

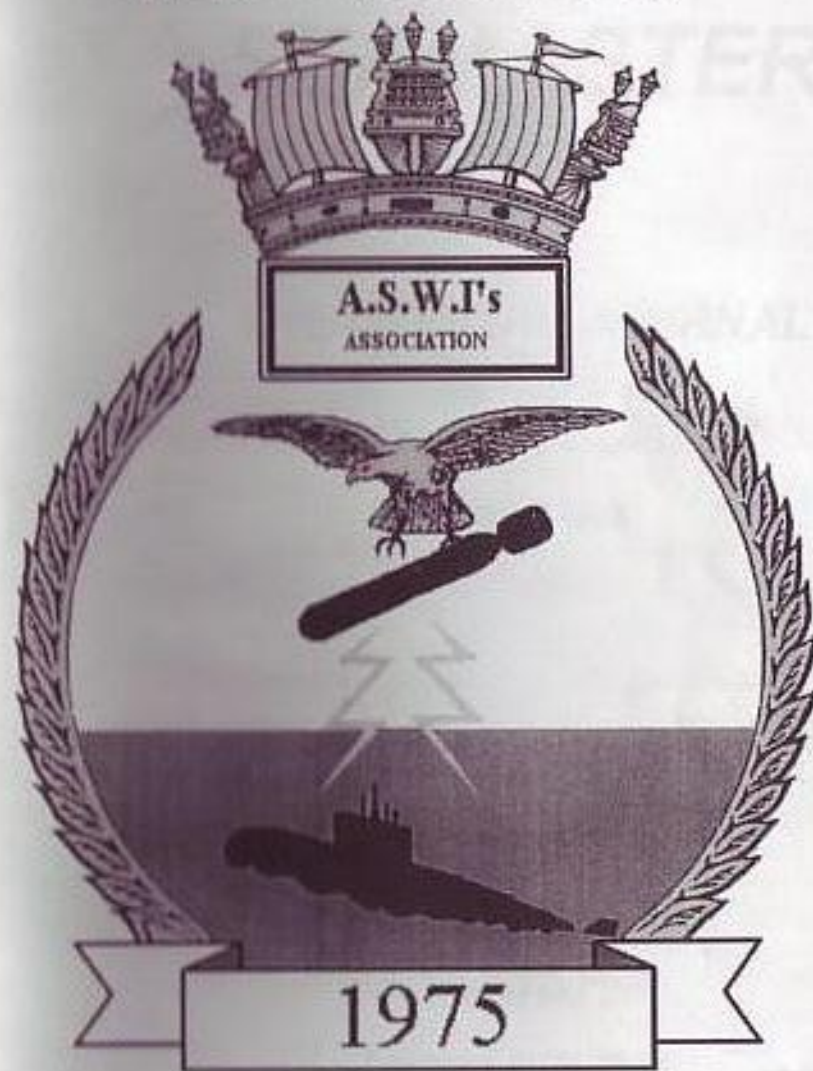
LESS WE FORGET;

"TO PROMOTE *ESPRIT DE CORPS* AMONGEST ALL
MEMBERS OF THE ANTI-SUBMARINE WARFARE
INSTRUCTORS ASSOCIATION WHEREVER THEY MAY
SERVE"

ANON

98

SEAMASTER



August 1998

SEAMASTER

THE OFFICIAL JOURNAL OF THE ASWI ASSOCIATION

AUGUST 1998

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ASWI's COMMITTEE AUGUST 98

PRESIDENT	Commodore J. Hance Royal Navy
VICE PRESIDENT	Commander K Harvey Royal Navy
CHAIRMAN	WO "Dusty" Rhodes
VICE CHAIRMAN	CPO George Emmerton
TREASURER	PO Richard Tolton
SECRETARY	Mr Paul Hitchcock
SOCIAL SEC	CPO George Emmerton
EX SERVING REP	PO Sam Snelling
PLYMOUTH REP	CPO Tim Allport
SEAMASTER EDITOR	Mr Ted Neeson

CHAIRMAN'S DIT

As I sit in my little office, here in Dryad, with the sun filtering its way through the green leaves from the trees that surround Lewin Building, its hard to imagine that the last time I wrote to you, rain and hail bettered the windows. Summer is certainly here.

Although it has been a busy couple of months, the concerns I had at the beginning of the year have been resolved and with a lot of work by your committee we are definitely making progress on the financial and social fronts.

Firstly, I am glad to write that we once again have a "Treasurer", PO Richard Toulton, who is firmly in control, using his previous experience, he has already proved a valuable member of the committee, solving a few problems that had arisen.

As I mentioned in the last Seamaster, our membership list was out of date, with the ex-serving list causing a few embarrassments. After verification, the list at the back of this publication is now correct. My intention is to keep "Where's my Oppo" and produce a separate list with paid up members. If you require an address of any ex-serving Association member drop us a line, as we will maintain the master copy.

