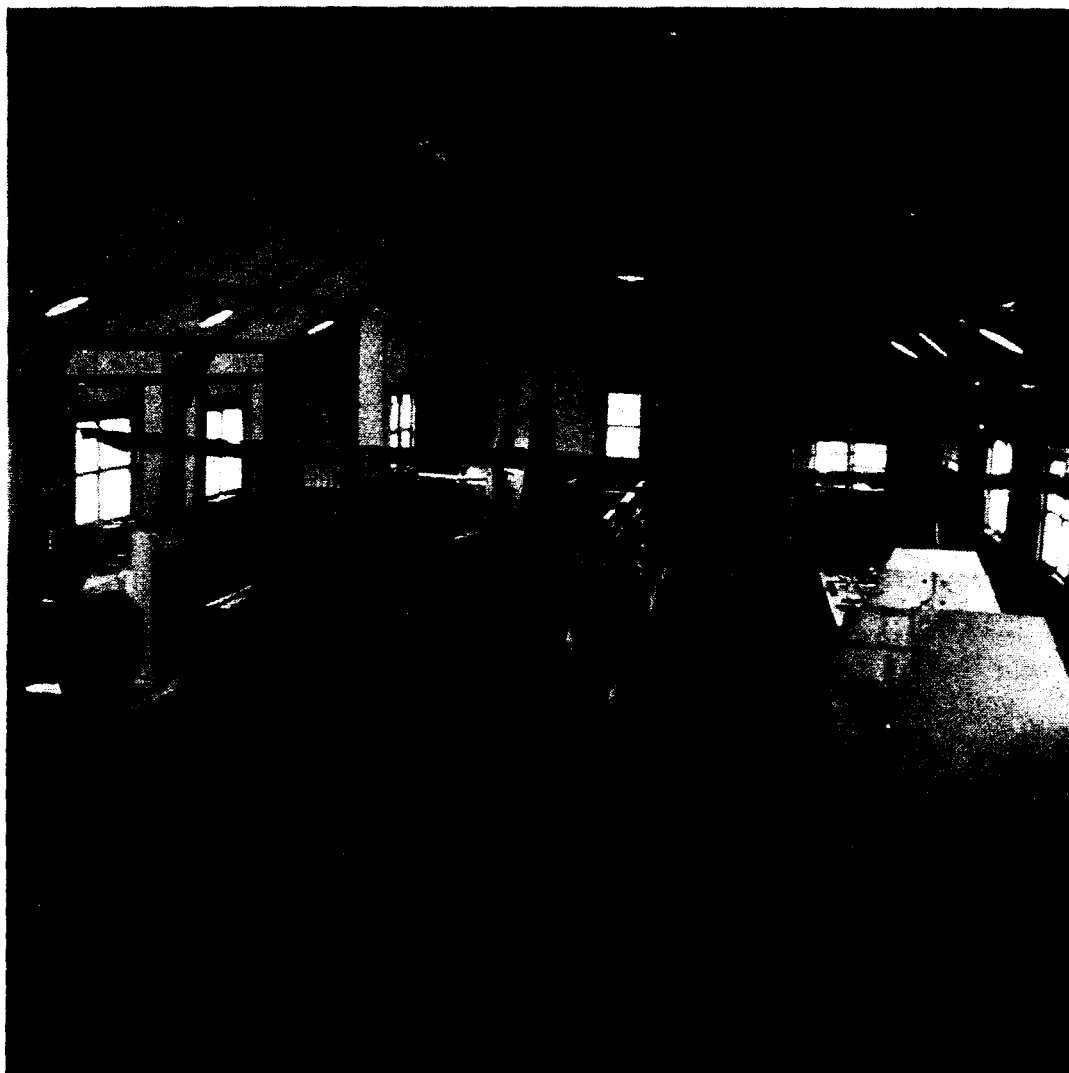

H.M.S. 'ALAUNIA'

BY

HER OFFICERS

H.M.S. *Alaunia* is an ex-Cunarder purchased by the Service, and now moored in the Hamoaze, Devonport, close by the old hulks which were *Defiance*. Her high freeboard and merchant service lines make her conspicuous even among the aircraft carriers. *Alaunia's* functions are to accommodate the following :—

- (a) Mechanical Training Course for the Devonport Division.
- (b) Junior I.C.E. Course for ratings of all Port Divisions.
- (c) Port Repair Organization.



