



OCTOBER 19, 2011

CIRCULAR NO. 29/11

TO MEMBERS OF THE ASSOCIATION

Dear Member:

PRE-EMPLOYMENT MEDICAL EXAMINATION (PEME) PROGRAM: AMENDMENTS TO THE CLUB'S PEME PROGRAM EFFECTIVE NOVEMBER 1, 2011

Your Managers are pleased to report the further development of the Club's PEME program.

New American Club PEME medical form

As of November 1, 2011, the American Club PEME Medical Form has been recast into a single form for use in respect of all seafarers originating from countries requiring mandatory Club approved PEMEs and Club approved clinics. These countries are Bulgaria, India, Indonesia, Latvia, the Philippines, Poland, Romania, the Russian Federation and Ukraine.

New security requirements for the American Club PEME form

Also effective from November 1, 2011, Club-approved clinics are required to affix a uniquely numbered hologram security sticker to each and every PEME medical form. This is to improve the security of our forms and thereby protect Members from fraudulent PEME documentation.

PEME medical guidelines

In conjunction with the new American Club PEME medical form, the associated medical guidelines have also been updated as the Guidance on Standards for Pre-Employment Medical Examination (PEME) Program.

Guidance for Members, manning agents and Club-approved clinics

In order to further assist and facilitate the smooth implementation of the Club's PEME program, two additional sets of guidelines have been provided to assist Members and their manning agents, as well as the Club-approved clinics, as follows:

- Guidelines for Members and Manning Agents for Compliance with the American Club Pre-Employment Medical Examination (PEME) Program; and
- Guidance for Club Approved Clinics for Compliance with the American Club Pre-Employment Medical Examination (PEME) Program.



All documents mentioned above are posted on, and can be found at, the Club's website at www.american-club.com under the Loss Prevention section.

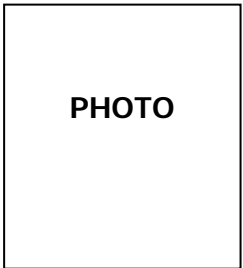
Should Members have any questions, they are asked to contact Dr. William Moore, Senior Vice President at +1 212 847 4542 or by e-mail at william.moore@american-club.com.

Yours faithfully,

Joseph E.M. Hughes, Chairman & CEO
Shipowners Claims Bureau, Inc., Managers for
THE AMERICAN CLUB



AMERICAN CLUB PRE-EMPLOYMENT MEDICAL EXAMINATION FORM



IMPORTANT: The original of this form is to be kept by the clinic.

Name :						
	Last Name		First Name		Middle Name	
Mailing Address :						
Date of Birth	Blood Group	Place of Birth (City / Country)		Name of Ship		
Medical Certificate No.		Seafarer's Certificate No.				

Seafarer's Signature

Date:

/ /

Examination	Results of the examination		Examination	Results of the Examination	
	Pass	Fail		Pass	Fail
1. Medical History Questionnaire (attached)	<input type="checkbox"/>	<input type="checkbox"/>	13. Ultrasound examination (presence of gall & kidney stones)	<input type="checkbox"/>	<input type="checkbox"/>
2. Physical Examination	<input type="checkbox"/>	<input type="checkbox"/>	14. Hep B Antigen	<input type="checkbox"/>	<input type="checkbox"/>
3. Dental Examination	<input type="checkbox"/>	<input type="checkbox"/>	15. VDRL	<input type="checkbox"/>	<input type="checkbox"/>
4. Psychological Test	<input type="checkbox"/>	<input type="checkbox"/>	16. HIV Test	<input type="checkbox"/>	<input type="checkbox"/>
5. Visual Test	<input type="checkbox"/>	<input type="checkbox"/>	17. Stress Test	<input type="checkbox"/>	<input type="checkbox"/>
6. Color vision	<input type="checkbox"/>	<input type="checkbox"/>	18. Diabetes	<input type="checkbox"/>	<input type="checkbox"/>
7. Audiometry	<input type="checkbox"/>	<input type="checkbox"/>	19. Fasting Blood Sugar	<input type="checkbox"/>	<input type="checkbox"/>
8. Chest X-ray	<input type="checkbox"/>	<input type="checkbox"/>	20. Glycosylated Haemoglobin (HbA1c)	<input type="checkbox"/>	<input type="checkbox"/>
9. EKG / ECG	<input type="checkbox"/>	<input type="checkbox"/>	21. Liver Function Test (SGPT & SGOT)	<input type="checkbox"/>	<input type="checkbox"/>
10. Urinalysis	<input type="checkbox"/>	<input type="checkbox"/>	22. Alcohol/Drug Test	<input type="checkbox"/>	<input type="checkbox"/>
11. Fecalalysis (food service/handlers only)	<input type="checkbox"/>	<input type="checkbox"/>	23. Spirometry	<input type="checkbox"/>	<input type="checkbox"/>
12. Complete Blood Count	<input type="checkbox"/>	<input type="checkbox"/>			

