PAGE	STATEMENT	COMMENTS
2	The "VAUBAN" is stated to be a sister ship to the "VESTRIS".	The particulars in the Register Book correspond.
3	The dimensions, tonnage, and class of the "VESTRIS" are given. (The class is stated to be ✠100A1).	These are correct, except that the "VESTRIS" was classed ✠100A1 "Shelter Deck with Freeboard".
4	It is stated that the "VESTRIS" rubbed against the S.S."EL SALVADOR" on leaving drydock, but that in the writers' opinion this occurrence played no part in the subsequent disaster.	No report of this collision has been received in this Office, and it has not been possible to trace a vessel of this name.
4	It is stated that the permitted draught of the "VESTRIS" according to Lloyd's Register was 26 feet 8 inches.	The draught corresponding to the freeboard assigned was 26 feet 8½ ins.
5	Witnesses testified that a list was noted on Saturday evening, and all seemed to be agreed that a definite list to starboard was noted early on Sunday morning.	This statement is important, having in view the suggested cause of the disaster and the condition of the weather at that time. (See later comments).
5	The surviving ship's officers all testified that they could advance no definite cause for the vessel's list to starboard. "They admitted that there was "considerable leakage around "the half door situated at the "end of the thwartship alleyway "in the shelter deck, approx- "imately amidships, but they "stated that the leakage there "was insufficient to have caused "any serious difficulty until "the door became submerged."	The door to which reference is made is a coaling door, and is not an unusual fitting in a vessel of this kind. The position of the door as shewn on the approved plans is such that its bottom edge is fully six feet from the waterline. No plan of this door was submitted for approval, but regarding its position there is nothing that would justify adverse comment. If it is true that it was known that considerable leakage was taking place around this door, and that the officers' opinion was that serious difficulty would have been caused if the door had become submerged, then it was clearly advisable that immediate steps should have been taken to obtain access to the door and to render it watertight.
6	The writers think it clearly established that the vessel was in serious difficulties before weather of any severity at all was encountered.	This statement in itself seems to be rather difficult of proof, and is important as bearing upon the cause of the list suggested later in the letter.
6	The writers describe the construction in way of the forward well deck, and also in way of the shelter deck tonnage openings as seen by them in the sister ship "VAUBAN". In particular, they refer to (contd. overleaf)	This description is difficult to follow in the absence of plans, and an attempt has been made to indicate pictorially the arrangements stated to have been seen by the writers. This is appended.

PAGE.	STATEMENT.	COMMENTS.
6	two booby hatches over companion-ways leading to the shelter deck space. These booby hatches are stated to be fitted with wooden doors "of light construction, "without any means provided of "making them secure".	(See previous page, and see pictorial sketch attached) The booby hatches to which reference is made are shewn on the sketch, and are sometimes fitted so that steerage passengers berthed in the 'tweendecks may have access to the air. No information is available in regard to the nature of the construction of these hatches, but it is very unlikely that they were not substantially built and equal at least in strength to the standard represented by the hatch construction adjacent to them.
6	It is stated that none of the openings in the intermediate bulkheads in the shelter deck space are fitted with watertight doors.	Watertight doors are never fitted to such openings, as this would involve the inclusion of such spaces in the tonnage measurement of the vessel.
6&7	Reference is made to the fact that the coal hatches leading from the starboard shelter deck bunker to the 'tweendeck bunker have coamings between 8 and 10 inches in height, and that similar hatches but without coamings lead from the 'tween deck bunkers to the lower bunkers at the bottom of the ship. The writers state they are advised that it was the custom on the "VESTRIS", and is now the custom on the "VAUBAN", to omit any covers on these hatchways, so that the trimming of the coal may be facilitated.	So far as the height of coamings is concerned, the arrangement referred to is in accordance with the Rules, and is almost universally adopted in these spaces. As the shelter deck space is, however, not an intact superstructure, battens and covers should have been provided. It is quite likely that these battens and covers were not in place, for the reason stated. Scuppers are also supposed to be provided in this space, but it is known that these scuppers are frequently closed by Shipowners before a vessel goes to sea.
7	It is stated that the tonnage opening in the working alleyway in the shelter deck space in the "VESTRIS" was covered by a piece of sheet iron bolted to the bulkhead plating, and that the opening into the bunker space from the thwartship alleyway was secured merely by planks provided for the purpose of keeping the coal in the bunker.	These intermediate bulkhead divisions need not have any covers fitted to their openings. They are not considered to possess any structural or watertight value, and the arrangement indicated is permitted by the Freeboard Regulations. The basis of the Freeboard Regulations in this respect is that the openings into the shelter deck space fitted in way of the tonnage opening are supposed to be temporarily but efficiently closed, and that being so, no importance is attached to the openings in any intermediate division.
7	It is stated that the tonnage opening leading into the starboard shelter deck bunker had no coaming.	The Regulations do not require that this opening should be provided with a coaming, as the "temporary but efficient" means of closing may extend to the deck. This is a perfectly reasonable provision, as the storm boards are required to be fitted in channels permanently riveted to the bulkhead plating.