THE BRICKWORK SHOP

Unusualness as a naval ship is not limited only to her appearance : her Captain, Executive Officer and First Lieutenant all belong to the Engineering Branch, and most of the executive duties of the ship are carried out by engineer officers and ratings.

HISTORY OF THE SHIP

Alaunia, displacing 19,000 tons, was built in 1925 by John Browns' of Glasgow for the Cunard White Star Company, and saw her first service on the North Atlantic run. In 1939, she became an armed merchant cruiser and served on escort duties, and as a supply ship, in the Far East and the Persian Gulf. In 1944 she was converted to a repair ship and allocated to the British Pacific Fleet, based at Singapore, until 1946. In 1947, she was commissioned at Devonport as a heavy repair ship, and her training functions were later added.

It was then generally accepted that *Alaunia* had earned a graceful retirement as a seagoing ship ; but in 1953 the Commander-in-Chief, Plymouth, suggested that she might be used as an accommodation ship for Plymouth personnel at the Coronation Review. This was approved, and the ship once again prepared for sea.

Once again *Alaunia* was being unusual. A Sailing Master (Captain T. Masterman, R.N.), and appropriate watchkeeping executive officers, were appointed for the trip. The Captain (E) retained military command of the ship

' as an establishment '. Both Captains, in their reports, comment with sympathy on the job of the Commander who found himself, as it were, serving two masters. Nearly all the upper deck duties were carried out by engineering ratings, and perhaps it is relevant here to quote a sentence from Captain Masterman's report. He said : ' In conclusion, I would like to mention the extreme courtesy and spirited efficiency with which everyone accepted the imposition of me personally, and conditions to which they were unaccustomed as a Branch : from the Captain (E), to whom my presence cannot have been palatable, down to the junior ratings of the ship, who gladly substituted a marlin spike for a wheel spanner and wielded it with equal ability when shown how.'

The only snag of the trip, curiously enough, was reported by the Engineer Officer. This was the initial difficulty of getting watchkeepers used to steaming with cylindrical boilers, and dealing with feed water supply. Perhaps that was what prompted the Chief to remark, quite unofficially, that whereas normally in *Alaunia* he was surrounded by a surfeit of officers only too willing to tell him his job, once she started steaming for Spithead, none could be found.

PORT REPAIR ORGANIZATION

The Port Repair Officer, who is also the Engineer Officer, has a small permanent staff consisting of Chief and E.R.A.s. The remainder of the hands are supplied daily by the Royal Naval Barracks as a working party composed of E.R.A.s and mechanics, as they are available. Besides its normal work, the organization deals with emergency repairs, within the capabilities of the ship, during those periods when the dockyard is closed. The workshops available are two light and one heavy machine shops, coppersmiths' and blacksmiths' shops, foundry and patternmakers' shop.