If failed in any above mentioned examinations, please provide reasons with examination number :

The acceptance or failure of the medical tests is based upon the *American Club Pre-Employment Medical Examination-Acceptance Guidelines*.

Name of Medical Clinic:		Signature of Physician <div style="border: 1px solid black; width: 100%; height: 40px;"></div> Official Seal 
Address of Medical Clinic:		
Contact Phone:		
Contact Fax:		
Name and Degree of Physician:		
Name of Physician's Licensing:		
Date of Issue of Physician's License:		
Date of Examination:		



**AMERICAN CLUB
MEDICAL HISTORY QUESTIONNAIRE**

Hologram Sticker No.

Dr.'s Initials

PHOTO

Name:				Date of Birth :	/	/
Address :						
	Seaman Certificate No.:			Phone :		
Employer :			Vessel :			Job Title :
In Emergency, Notify :			Relationship :			Ph. :
Personal Physician or Clinic :						
Address :						
	Physician's Phone :					

Seafarer's Signature

Date :

/ /

ALLERGIES: _____

Family History Has anyone in your family ever had :								
	Yes	No		Yes	No		Yes	No
Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	Heart Disease	<input type="checkbox"/>	<input type="checkbox"/>	Mental Illness	<input type="checkbox"/>	<input type="checkbox"/>
High Blood Pressure	<input type="checkbox"/>	<input type="checkbox"/>	Cancer	<input type="checkbox"/>	<input type="checkbox"/>	Epilepsy/Seizure	<input type="checkbox"/>	<input type="checkbox"/>

If "Yes", to any of the above, please explain:

Any other major conditions?

MALES ONLY			If yes, give details :	FEMALES ONLY		
	Yes	No			Yes	No
Prostate Problems	<input type="checkbox"/>	<input type="checkbox"/>		Pregnancy	<input type="checkbox"/>	<input type="checkbox"/>
Testicular Lumps	<input type="checkbox"/>	<input type="checkbox"/>		Breast Lumps	<input type="checkbox"/>	<input type="checkbox"/>
Penile Discharge	<input type="checkbox"/>	<input type="checkbox"/>		Menstrual Problems	<input type="checkbox"/>	<input type="checkbox"/>

Are you currently under a doctor's care? Yes No

If Yes, for what problem(s)?

Physician(s) Name/Address (if different than noted on page 1):

History of surgeries/hospitalizations : Yes No Date : / /

If yes, give details :

Date of last tetanus Vaccination:	/ /	(dd/mm/yyyy)
Other Vaccinations . Mention :	/ /	
Date of last dental cleaning:	/ /	(dd/mm/yyyy)
Date of recent dental work:	/ /	(dd/mm/yyyy)

Do you have or have received treatment for the following:

	YES	NO		YES	NO
Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	Jaundice or Hepatitis	<input type="checkbox"/>	<input type="checkbox"/>
Heart Trouble	<input type="checkbox"/>	<input type="checkbox"/>	Dizziness	<input type="checkbox"/>	<input type="checkbox"/>
High Blood Pressure	<input type="checkbox"/>	<input type="checkbox"/>	Back Problems	<input type="checkbox"/>	<input type="checkbox"/>
Shortness of Breath	<input type="checkbox"/>	<input type="checkbox"/>	Slipped Disc	<input type="checkbox"/>	<input type="checkbox"/>
Chest Pain	<input type="checkbox"/>	<input type="checkbox"/>	Wrist Problems	<input type="checkbox"/>	<input type="checkbox"/>
Chronic Cough	<input type="checkbox"/>	<input type="checkbox"/>	Fractured Vertebrae	<input type="checkbox"/>	<input type="checkbox"/>
Asthma	<input type="checkbox"/>	<input type="checkbox"/>	Arthritis / Gout	<input type="checkbox"/>	<input type="checkbox"/>
Tuberculosis	<input type="checkbox"/>	<input type="checkbox"/>	Kidney Problems	<input type="checkbox"/>	<input type="checkbox"/>
Rheumatic Fever	<input type="checkbox"/>	<input type="checkbox"/>	Cancer / Tumor	<input type="checkbox"/>	<input type="checkbox"/>
Frequent Headaches	<input type="checkbox"/>	<input type="checkbox"/>	Rash or Skin Problem	<input type="checkbox"/>	<input type="checkbox"/>
Vision Problems	<input type="checkbox"/>	<input type="checkbox"/>	Hernia / Hydrocele	<input type="checkbox"/>	<input type="checkbox"/>
20/20 Vision	<input type="checkbox"/>	<input type="checkbox"/>	Varicose Veins	<input type="checkbox"/>	<input type="checkbox"/>
Epilepsy	<input type="checkbox"/>	<input type="checkbox"/>	Drug Problems	<input type="checkbox"/>	<input type="checkbox"/>
Hearing Problems	<input type="checkbox"/>	<input type="checkbox"/>	Mental Breakdown	<input type="checkbox"/>	<input type="checkbox"/>
Psychological Impairment, Depression or Mental Illness	<input type="checkbox"/>	<input type="checkbox"/>			
Sexually Transmitted Disease	<input type="checkbox"/>	<input type="checkbox"/>			

	Yes	No	
Do you or did you smoke?	<input type="checkbox"/>	<input type="checkbox"/>	How long?
			Packs per day?
Do you use alcoholic beverages?	<input type="checkbox"/>	<input type="checkbox"/>	How much/often?
Do you use or take any drugs?	<input type="checkbox"/>	<input type="checkbox"/>	Mention drugs used below :

Are you presently on any medication : Yes No

If yes, Please list prescription and over the counter medications you take regularly:

Would you say that your health is (please check one): Excellent Good Fair

DECLARATION

I, _____, Seaman's Number _____, **Hereby Declare that** I have made full disclosure of all of my medical history to the Doctors and staff of this Clinic. I am aware that the information supplied by forms the basis upon which I will be offered employment as a Seafarer. I understand that in the event of any misrepresentation either by statement or omission I will lose the right to benefit from sick pay and / or compensation which would otherwise be due under the Contract of Employment or under any Collective Bargaining Agreement. **I Also Hereby** consent to my medical records being made available upon demand to my employers and/or the Owners and/or Insurance of the Vessel or their authorized representatives.



AMERICAN CLUB

GUIDANCE FOR CLUB APPROVED CLINICS FOR COMPLIANCE WITH THE AMERICAN CLUB PRE-EMPLOYMENT MEDICAL EXAMINATION (PEME) PROGRAM

First Edition

November 2011



INTRODUCTION

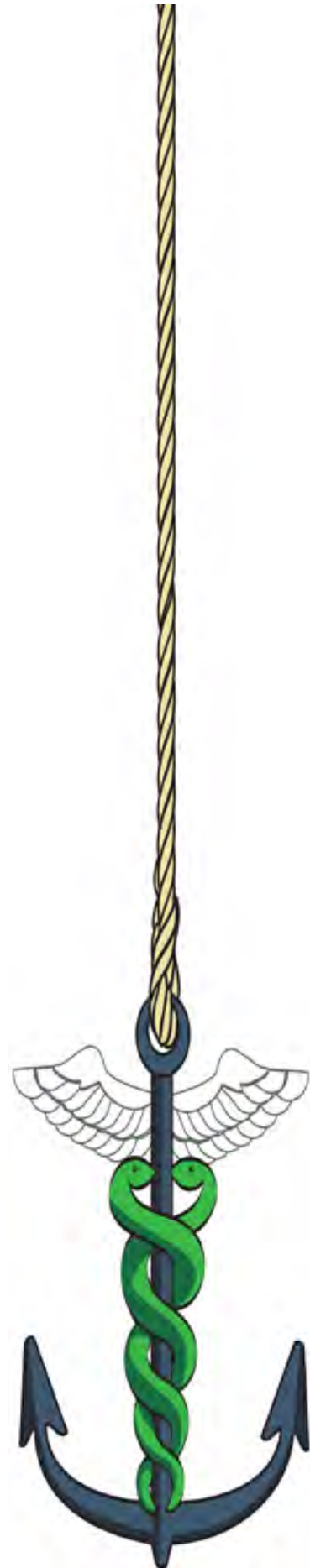
The objective of this document is to provide guidance to American Club-approved clinics of their requirements in completing the American Club's Medical Examination Form in association with the November 2011 amended and updated American Club PEME Forms and Guidance on Standards for Pre-Employment Medical Examinations (PEMEs).