Included with this Seamaster is a copy of our rules, please read them carefully. If you have any comments to make please write to us before the September AGM. On completion of the AGM we will produce a new membership ID card, along with the rules.

Here in Dryad, I have completed a lot of negotiations to ensure we have a firm foothold in the PRI clubhouse. In the past it has been at the discretion of the PRI committee as to whether or not we had permission to use the clubhouse. I am pleased to report that the present Chairman, WO Paul Phillips, has the same aims as ourselves, encouraging younger members and bringing the Associations into the 20th century. We are at present drafting a paper to ensure that future committee's do not face the same problems that I have had to deal with. Please use the club as your own, it is open most dinner times, and is also available for private functions.

Tim Allport has maintained the momentum as the West Country Rep, with membership growing steadily with the monthly meetings not only full of constructive debates on topical issues but also the social event afterwards is a "Hic! Hic!" of a time. So, if you are in the Plymouth area, contact Tim to find out the date and venue of the next meeting.

At this point I would like to say a big thank you to Ian Laurie who has worked hard behind the scenes as the Plymouth secretary and member of the Dinner Committee. Ian's post has been taken up by our old friend Sterling Moss. Good Luck Ian, Thank you for your hard work.

Ted Lewis is acting as Seamaster co-ordinator, to ensure that the magazine is topical and interesting and of course all RN references are up to date. Ted Neeson, up in Cheadle Heath will type and publish the book with the material TL sends him.

Well that's enough from me, enjoy the summer, and I hope to see you at the AGM and dinner.

Yours Aye

Dusty

VICE CHAIRMAN'S DIT

Just a quick dit from me seeing as the Chairman has said enough already. As you all know, the annual dinner and dance is two months away. Here at Dryad we are hard at work planning and organising this prestigious event. To assist us in this task, may I ask all of you whom are intending to attend, to return your application forms and payment as soon as possible (Remember there is a leave period coming up so we have less time to process your details). Further application forms and details are available from the committee. Tickets will be sent upon receipt of payment. Many thanks to those of you who have applied already.

The position of Vice Chairman of the Association will soon be vacant, if you are interested in taking up this post on the committee, please contact me on Dryad Ext. 4647.

Yours Aye

George

EDITORS DIT

Welcome to the latest issue of the Seamaster. Thanks to all those who have contributed dits or letters for inclusion, if they arrive in time we will include them.

There is a rather large article in this issue regarding Nuclear Submarine accidents, which also include a couple of pages of references which have to be included for copyright purposes, I hope that you will find it interesting if not informative.

Keep you letters coming.

Safe Journeys

Ted Neeson

STOP PRESS

The AGM & Dinner Dance Supplement is enclosed with this issue.

SECRETARY'S REPORT

Having just returned from my hols in Crete, Dusty cheered me up straight away by making me forget the two wondrous weeks I have had by slipping in a low ball and asking me to have this report ready yesterday?

During my time away I missed the BBQ which by all accounts went well. Its timing enabled attendees to share their burgers with the England Argentina Match which apparently took priority but made the occasion a very social and lengthy one all the same, albeit we lost.

The Annual Dinner and AGM has been the main thrust of Association business over the period and all seems to be taking shape. All we need now, is people to make it happen, so don't delay get your applications in. (See centre pages for details)

Correspondence

Your letters has been steadily filtering in and it has been good to hear from old friends again notably Ex POTASI Les Dacombe who, with his wife Penny reside at Monks Bell in the Midlands. Sadly because of health reasons Les had to retire as a Governor in the prison service. (I always knew he would end up in prison). Les has rejoined the fold and we hope that we will see him shortly and wish him and Penny well in their early retirement.

Another most pleasant surprise was the contact and re appearance of Ex TASI Ian Gardner, who, after a brief spell of 20 years in the USA returned to the UK last year and is now rooted in Bursledon Nr Southampton. Ian has already supported us at the monthly meetings and at the BBQ. Its good to have you back Ian and we wish you the best of luck in your search for permanent employment if you haven't already got a job.

Letters were also received from Alan Quartermaine informing us of the marvelous 8th Destroyer Squadron reunion he attended in South Korea..... No doubt we will hear more of that at the dinner Alan ? and it was good to hear from Ron and Marion Taylor of the Carleton House Hotel Southport who was recently visited by Dave and Pat Bekker, who apparently stayed at the "ADELPHI" of TV fame. (Brave man Dave...I wouldn't trust that Chief Steward ?).

Ron extends his hospitality to all and would be glad to see you if you venture his way, but be quick because he is selling up soon.