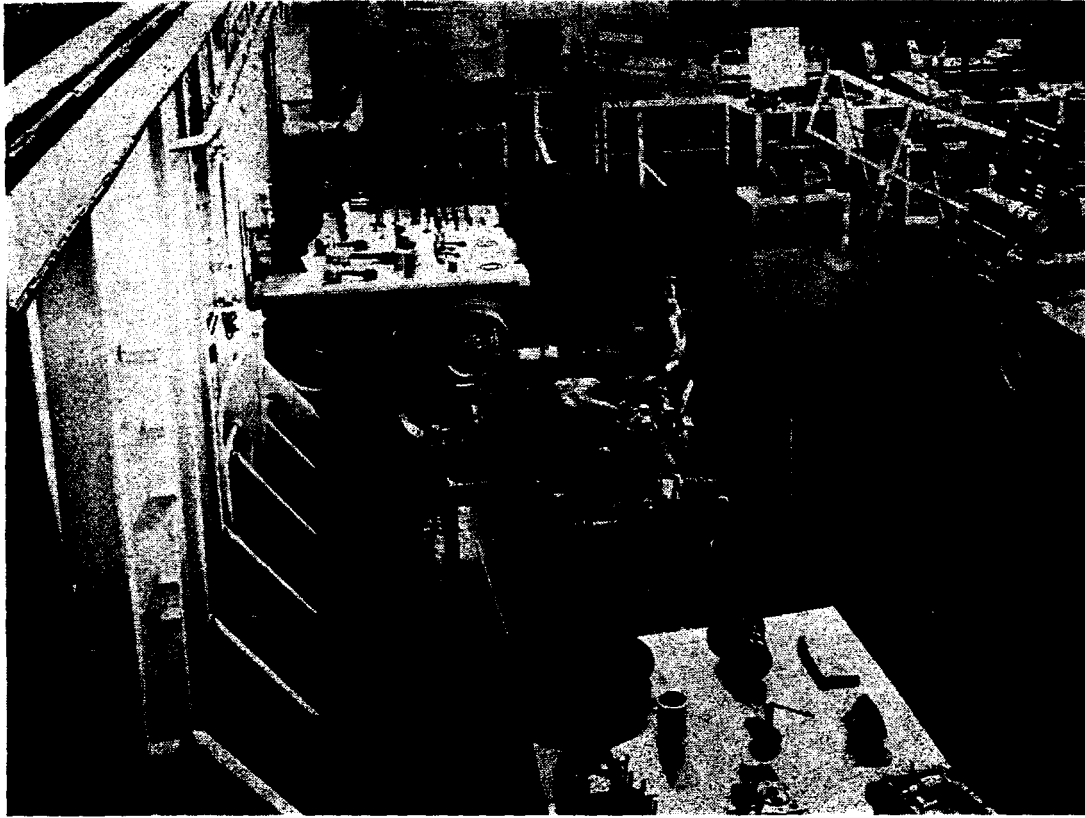
TRAINING

Alaunia is primarily a Training Ship, and, apart from Part II new entry training for a small number of National Service ratings, provides facilities for the majority of the local courses required by the technical branches. The two main courses, accounting for over 90 per cent of the training task, are the Mechanical Training Course and the Junior I.C.E. Course. In addition, are smaller courses in welding, refrigeration, preservation, identification and packing, and paint spraying.

The Mechanical Training Course

This course may be said to be the most important of those carried on in the ship. Though the title has been changed several times, there is a continuous record since the first Stokers Course began in 1907 at the then Mechanical Repair Establishment, which later became known, in turn, as the Stokers Training Establishment, and the Mechanical Training Establishment. In 1948, when this establishment closed down, the mechanics' training section transferred to the M.T. and R.E. at Portsmouth, but its remaining functions were taken over by *Alaunia*.

The aim of the course has varied little since its inception. It is designed primarily to give additional technical knowledge to the junior rating, and to prepare him for more responsible duties and rank. Schooling and practical work have always had an important place in the course ; the former being necessary for the proper understanding of technical matters, the latter to enable mechanic ratings to give help to the artificers by relieving them of the



PART OF THE I.C.E. DISPLAY SHOP

more straightforward maintenance tasks. The course is at present of twelve weeks, and the division of time is :—

Engineering Lectures	..	130 hours
School Subjects	..	75 hours
Practical Work	..	150 hours
Examinations	..	20 hours

Courses begin every six weeks, thirty to forty men being taken at a time. The course has of late been revised to cater for the acting L.M.(E) though the substance has not been greatly changed. The emphasis is still on boiler operation and maintenance, since leading rates will, in the future, take over many of the present responsibilities of the P.O.M.(E). Successful completion of the course is still a requirement before taking the examination for P.O.M.(E), and the selection of mechanic candidates is made from the result.

Engineering Lectures

The lectures deal at considerable length with boilers and boiler-room operation, and with the maintenance of boilers themselves. The cycle of operations in a boiler-turbine installation is covered in order to stress the principles of the closed feed system, which is dealt with thoroughly. Main engines are not covered in any detail, the function of various components merely being explained. Much more attention is paid to auxiliary machinery, and stress is laid on fuel systems and double bottom work in general. Each class visits H.M.S. *Thunderer*, the machinery layouts there providing a most valuable background to the theoretical knowledge gained during the course.

School Subjects

The subjects taught are fundamental and basic, as little background knowledge can be assumed, although there are often one or two in a class who have

passed School Certificate or the General Certificate of Education, and can be left to work on their own. Mathematics occupies over half the 75 hours allocated, and the remainder is divided between general science and English. General science consists of an introduction to mechanics, heat and hydrostatics.

Practical Work

The time allocated is divided as follows :—

Bricklaying and lagging ..	55 hours
Bench work ..	60 hours
Maintenance training ..	23 hours
Lectures on maintenance and general matters ..	12 hours

In bricklaying, the renewal and repair of all parts of the furnace are covered. Wildish and Anchor type brickwork are dealt with, as well as repair by plastic materials. Both moulded and plastic lagging methods are taught and practised on dummy steam ranges.