Please review these guidelines in detail and ensure you and your staff are acquainted with the American Club's requirements as a Club approved PEME medical facility.

The success of the Club's PEME program relies mostly upon you and the high quality of medical expertise used to determine the fitness of seafarers employed aboard American Club entered vessels.

Thank you.

Dr. William Moore
Senior Vice President
Shipowners Claims Bureau, Inc., Managers
American Club
New York, NY USA



1. Summary of significant changes to the Club's PEME program

a. Change of American Club PEME Forms

- 1.1 Please note that there is a single form to be used for the Club approved PEMEs. The Club no longer has separate forms relevant to each country.
- 1.2 The Club approved PEME forms are in a fillable Adobe Acrobat format (.pdf file) that we hope will be easier to complete by the clinic personnel and attending physicians.
- 1.3 You will note that the seafarer's picture must be provided on the PEME form.
- 1.4 You will note that a unique and individually numbered security hologram sticker that has been provided by the American Club. With regards to the use of the security hologram sticker:
 - 1.4.1 the hologram sticker **MUST BE** placed onto the first page of the PEME form in the designated location; and
 - 1.4.2 the attending physician **MUST** write the unique number of the hologram sticker on **EVERY** page of the American Club PEME Form along with their initials. Again, **this must be done on every page.**
- 1.5 **The American Club PEME is not considered completed until the entire form has been completed in full. No relevant space or question is expected to not be completed. If this is not done, the PEME is not deemed to have been completed.**
- 1.6 Clinics will note, most importantly, that they are asked to give a direct answer as to whether the seafarer is found *fit for duty*, *temporarily fit for duty* or *unfit for duty*. This must be completed so the Club can determine the overall status of the examination.

b. Changes to the *Guidance on Standards for Pre-Employment Medical Examinations (PEMEs)*

- 1.7 We strongly encourage our Club approved clinics ensure the review the amended version of the *Guidance on Standards for Pre-Employment Medical Examinations (PEMEs)* as there has been some significant amendments to the these standards.
- 1.8 Please note that the Club is aware of the fact that all tests may not be able to be performed as such tests are governed by national regulations and laws. For example, HIV testing. Please let us know of any such requirements as we are aware that this may be the case and can provide some dispensation related to those examinations.

2. Other Important reminders

- 2.1 If a seafarer has been deemed as conditionally 'fit for duty', e.g. requiring certain oral medications, a separate note should be attached to the Club PEME form providing the details of what medication is required and in what dosage.

- 2.2 As all clinics are aware, the PEMEs have not been extended to 2 years validity from the date of examination. Therefore, it is absolutely important that the detailed American Club PEME Form is completed in its entirety so we ensure a complete picture of the seafarer's condition.
- 2.3 **Finally again, the PEME is not considered completed if until ALL examinations as required have been performed. Shipowners and manning agents do not have the option of requesting that only certain tests are performed and not others.**



AMERICAN CLUB

GUIDANCE ON STANDARDS FOR PRE-EMPLOYMENT MEDICAL EXAMINATIONS (PEMEs)

Second Edition

November 2011



INTRODUCTION

General

In Spring 2004, the American Club instituted the Pre-Employment Medical Examination (PEME) program in the two largest labor supplying countries providing seafarers to Member's vessels: Ukraine and The Philippines. On 20 February 2006, the Board of Directors of the American Club made it mandatory for all Members to use the Club approved clinics in these countries or be subject to a double-retention deductible for illness claims. The program was further extended in 2006 and 2008 to include seafarers from Bulgaria, India, Indonesia, Latvia, Poland, Romania and Russian Federation.