Phil Wratten has maintained regular contact mostly because of his non receipt of the Seamaster, however we have now overcome this slight administrative hitch and it was good to see him at the GI Dinner and Dance on 6th June as a guest of GI Dave Wragg. We apologise for the anomaly Phil and promise to buck up and look forward to seeing you at the Dinner.

Rod Rodaway and Jan was also sighted at the GI dinner (both looking just as young). Rod assures me that he will be attending this years Dinner along with a few guests.

Alan Loveday submitted his most humblest apologies for the late payment of his subs. We don't hear much from those down the "hole" at Northwood so it was nice to receive your letter Alan and hope that you can make it down in September.

Congratulations

Congratulations to Phil Lymath for his promotion to Warrant Officer. We wish you well Phil in your first appointment as a Part 3 Divisional Officer.

Gone to Roost

Since the last "Mag" we have had to say farewell to Andy Astley and "Lips" Le Mage. We wish them well in their quest for employment in civvy street and hope they remain in touch. Andy's departure was a sudden surprise to all of us, his expertise will be sorely missed, as will "Lips" one of life's characters who has brought the branch some colour and generally an uplift in morale.

Dave Hood and Pete Brierly who are being dined out this year at the Dinner have now departed and we wish them both well. Andy Gleave will be leaving the service this year but gladly he will be staying around to continue his support for the Association something he and his wife Karen have done for a few years and we thank them both for all their continued hard work. Andy will be dined out at the 1999 dinner.

Association HQ

The build up of good relations with the present leadership of the PRI Association, WO Paul Phillips has given us the firm promise of a stable HQ within the PRI / Instructor Clubhouse in Park House. It is very unlikely that we will ever have our own club again, but in the fullness of time and in an ever changing service environment UW will eventually become a more meaningful acronym to present and future sailors than RP. With the introduction of Warfare Branch, modern day TAS Rates operate both the Radar and the Sonar. The LOM (UW) is the Action Picture Supervisor as well as a Sonar Controller. My own personnel feelings are that this will mean the demise of the RP and PRI and UW will rule (OK!!!) and we will become one?

Association Rules

I am in the process of re configuring the present rules, not to change them obviously, but hopefully to improve the style and in some cases the grammar. Once this is done they will be circulated in the Seamaster and comment invited. If you consider they require change please submit your proposal to me for debate prior to endorsement at the next AGM. (1999)

Membership Cards / Rule Books

A new style of membership card and rule book is to be produced hopefully by the end of this year.

AGM

A finalised AGM Agenda has not yet been set or published, however it is likely to incorporate the items and proposals listed below. There is at present 2 proposals, any new proposals should reach the Secretary no later than 30 August 1998. These will then be discussed at Committee level before being included. The proposed agenda is as follows:

1330 Assemble in Oliver Block Room 118

1340 Chairman's Opening Address.

1. Acceptance of 1997 AGM Minutes.
2. Matters arising:
 - a. Removal of rule 17 Loyalty Bonus. (**Action Complete**).
 - b. Site of Association HQ to remain in Portsmouth Area (**Action Complete**)

2. Ratification of the Association Committee.
 - a. Chairman
 - b. Treasurer.
 - c. Social Secretary and Vice Chairman.
 - d. Secretary.
 - e. Ex Serving Representatives
 - f. West Country Representative
3. Treasurers Annual Report.
4. Social Secretary Report.
5. West Country Rep. Report
7. New Items:
 - a. Standardisation of Annual Subs - Annual subscription to be set at £6 for both cash and standing order payments - Rule 12 remains extant.
Proposer: PO TOLTON Treasurer
 - b. Remuneration for the post of treasurer.
Proposer: Chairman
8. Questions
9. Date of Next AGM 24 Sept 99 Venue TBC
10. Disperse and prepare for the evenings serial.

Temporary Entry Passes

Ex Serving members who regularly visit DRYAD for meetings / social events etc. can apply for a Temporary Entry Pass, valid for three years. An application form is included in this edition. Please hand the completed form along with 2 passport sized photos. to the MOD Guard person when next visiting.

As this is the last Seamaster before Summer leave may I wish you all a "Goodun" and don't delay get your applications in for Dinner Dance tickets.

Paul Hitchcock
Secretary

TREASURERS REPORT

Firstly I would like to thank Kev Francis for his work as treasurer over the past year. The job of treasurer is not an attractive post and in these days of increasing pressures both domestic as well as professional, trying to carry out a responsible extra activities isn't easy, hence the lack of volunteers. Unfortunately I am moving on later in the year therefore we will require another treasurer soon???