Bench work is divided between smithing and fitting. Forge work has been found to develop the use of the hands very rapidly, so that the hammer and chisel are approached subsequently with much less dread of broken knuckles. A wheel spanner, chisels and rivetted joints are made in this section. A fitting test job is given, consisting of a male and female square in $\frac{3}{4}$ in mild steel plate, and, though of no practical use when completed, it does provide a measure of the skill of hand. It is exceptional to see more than 0.005 in of daylight along one side of the male square.

Maintenance training covers the grinding-in of valves, the repacking of glands, cocks, gauge-glasses and condenser tubes, the facing-up of flanges and renewal of jointing, and the renewal of broken studs.

Lectures on maintenance and other matters deal with types and uses of materials, spare gear procedure, ship husbandry and boiler corrosion and its treatments.

Leadership

A leadership course is undertaken in the Royal Naval Barracks by all L.M.(E)s in the company of men of other branches. Though not a part of the mechanical training course, it is normally taken just before joining *Alaunia*. While on board, a variety of duty-watch responsibilities are put in the way of the men, in an endeavour to develop further their powers of leadership.

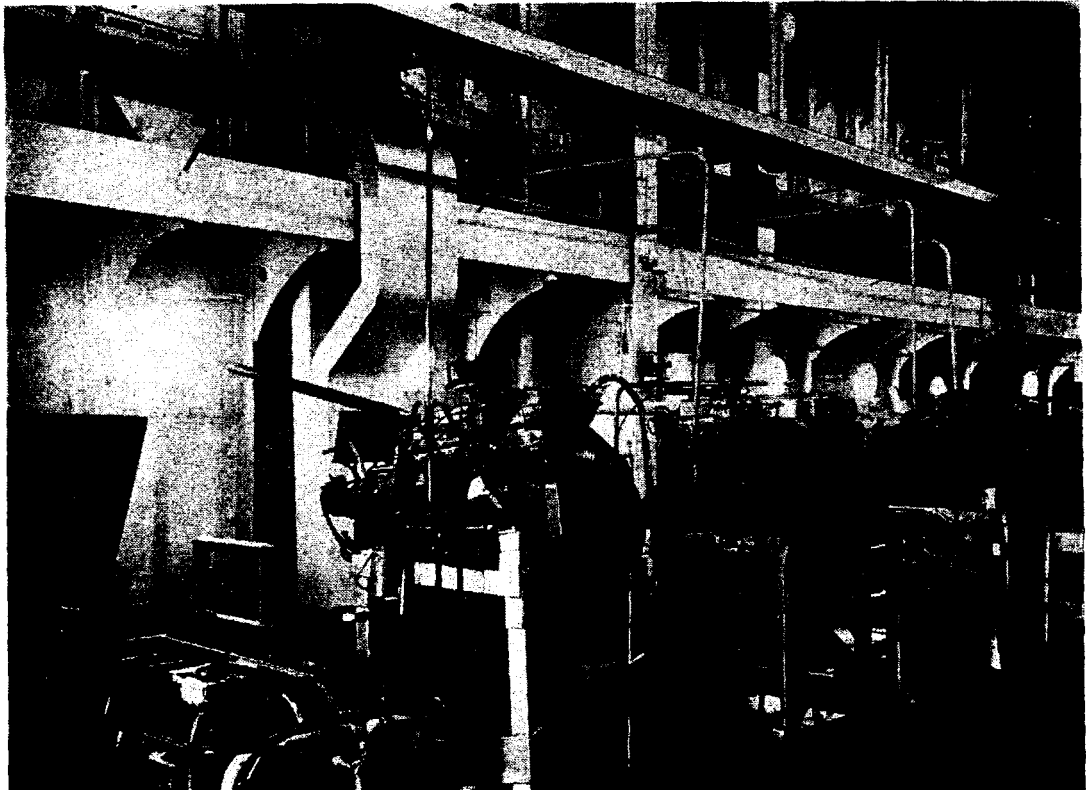
Junior I.C.E. Course

This course is arranged to give a thorough grounding in the principles of construction and operation of internal combustion engines. Practical training provides the junior mechanic with the necessary skill to carry out maintenance tasks up to that of a top overhaul on a 150 b.h.p. engine. This standard has been chosen because it includes the types of engine which will normally be found in auxiliary and generating machinery of coastal craft.