The primary objective of the Club's PEME program is to protect shipowners from claims arising from medical conditions existing prior to employment and to provide crew with a stringent structure health check **before** going to sea.

We recommend that Members review the list of examinations carefully with their crewing departments and manning agents for each country from where seafarers are employed. There have been some changes to the examinations so Members need to check these amendments carefully.

In addition, Members should remain vigilant with their manning agents to ensure PEMEs are carried out objectively and without influence from the manning agent, its principle or the seafarer.

We also would like to reiterate that these standards and relevant American Club PEME forms must be completed in their entirety and ALL required tests must be completed as stated. Otherwise, the PEME requirements are not deemed as fulfilled.

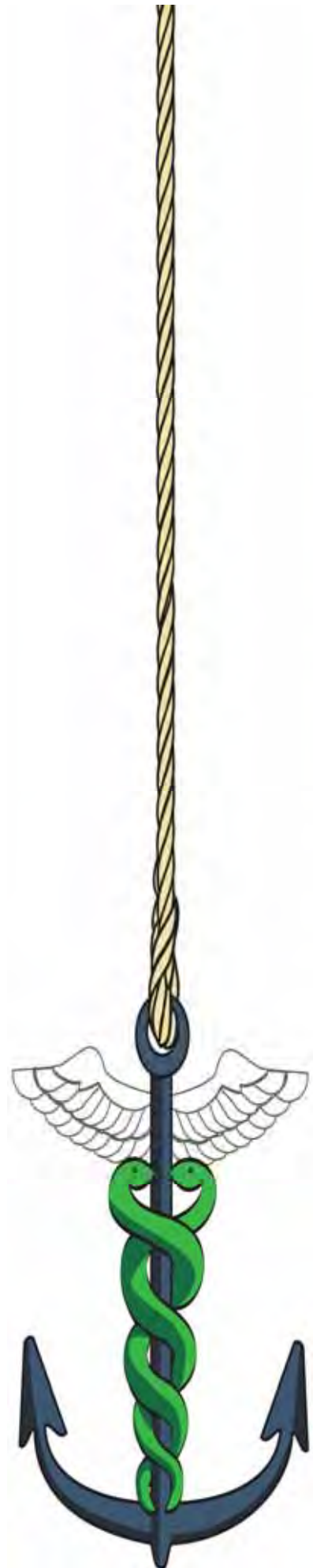
The examinations are comprehensive from the perspective of the American Club PEME program. However, certain tests and procedures may be subject to local or national laws and regulations (e.g. HIV testing) and Members should ensure that they have a clear understanding of any limitations that this may create to them in the medical examination process.

We hope this guidance will help Members and American Club approved medical facilities in providing a consistent set of standards for controlling pre-existing condition illness claims.

Please keep in mind that these Guidelines are a living document and will be periodically updated and upgraded to further refine the PEME program.

If you have any questions or comments concerning the PEME Guidelines, please feel free to contact us for further assistance.

Dr. William Moore
Senior Vice President
Shipowners Claims Bureau, Inc., Managers
American Club
New York





AMERICAN CLUB PRE-EMPLOYMENT MEDICAL EXAMINATION ACCEPTANCE GUIDELINES (Second Edition)

INTRODUCTION

The following parameters should be used as guidance for considering a seafarer or other shipboard personnel as being medically fit for duty. There are variations in acceptability standards depending upon many different factors but these are the standards that the American Club deems a seafarer as being found as 'fit for duty'.

PLEASE NOTE THAT UNLESS ALL TESTS ARE COMPLETED AND THE CLUB APPROVED PEME FORM IS COMPLETED IN FULL, THE PEME IS NOT DEEMED AS COMPLETED. ALL APPROVED PHYSICIANS AND MEMBER REPRESENTATIVES ALIKE SHOULD ENSURE THAT THE FORMS ARE COMPLETED IN FULL.