Association funds are steadily growing as membership slowly increases. However I firmly believe that the income from subs should not be our only credit source and recommend that the Association should be looking at other ways to increase funds. The lack of a clubhouse doesn't help, but that is another story. I have recommended to the committee that our £500 lower balance limit should be deposited into a High Interest Account so as to raise some revenues that way. I also suggest that more effort should be given to trawl back old members and I believe this to be happening, albeit slowly. The sale of regalia could help but would require an initial outlay of a about £ 500 -1000 and regular sales to prevent cash flow problems.

I would also like to bring annual subscriptions into line by removing the anomaly between cash and standing order payments by introducing a standard fee of £6. This will proposed at the AGM and I beg your support.

The last audit went well. A full audit of accounts for the period 30 Nov 97 - 31 May 98 are as follows:

Balance 30 Nov 97	Cash	£45.55
	Bank	£500.88
Add receipts exceed payments by		£271.56
		<u>£817.99</u>
Balance at 31 May 97	Cash	£ 12.75
	Bank	£805.24
		<u>£817.99</u>

Receipts

Subscriptions	£336.00
Bank Interest	£ 7.96
Donation	£ 6.00

Receipts exceed payments	£271.56
Total Receipts	£349.96

Payments

Audit	£ 35.00
Postage	£ 27.80
Leaving present	£ 15.60
Total payments	£ 78.40

£349.96

A separate Dinner and Dance fund has been set up so as not to conflict with the main account.

I look forward to meeting you at the AGM. If you have any queries regarding the association accounts please do not hesitate to contact me on HMS DRYAD (Mil 835) Ext. 4568 or 01705 284568.

Richard Tolton
Association Treasurer.

NUCLEAR SUBMARINE ACCIDENTS

(The following article is reproduced with the permission of the Bellona Foundation and the original sources of the information is included as endnotes and referenced throughout the article by [Number])

From 1961 up to the present, there have been a number of accidents and incidents involving Soviet/Russian nuclear submarines. At least 507 people have died in accidents on submarines throughout this period. [507] The most serious accidents have been caused by fires that have resulted in the sinking of the submarine, or by severe damage to the nuclear reactor following overheating of the reactor core (loss of coolant accidents) and a number of smaller incidents in which radioactivity has been released. Most of the vessels affected by accidents have belonged to the Russian Northern fleet. This chapter discusses only those accidents that have resulted in the loss of life and/or in releases of radioactivity.

There have also been a number of other incidents in which Northern Fleet submarines have been involved. These include collisions with other submarines, fires at naval bases and shipyards, submarines that have become entangled in trawler nets, accidents during test launches of submarine launched missiles, collisions with icebergs and so forth [568].

Sunken Nuclear Submarines

As a consequence of either accident or extensive damage, there are six nuclear submarines that now lie on the ocean floor: two American vessels (USS Thresher and USS Scorpion) and four Soviet (K-8, K-219, K-278 Komsomolets and K-27). The two American submarines and three of the Soviet nuclear submarines sank as a result of accident; the fourth Soviet submarine was scuttled in the Kara Sea upon the decision of responsible authorities when repair was deemed impossible and decommissioning too expensive. All four of the Soviet submarines belonged to the Northern Fleet. [569]

Despite the differences in time and in location, the Soviet submarine accidents all followed a similar pattern. [570]

1. Fire while submerged on return from patrol.
2. Surfacing of the submarine. Attempts made to salvage the submarine, both in submerged and surfaced position. By the time of surfacing, vessel had already lost power and possibility for outside contact.

3. Penetration of outside water into the vessel.
4. Command post loss of control over submarine's essential systems.
5. Loss of buoyancy and stability of pitch.
6. Capsize and sinking.

It was not always an accident involving the nuclear reactor that caused these submarines to sink. On all of the Soviet vessels that have sunk, the reactor's shut down mechanism had been engaged. For extra security, the control rods were lowered manually to their lowest position, an operation entailing such great risk of radiation that it presented a real threat to life. [571]

There have been a number of incidents involving naval nuclear reactors of the Northern Fleet that have had serious consequences. Among them are accidents that have resulted in the deaths or over exposure to radiation of the crew, as well as extensive damage to the submarine. The damage was expensive and difficult to repair, and in some instances, the damage to the vessel was so comprehensive that future use was impossible.

The three most serious accidents involving Soviet submarines are described below.