The course was started in 1947 to train leading rates and below from all the three depots. The classes are mixed groups of new entry national servicemen, and C.S. and S.S. ratings with three or four years' service. Classes begin every two weeks ; the number of men that can be trained each year is 730, of whom 30 per cent are national servicemen. The latter are selected after two weeks Part I New Entry Training at H.M.S. *Raleigh*, and are the more intelligent section of each entry.



INSTRUCTION SHOP. PETROL ENGINE BAY



INSTRUCTION SHOP. PERKINS AND FODEN BAY

Since the Junior I.C.E. Course is of a purely technical nature, and is designed primarily for more mature ratings, the selected national servicemen are given an additional week of Part I training in general Service matters and damage control. On joining *Alaunia* they receive a further week of instruction, which includes tool acquaintance, before they are classed with the C.S. and S.S. ratings. Throughout the course practical training is interspersed with classroom lectures. These lectures are augmented by frequent use of exhibits in the Display Shop, where engines of each type covered by the course are laid out with their auxiliaries. Some are exhibited exploded, and others are sectioned.

First and Second Weeks

Lectures cover engine construction, lubrication, carburation and ignition. Practical experience consists of fault finding on Scammell R.N.2 engines and carrying out starting routines.

Third Week

An examination is held, followed by instruction on filters and separators, practical work tracing fuel and control arrangements in an M.F.V. and a fast motor boat, and stripping and reassembling a small C.I. engine. The Enfield H.O.2 is used for this purpose.

Fourth Week

Instruction covers combustion and fuel injection of the C.I. engine, and governing methods. Injector assembly and testing form the practical side of this section of the course.

Fifth Week

Clutches and reverse gears are studied together with the running of a Perkins P.6.M.(O) engine on a water-brake.

Sixth Week

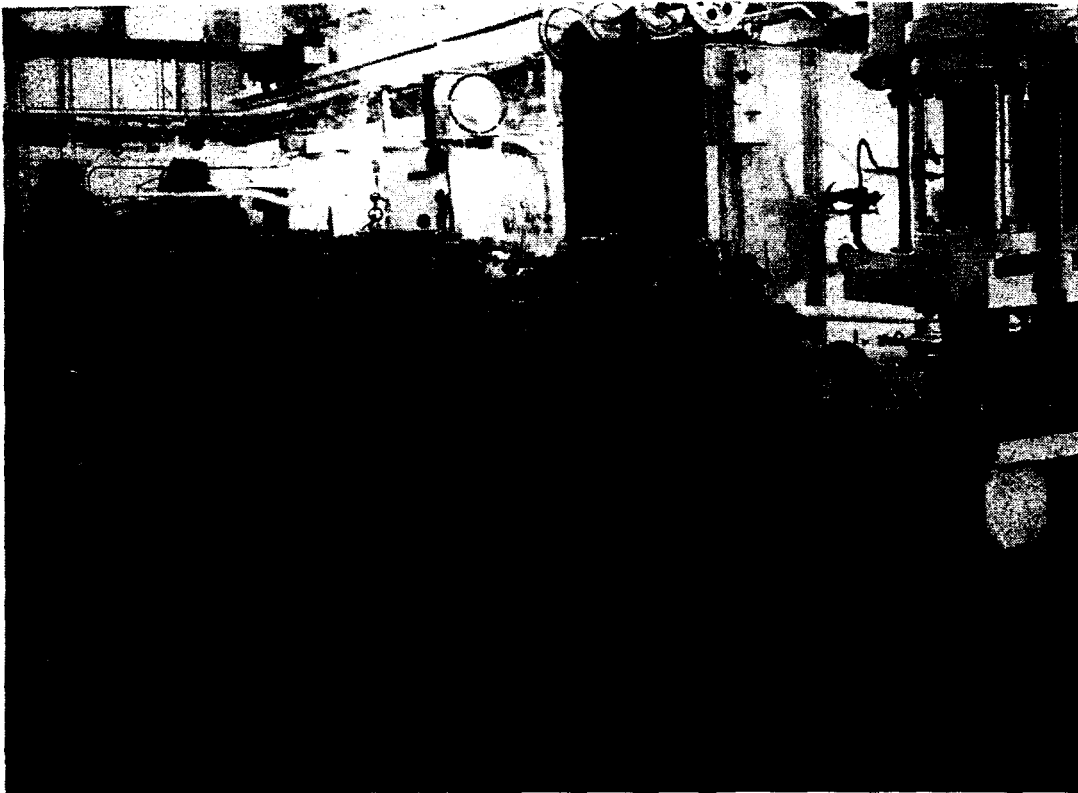
This section consists wholly of practical work, top overhaul routines being carried out by each rating on typical four-stroke and supercharged two-stroke engines. Gardner 6.L.W. and Foden F.D.6 engines are used for this purpose, the time spent on the Foden including a study of the safety control gear. On completion of the top overhauls, the engines must be made to start and run.

