverse weather conditions, to see so many of the "old guard" on hand.

Although across the ocean I have been with you in spirit when the meeting night came around, and I particularly missed the picnic. It has always been my pride to try and snatch a prize away.

I can only trust that I have interested you, during the short time I have spoken to-night, sufficiently to repay you for coming here on such a night, and I thank you, one and all.

Chairman,—

In reference to Mr. Lewkowicz's remark about his not being with us at Beaverton. He said he missed being there. We all know that if he missed the picnic as badly as we missed him, he felt pretty badly, as we certainly did miss Mr. Lewkowicz's amiable presence at the picnic.

I think we have listened to a very instructive paper to-night, and the paper to be given at our next meeting will, I am sure, be almost as interesting, and I hope that all present will endeavour to get here and bring as many with them as possible.

Mr. Lewkowicz spoke about the "old guard". I am also gratified to see so many present, and I think we should be proud of this. Some of them seldom miss a night. The gentlemen I have reference to are Mr. Jefferis and Mr. Fletcher, and they deserve every credit that can be handed to them by the Club. We have several Past-Presidents, but there are very few gentlemen like Mr. Jefferis, and I hope that in years to come the same can be said of myself, as I shall always endeavour to back the Club as much as possible, and to attend as often as I can. If there is no further business it will be in order for someone to move that we adjourn.

Moved by Mr. Carmichael, and seconded by Mr. Bannon, that the meeting be adjourned. Carried.