K - 8

The first accident involving a Soviet nuclear submarine involved the Project 627A - November class vessel K-8, which sank in the Bay of Biscaya on April 8, 1970 while returning from exercise OKEAN. Two fires started simultaneously in both the third (central) and eighth compartments. The submarine surfaced, but the crew was unable to extinguish the fires. The reactor emergency systems kicked in, leaving the submarine with virtually no power. The auxiliary diesel generators could not be started either. The control room and all the neighbouring compartments were filled with fumes from the fire. Air was pumped into the aft most main ballast tanks in an attempt to keep the vessel afloat. By April 10, the air tanks had been emptied, and water had begun to flow into the seventh and eighth compartments. On the evening of April 10, part of the crew was evacuated to an escorting ship. On the morning of April 11 at 06:20, the submarine sank to a depth of 4680 metres following a loss of stability in pitch. Fifty two people died, including the captain of the vessel. Details of this accident were kept secret until 1991. [572]

K - 219

In October 1986, the strategic nuclear submarine K - 219 (Project 667 a - Yankee class) sank in the Atlantic ocean north of Bermuda with ballistic missiles onboard after an explosion in one of the missile tubes. The explosion caused a leak in the fourth compartment (missile compartment). Steam and smoke from the missile fuel began to stream out from the damaged missile tube. At the time of the explosion, only one of the vessels two reactors was running. The submarine surfaced and the other reactor was started up. Despite the fact that water was beginning to come in, a fire broke out in the fourth compartment. A short in the electrical system tripped one of the submarine's emergency systems. One life was lost in the struggle to lower the control rods. Though still in a surfaced position, the buoyancy of the submarine was steadily impaired when water filled the main ballast tank. When the second reactor broke down, the crew were transferred to a rescue vessel. The captain and nine crew members remained in the conning tower, but when the bow began to sink, they were obliged to abandon ship. On October 6, at 11:03, the submarine sank with the loss of four lives. [573]

The reason for the explosion in the missile tube is unclear. There are two theories of how the accident happened: a defect in the missile tube itself or a fire that broke out following a collision with an American submarine. [574] The submarine had two nuclear reactors and carried 16 nuclear missiles. [575]

K - 278 (Komsomolets)

In April, 1989, the nuclear submarine K - 278, Komsomolets, (Project 685 - Mike class) sank in the Norwegian Sea following a fire. Komsomolets was a unique titanium - hulled submarine that could dive to depths of 1000 metres. On the morning of April 7, 1989, the vessel was on the way back to her base at Zapadnaya Litsa, positioned at a depth of 160m approximately 180km south of Bear Island. At 11:03 the alarm sounded due to a fire in the seventh compartment. Eleven minutes after the fire had broken out, the vessel surfaced. However, the fire had caused short circuits in the electrical system which set off the reactor's emergency systems. The fire was so fierce that a leak was sprung in the compressed air system, and this led in turn to a spreading of the fire. Attempts by the crew to extinguish the flames were futile. The submarine lost power, and finally ran out of compressed air. By 17:00, the leak had worsened, and the submarine lost buoyancy and stability. The crew began to be evacuated into life rafts, but there were not enough rafts. The rafts that were lowered were too far away for the crew to reach. At

17:08, the submarine sank to a depth of 1685 metres, with the loss of 41 lives and her commander.

The ship Aleksandr Khlobystov which came to the rescue after 81 minutes took aboard 25 survivors and 5 fatalities. The exact cause of the fire is unknown. One speculation is that the concentration of oxygen in the seventh compartment was too high, setting off short circuits in the electrical system. [576]

It has also been asserted that shortly before the accident, the vessel had completed a test that indicated that it was not seaworthy. [577] Others claim that K - 278's crew was not qualified to serve on the Komsomolets. [578]

Nuclear Accidents

The most serious accident in which radioactivity is released is the meltdown of the reactor core on board the submarine. This is called a nuclear accident. There have been a number of both major and more minor incidents involving naval reactors. Nuclear accidents are classified either as "loss of control" (loss of regulation) accidents in which an uncontrolled chain reaction may occur, or as a "loss of coolant accidents". There have been 10 nuclear accidents in the entire period that the Soviet nuclear submarines have been in operation, one of which occurred in 1970 during the construction of K - 329, a vessel of the Charlie 1 class. There were two incidents during refuelling operations on K - 11 and K - 431, another during repairs of a naval reactor at the shipyard (K- 140), one during modifications of the submarine (K- 222), four during operations at sea, and one during reactor shut down (K- 314). Two of the accidents occurred on Pacific Fleet submarines, seven at the Northern Fleet, and one at the shipbuilding yard in Nizhny Novogorod.[579]

K - 19

The first nuclear accident to occur on a Russian submarine was on the Northern Fleet's ballistic missile submarine K - 19 (Project 658 - Hotel class). On July 4, 1961, during exercises in the North Atlantic, a leak developed in an inaccessible part of the submarine, K - 19's primary cooling circuit. The leak was specifically located to a pipe regulating the pressure within the primary cooling circuit. The leak caused a sudden drop in pressure, setting off the reactor emergency systems. [580]