Seventh Week

Time is allowed for revision before the final examination, and the last two days are spent giving information about the types of main propulsion units that are likely to be met in coastal craft—gas turbines, A.S.R.I., Napier Deltic and Packard engines. A running example of a Packard in the instruction shop provides a useful introduction to these larger types, and helps to emphasize that watchkeeping requires attention to the same factors, whatever the size of the engine.

Junior I.C.E. Courses for R.N.S.R. and R.N.V.R. Ratings

These courses are arranged to suit requirements. Ratings of the R.N.S.R. undergo 20 days' training, and R.N.V.R. ratings 14 days. When numbers are sufficient, separate classes are formed, but more frequently they join up with one of the current main courses, at stages appropriate to the standard of their previous experience.



THE GARDNER BAY

Welding Courses

Two basic courses are provided, but the curriculum is sufficiently flexible to allow shorter courses to be arranged to meet individual ships' requirements. Refresher courses can also be arranged.

E.R.A.s Course

Duration 12 weeks, consisting of 8 weeks oxy-acetylene and 4 weeks metallic arc-welding. Half of the oxy-acetylene time is devoted to mild steel work, with the emphasis on the welding of pipes. Coppersmiths then spend two weeks on bronze castings, copper sheet and pipes, and two weeks on aluminium sheet and castings. Boilermakers and enginesmiths spend additional time on structural types of mild steel and follow this with practice on cast iron plate and castings. The final four weeks for all E.R.A.s cover the metallic arc-welding of mild steel by vertical, horizontal, overhead and downhand methods.

Shipwrights' Course

Duration 9 weeks, consisting of four weeks oxy-acetylene and five weeks metallic arc-welding. The oxy-acetylene section is confined to mild steel work, both pipes and structural work being undertaken. The metallic arc section also includes both types.

Refrigeration Courses

Duration two weeks. It is intended for E.R.A.s and mechanics and teaches the principles and laws governing refrigeration, the details of construction and methods of maintenance of the three basic types of machine; compression, absorption, and vacuum steam jet.

The emphasis is placed on the automatic type of compression machine, the different methods of regulation and maintenance routines forming the bulk of the instruction. Five-day courses are occasionally arranged, by request, for L.M.(E)s when no normal class is booked. In these cases the principles and laws are taught, together with the 'trouble-shooting' guide to the compression and absorption type machine.

Preservation, Identification and Packaging Course

Though these courses are arranged by the Admiral Superintendent of the Dockyard, naval and civil personnel attending them visit *Alaunia* for one half-day to be shown films and receive notes on the subject, before beginning the practical section of the course in the dockyard.

Paint Spraying Course

Duration 5 days. Normally attended by men of the Seaman Branch, this course is, of course, open to all branches. Practical experience is provided in the methods of preparation of surfaces before painting, and in the care and operation of paint spraying equipment.

CONCLUSION

In producing a bald statement of the functions of a ship, without reference to the handicaps which are inevitably encountered, it is difficult to avoid an air of smugness and self-satisfaction. In *Alaunia*, as everywhere else, perfection and hundred per cent efficiency are but the pipe-dreams of zealous Training Officers.

As a Port Repair Ship probably little could be done to improve *Alaunia* : she houses magnificent machinery and the available facilities are capable of dealing with any job which is likely to be given to her. As a training establishment however, she suffers from the handicap that she is a ship—something not made for the job, and capable of modification only within very restricted limits. This particularly applies to classroom accommodation. Light and airy classrooms, well ventilated and free from outside noises are more than difficult to achieve. In the Service, the truism that difficulties are made to be overcome must be recognized, but in the more fortunate shore establishment the effort required can be diverted to something more constructive.

Against this criticism it can be said that since *Alaunia* is a ship, her men under training live a full naval life at all times : and even as a man learns theoretically the Principle of Archimedes, he has around him a very practical demonstration of the Principle in that he and his desk are being sustained by it.