PAGE.	STATEMENT.	COMMENTS.
8&9	On these pages is set forth a theory as to the cause of the disaster, a summary of which is as follows:- It is stated that the so-called "lightly constructed doors" of the booby hatches in the forward well were injured or carried away, and water in large volume found its way into the space below the shelter deck, from which, after it had attained there a certain depth, it flowed into the spaces immediately below, including the fire room. The admission of this water in large volume produced a list, which submerged the bottom of the coal door previously referred to, through which further additional quantities of water entered the ship. Sd Akitch.	No information is available in regard to the construction of the booby hatches or the doors fitted to them, so that nothing definite can be said on this point. The theory advanced, however, involves implications which it is difficult - if not impossible - to accept. The water which entered the ship through the booby hatch doors if carried away did so in weather which was not of exceptional severity, and must have continued to do so, and to produce a gradual list, for some considerable time. It is difficult to believe, in these circumstances, that the officers and crew of the "VESTRIS" shewed a degree of apathy and indifference which precluded them from taking immediate steps to repair the hatchways. These hatchways were easily accessible, and it should have been an easy matter not only to have determined the source of the leakage, but to have arrested its course.
9	It is stated that the "VAURAN" had the same construction as the "VESTRIS" and was also classed with Lloyd's Register.	This is not so. The "VAUBAN" is classed with the British Corporation.
9	In the writers' opinion, and in the opinion of their Consulting Marine Expert, the construction summarised above, and given in the letter, is exceedingly dangerous, and they find it difficult to understand how water in considerable quantities can be kept from the bunkers of a ship so constructed, whenever the forward well deck is awash.	This statement is not concurred in. It does not appear that there is any element of danger involved in the construction described, provided the construction of the booby hatches was substantial and efficient. In this connection, it is important to remember that this ship has been trading, under all conditions of weather, since 1912, and has been trading on the American coast for the past five years, and there is no evidence to shew that, during that time, water in considerable quantities could not be kept from the bunkers of the ship.
10	It is stated that the writers are advised that the "VESTRIS" was known to be a tender ship. Calculations made by qualified experts at the U.S.Navy Yard have shewn that the vessel's stability was at the lowest possible margin of safety. (continued overleaf)	No information is available which would enable an exact opinion on the stability of this vessel to be offered. The general proportions of the ship have been examined, and it is found that they correspond with those of ships of a similar type built about the same period. (continued overleaf)

PAGE	STATEMENT	COMMENTS
10 (contd.)	It is said that the Owners were ignorant of the exact metacentric height of the "VESTRIS"subsequent to the installation of certain refrigerating machinery, and the opinion is expressed that it is important to know the ship's metacentric height.	It is quite true that modern ships have more beam, and are therefore not so tender as a ship of the type of the "VESTRIS" would be, but that must not be held to imply that the stability of the "VESTRIS" was in any way insufficient. In fact, even assuming that the metacentric height of the "VESTRIS" was small, the geometric form of the ship suggests that she had an extended range, and that her stability was satisfactory, provided the openings in the sides of the vessel remain intact. The writers are probably not aware of the relation of metacentric height to stability. The metacentric height is a factor known to naval architects which measures the tendency of the ship to return to the upright [redacted], and is only constant for small angles. It is quite possible to have a vessel with a small metacentric height and a large and perfectly satisfactory range of stability, and on the other hand, it is possible to have a vessel with a large metacentric height and a range of stability which could not be considered satisfactory. The writers' remarks, therefore, on the importance of knowing the metacentric height, will not meet with general agreement, and furthermore, the possession of this information could only be held to be important if there also exists the requisite knowledge and experience to enable a reasonable and correct use to be made of it. In the absence of this knowledge and experience, its possession might even be dangerous.

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