To prevent overheating of the reactor, superfluous heat must be removed, and this is done by continually circulating coolant through the reactor. There was no built in system for supplying coolant to the primary circuit, and it was feared that an uncontrolled chain reaction might start. An improvised system to supply coolant to the reactor was devised. This required officers and midshipmen to work for extended periods under radioactive conditions in the more remote areas of the reactor compartment as they attended to the leak in the primary circuit. [581] The radiation in this case came from noxious gases and steam. All of the crew were exposed to substantial doses of radiation, and eight men died of acute radiation sickness after having undergone doses of 50 to 60 Sv (5000 - 6000 rem). The crew was evacuated to a diesel submarine, and K - 19 was towed home to base on the Kola Peninsula. [582]

K - 11

The second nuclear accident to occur was in February 1965 aboard the Project 627 - November class submarine K - 11. The submarine lay in dock at the naval yard in Severodvinsk and work was underway to remove the reactor core (Operation No 1). On February 6, the reactor lid was opened, and the following day, the lid was lifted without having first secured the control rods. [583] Releases of radioactive steam were detected with an abrupt deterioration of conditions. Radiation monitors were going off scale, and all personnel were withdrawn. No work was done on the submarine over the course of the next five days while the specialists tried to discover the reason for the problem. The wrong conclusions were drawn, and the raising of the reactor lid was attempted again on February 12. Once again, the control rods had not been secured, and when the reactor lid was raised, there were releases of steam and a fire broke out. There are no data on radioactive contamination levels or radiation exposure of the personnel. The reactor was finally retired and replaced. [584]

K - 27

On May 24, 1968, the nuclear submarine K - 27 (Project 645) was out at sea. During sea trials, the nuclear reactor had operated at reduced power, and on May 24, power inexplicably and suddenly dropped. Attempts by the crew to restore power levels failed. Simultaneously, gamma radiation in the reactor compartment increased to 150 R/h. Radioactive gases were released to the reactor compartment from the safety buffer tank, and radiation on board the submarine increased.

The reactor was shut down, and approximately 20% of the fuel assemblies were damaged. The incident was caused by problems in the cooling of the reactor core. [585] The entire submarine was scuttled in the Kara Sea in 1981. [586]

K - 140

In August 1968, the Project 667 A -Yankee Class nuclear submarine K - 140, was in the naval yard of Severodvinsk for repairs. On August 27, an uncontrolled increase of the reactor's power occurred following work to upgrade the vessel. One of the reactors started up automatically when the control rods were raised to a higher position. Power increased to 18 times the normal amount. The automatic start up of the reactor was caused by the incorrect installation of the control rod electrical cables and by operator error. Radiation levels aboard the vessel deteriorated. [587]

K - 429

In 1970, while the brand new Project 670 - Charlie class submarine K - 329 lay in harbour at the shipbuilding yard Krasnoe Sormovo in Nizhny Novgorod, there was an uncontrolled start up of the ship's reactor. This led to a fire and the release of radioactivity. [588]

K - 222

On September 30, 1980, the submarine K - 222 was at the factory in Severodvinsk due for a thorough reactor check. During the course of work, the submarine's crew left for lunch leaving the factory personnel on board the vessel. As a result of a breach in the pertinent procedural instructions, power was sent through the safety rod mechanisms without the controls also being engaged. Following a failure in the automatic equipment, there was an uncontrolled raising of the control rods with a subsequent uncontrolled start up of the reactor. As a result of this the reactor core was damaged. [589] Nine crew members died in the fire and three others were injured.

K - 123

On August 8, 1982, while on duty in the Barents Sea, there was a release of liquid metal coolant from the reactor of the Project 705 - Alpha class submarine K - 123. The accident was caused by a leak in the steam generator. Approximately two tons of metal alloy leaked into the reactor compartment, irreparably damaging the reactor such that it had to be replaced [590]. It took nine years to repair the submarine [591].

K - 314

On August 10, 1985, the Project 671 - Victor 1 class submarine K - 314 was at the Chazhma Bay naval yard outside Vladivostok. The reactor went critical during refuelling operations because the control rods had been incorrectly removed when the reactor lid was raised. The ensuing explosion led to the release of large amounts of radioactivity, contaminating an area of 6km in length on the Sotovo Peninsula and the sea outside the naval yard. Ten people working on the refuelling of the vessel died in the accident. The damaged reactor compartment still contains its nuclear fuel. [592]

K - 431

In December 1985, the reactor of the nuclear submarine K -431 (Project 675 - Echo II class) overheated while the vessel was returning to base outside Vladivostok. It is now laid up at the naval base in Pavlovsk. [593]

K - 192 (Formerly K - 131) [594]