1. Medical History Questionnaire

Ensure that the medical history questionnaire is completed and in particular the Declaration at the completion of filling out this form. The Declaration is important should there be a future claim that may have been related to a pre-existing condition that may have not been reported.

2. Physical Examination

A basic physical examination should include at a minimum measurements of height, weight and blood pressure. In addition, medical discretion should be used to consider if there are any abnormalities through a simple visual and physical examination of the seafarer.

a. Body Mass Index (BMI)

- Kilograms and meters (or centimeters) Formula: weight (kg) / [height (m)]²
- Pounds and inches Formula: weight (lb) / [height (in)]² x 703

With the metric system, the formula for BMI is weight in kilograms divided by height in meters squared. Since height is commonly measured in centimeters, divide height in centimeters by 100 to obtain height in meters.

Example: Weight = 68 kg, Height = 165 cm (1.65 m)
Calculation: $68 \div (1.65)^2 = 24.98$

Calculate BMI by dividing weight in pounds (lbs) by height in inches (in) squared and multiplying by a conversion factor of 703.

Example: Weight = 150 lbs, Height = 5'5" (65")
Calculation: $[150 \div (65)^2] \times 703 = 24.96$

The standard weight status categories associated with BMI ranges for adults are shown in the following table.

BMI Weight Status

Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

If the BMI is 30 or above, should be informed of their increased health risk.

Seafarers with a BMI reading of 33 to 34.5 should be designated as temporarily unfit for duty until the BMI index can be reduced by at least 3 points. A BMI reading of above 34.5 should be considered unfit for duty until the BMI is reduced by at least 4 points.

b. Blood pressure

Blood pressure measured between 110/60 to the upper limit of 140/90.

3. Dental Examination

Visual test to identify teeth with problems (crooked, cavity, removed, etc.) and properly document those abnormalities—a dental chart with this information will be sufficient. If there are any teeth or oral conditions that could possibly worsen and need for a dentist's attention during the duration of the seafarer's contract at sea, these should be rectified before being considered fit for duty.

4. Psychological

Preferably the 16 PF® Questionnaire but not required if other tests are preferred. In some jurisdictions, a seafarer could also provide Military ticket or certificate that proves that they were not committed to a mental hospital or facility.

5. Visual Tests

Standard tests (Snellen—standard letter 'tests'). Deck watch keeping personnel should have, at a minimum, 20/20 vision. For personnel without watchkeeping duties, consideration should be made on a case-by case basis if outside this guideline.

6. Color Vision

Ishihara/Rapkin test –Seafarers with watchkeeping duties should be given to ensuring no color differentiation problems with red and green. For personnel with non-watchkeeping duties, consider on a case-by-case basis.

7. Audiometry

Standard hearing test and a 'Whisper Test'. The Whisper Test is performed 3-6 meters (10 to 20 feet) away from the applicant to determine if they can hear from a distance.

- For deck personnel, the minimum distance for the Whisper Test is 3 meters (10 feet).
- For engine room personnel, the minimum distance for the Whisper Test is 3.5 meters (11.5 feet).

Regarding the use of hearing aids, it is recommended that seafarers are evaluated on a case-by case basis depending upon the seafarer's job function and any flag State restrictions if applicable.

Fitness for sea-service without restrictions: Unaided hearing unimpaired (i.e. <30dB loss on audiometry or not in definitely impaired category on speech recognition test).

8. Chest X-Ray

Annual chest x-ray (i.e. once every year) to check for any recognizable abnormalities. X-rays should be properly labeled as "Anterior/Posterior" or "Posterior/Anterior."

9. Electro Cardiogram (ECG or EKG)

Standard testing to determine if there are abnormalities.

10. Urinalysis

- If hematuria (blood in urine) is observed, then an ultrasound should be conducted and if it shows further small abnormalities, then crewman has option of an Intravenous Pyelogram (IVP).
- If it is found that there is protein and/or glucose in the urine, assess further because it can show a potential problem (e.g. hypertension, kidney problems or diabetes).

11. Fecalalysis (required only for food service or food handling personnel)

Non-obligatory for standard ship crew but obligatory for food service personnel.