ON June 25, 1989, while on the way back to its base at Gadzhievo on the Kola Peninsula, the project 675 - Echo II class submarine K - 192 suffered an accident involving one of the two reactors on board. At the time of the accident, the submarine was in the Norwegian Sea, about 100km north - west of Senja in Troms and approximately 350km south of Bear Island. A leak was discovered in the primary circuit, and the submarine surfaced immediately. Because of the leak, the levels of coolant in the primary circuit had dropped, and the crew hooked up water from the submarine's fresh water tanks. The reactor was not immediately shut down. The contaminated water from the leak was pumped out into the sea, but there is no information about its activity level. When the vessel's fresh water supplies had been consumed, a hose was connected from the Soviet freighter Konstantin Yuon to maintain a supply of coolant to the reactor. Afterwards the reactor was shut down, and the submarine ran on its diesel engines around the Finnmark coast towards the Kola Peninsula. The temperature of the coolant was at 150°C on the morning of June 26, 120°C the same evening, and 108°C on June 27. [595]

Release of radioactive iodine were detected in the areas immediately surrounding the submarine, and sometime later, also at a monitoring post at Vardo in Finnmark. [596] The Northern Fleet service ship Amur also came to the assistance of K - 192, and the radioactive contaminated coolant was transferred to Amur which had a treatment facility on board for liquid radioactive waste.

On June 26, the crew of K - 192 made an attempt to close the leak in the pipe from the cooling system, and in order to accomplish this, the supply of coolant from Amur was cut off. It is not known how long the coolant supply was shut off; however, the individual in charge of monitoring the coolant supply "forgot" to turn it on again when he left his post to go and eat dinner. This person later claimed that he had not in fact forgotten, but was waiting for orders to turn on the supply again. These orders did not come before dinner. [597]

Due to the loss of coolant, the temperature in the reactor increased and the alarm went. The supply of coolant was immediately switched on again, but too late. The supply of cold coolant led to the cracking of the overheated fuel assemblies, and water came into contact with the uranium fuel. The heavily contaminated water being pumped over to Amur led to the breakdown of the treatment plant. Subsequently, water was taken in directly from the sea and pumped out into it again. The total activity and amounts of contaminated water released from K - 192 into the sea is not known. At this point, the vessel was positioned in international waters somewhere between the North Cape and Kola Peninsula, more than 12 nautical miles off the coast. On June 28, K - 192 arrived at the Ara Bay base facility belonging to the naval base at Gadzhievo [598]. At base the activity of the contaminated coolant was estimated at 0.3 Ci/l, totalling 74 Tbq, 2000 Ci.[599]. The submarine's crew received doses of up to 40 mSv (4 rem). [600]

K - 192 was laid up at the base facility in the Ara Bay until 1994 when it was towed to the navy yard No 10 - Shkval. Compressed air is now pumped into the hull to maintain buoyancy. The fuel assemblies in the damaged reactor cannot be removed by standard procedures. [601]

K - 8

On October 13, 1960, one of the most serious accidents involving a naval reactor occurred on a Northern Fleet vessel. The incident was caused by a loss of coolant to the reactor, and is classified accordingly. The Project 627 - November class submarine K - 8 was on exercise in the Barents sea when a leak developed in the steam generators and in a pipe leading to the compensator reception. The equipment for blocking these leaks was also damaged such that the crew itself began the work of stopping the leak.

They mounted a provisional system for supplying water to the reactor to ensure cooling of the reactor and thereby avoid the risk of a core meltdown in the reactor. Large amounts of radioactive gases leaked out which contaminated the entire vessel. The true activity of the gases could not be determined because the instrumentation only went to a certain level. Three of the crew suffered visible radiation injuries, and according to radiological experts in Moscow, certain crew members have been exposed to doses of up to 1.8 - 2 Sv (180 - 200 rem). [602]

Fires resulting in loss of life

In addition to the accidents involving fires whereby the vessels themselves were lost, there have been four serious accidents involving fires on Northern Fleet submarines that have resulted in the loss of human life.

K - 3

On September 8, 1967, while sailing in the Norwegian Sea on the way home to its base on the Kola Peninsula, a fire broke out on board the nuclear submarine K - 3 (Project 627 A - November class). The fire started in the submarine's hydraulic system, and crew members in the compartment when the fire broke out had to evacuate the compartment. This resulted in flames spreading to other parts of the submarine. The automatic extinguishers were based on CO₂ gas, and this gas killed the crew members who were in the first and second compartments foremost in the submarine. When the dividing door in the bulkhead from the third compartment was opened to see what had happened to the people in the second compartment, the gas spread, and more people lost consciousness. The foremost compartments were then completely sealed off, and the submarine surfaced. Four days later, K - 3 had returned to base. A total of 39 crew members died in the fire [603].

K - 19

On February 24, 1972, while the vessel was on patrol in the North Atlantic, a fire broke out in the ninth compartment on board the Project 658 - Hotel class submarine K - 19. The fire started at 10:23 and the ninth compartment was immediately closed off to prevent the fire from spreading to other parts of the vessel. Twelve crew members in the tenth compartment aft in the submarine were thereby isolated, and were not rescued until March 18, after 24 days of fighting the fire. A total of 28 people died in the fire which was caused by a break in one of the hydraulic pipes.