12. Complete Blood Count

Examinations are to be made for the following:

- Cholesterol
- Creatinine
- BUN
- BUA
- ESR
- Thrombocytes
- Anti HCV
- Check for anemia
- Platelet count
- White-blood cell count

13. Ultrasound examination

An ultrasound examination should be conducted general assessment of the abdomen and pelvis with particular attention to the detection of gall stones and kidney stones.

14. Hep B Antigen

If screening is positive then further profile should be considered depending upon seafarer's exposure. If candidates are found to be HBsAg positive, further testing (HBe Ag and anti HBe Ab) should be considered. If HBs Ag is positive, a candidate with HBe Ag negative, HBe Ab positive, normal USG findings with normal LFT may be declared fit.

15. Hep C Antibodies

The anti HCV (test for detecting antibodies to Hepatitis C) is to be conducted. The cut off is either positive or negative.

16. VDRL

If VDRL test is found positive, a T. Pallidum Hemagglutination Assay can be considered as an additional test at the Member's discretion.

17. HIV Test

The American Club has required testing for Human Immunodeficiency Virus (HIV) for seafarers however there are countries where such testing is either illegal or must be conducted with the seafarers consent. Consideration should be given to the relevant laws and regulations of each nation as to how and if the test is to be conducted.

18. Stress Test

Stress tests should be performed under two conditions if:

- indicated by abnormalities during resting ECG/EKG, stress test should be performed to determine if there are any other abnormalities; or
- If the seafarer is 40 years of age or older.

19. Diabetes

A seafarer can be considered fit for duty with restrictions on a case-by-case basis for those taking oral medication only. This is to be done at the owners / doctors discretion provided that proper oral medication is provided for duration of time at sea or at least 3 months with a provision to replenish oral medication before prescription is finished. The Club should be notified of such cases in writing.

Seafarers taking non-oral medication **are not** acceptable and should be designated as unfit for duty.

20. Laboratory Blood Work Up on an Overnight Fasting Status

Candidates are recommended to report to the clinic on an overnight fasting status of 12 to 14 hours after dinner. The candidates must be advised to avoid consumption of any beverages like, milk, tea, coffee, aerated drinks or juices. The following group of tests should be considered under the Fasting Blood Sugar examination:

- Glucose
- Cholesterol (to include a lipid profile [i.e. Total Cholesterol (HDL/LDL) Triglycerides])
- Creatinine
- Blood Urea Nitrogen (BUN)
- Uric Acid
- Erythrocyte sediment test
- Thrombocytes

21. Glycosylated Haemoglobin (HbA1c)

Clinics must use the HbA1c test to determine if diabetes is present.

22. Liver Function Test (SGPT & SGOT)

SGOT between 8-38 and an SGPT level between 9-52 are considered normal.

If abnormal, then it is recommended that a full liver function test (LFT) be performed.

23. Alcohol/Drug Test

At a minimum, tests for the following should be considered:

- alcohol abuse (various tests above can possibly detect alcohol abuse such as SGOT and SGPT testing);
- THC/cannabis;
- cocaine;
- barbiturates; and
- amphetamines.

24. Spirometry

Consider the spirometry derived values: forced expiratory volume in 1 second (FEV1), forced vital capacity (FVC).

- Calculate the FEV1/FVC ratio (i.e. *Tiffeneau index*).
- Compare these with the individual's predicted values (based on age, sex, race and height).

a. Restrictive and obstructive patterns

Abnormal spirometry is divided into restrictive and obstructive ventilatory patterns:

- *Restrictive ventilatory pattern*: due to conditions where lung volume is reduced, e.g. fibrosing alveolitis, scoliosis. The FVC and FEV1 are reduced proportionately:
 - FVC reduced <80%.
 - FEV1 reduced.
 - FEV1/FVC normal.
 -
- *Obstructive ventilatory pattern*: due to conditions in which airways are obstructed due to diffuse airways narrowing of any cause, e.g. asthma, COPD, extensive bronchiectasis, cystic fibrosis, lung tumors. The FVC and FEV1 are reduced disproportionately:
 - FVC normal or reduced.
 - FEV1 reduced <80%.
 - FEV1/FVC reduced <70%.