Over 30 ships were involved in the rescue of K - 19, and the submarine finally returned to base on the Kola Peninsula on April 4. [604]

K - 47

On the 26 of September 1976 when the submarine K - 47 was in the Barents Sea on its way to the home port fire broke out in the eighth compartment. Eight crew members died of injuries.

K - 131

On June 18, 1984, a fire broke out in the eighth compartment aboard the Project 675 - Echo II class submarine K - 131. This submarine too was returning to base on the Kola Peninsula. The cause of the accident was that the clothes of one of the crew members caught fire while he was working on some electrical equipment. The fire spread to the seventh compartment and caused the death of 13 crew members [605].

Causes of Accidents [606]

The complex "Man Machine" system represented in the modern nuclear submarine, increases the risk of accidents. The causes of the various accidents depend to a large extent on both the qualities of the reactor and the situation leading up to the accident.

The existing framework of project development, building and delivery of military technology (Navy) and ammunition is not regulated by law, but by decree of defunct authorities, such as the Central Committee of the Communist Party, various councils of Soviet ministers, the military-industrial complex, as well as joint decisions handed down by the Ministry of Shipbuilding and the Ministry of the Navy. The administrative body of the military industrial complex, led by the vice chairman of the council of ministers, itself issued the documents that established the norms, and it was this same body that monitored and enforced the norms that it had itself created. The practice of merging the functions of public agencies contributed to the fact that the Navy itself did not take part in working out quality control and safety requirements for nuclear submarines. Even if the Navy politely refused to receive equipment that they knew in advance to be defective, it could nonetheless be forced to accept it through a common resolution issued by the authorities.

This structure of resolutions and decrees has followed the delivery of all nuclear submarines to the Soviet Navy. Soviet nuclear submarines were built under enormous time constraints. If the Central Committee of the Communist Party had determined that a particular submarine was to be built by the close of a certain year or a particular season, the submarine yards could not postpone delivery, even if the vessel had not been completed or undergone sea trials. Hence nuclear submarines were often delivered to the Navy without all the necessary safety equipment having been installed. Furthermore, the procedural guidelines and the specifications of the contract were modified and simplified. It was not uncommon for a nuclear submarine to be delivered to the Navy from the building yard with missing or defective parts. In 1989 there were 529 complaints of nuclear submarines being delivered with faulty equipment. In 1990-91 a new nuclear submarine was returned to the building yard due to numerous defects in the mechanical equipment. Another submarine was delivered without light switches having been installed in the cabins or in the missile compartment [607].

The servicing and repair of nuclear submarines was carried out at naval yards that fell under the jurisdiction of different authorities. This system was established at the dawning of the age of nuclear submarines and it came to the full during the cold war. Almost 25 nuclear submarine projects were initiated and developed during this period. The lack of sufficient standardisation led to problems in the planning stage, in the competence levels of the crew and in an unavailability of spare parts. The quality and safety of the equipment was compromised, and this has been one of the most important contributing factors to the higher incidence of accidents amongst Soviet nuclear submarines as compared to for example American vessels.

There were also many common factors in the accidents on board Russian nuclear submarines, reflected again and again in the accident statistics:

1. The frequency of accidents was increased as early as the planning stage due to technological deficiencies in a number of areas (Information, securing secrets of propulsion and means of carrying out research) and deficiencies in construction. One of the main problems was the poor quality of metals and materials that were used.

2. At the construction stage, breaches in the technological standards by the builders affected the quality of the finished product such that the finished submarines that were actually delivered to the Navy fell short of the quality of their design.

Furthermore, the schedule for delivery of various systems and parts, as well as the order in which various operations were completed and breaches in the proper technical procedures, all contributed to lowering the quality of the submarine. The quality of work was poor due to a lack of technical understanding amongst the workers. In some instances, there was not even enough technical equipment at the navy shipyards and floating bases.

3. During the testing and approval stage, there were interruptions to the schedule due to delays in deliveries and installation of parts and systems. Under outside pressure from concerned parties, the submarines were approved even before the equipment on board had been tested.

4. The frequency of accidents also increased during the submarine's operational life due to poor maintenance, a disregard of the directions for use and improper procedures for technical equipment and ammunition. The crew were assigned to tasks other than their direct responsibilities, and therefore were lacking in training, especially with regards to measures designed to ensure the survivability of the submarine. At one time, one submarine commander sent in a complaint that 11 of the 28 new members of the crew could not speak Russian and were therefore not qualified to work with the nuclear reactor. Many of the new crews for nuclear submarines had received only six months training, training that was often insufficient or irrelevant to the situations that they might encounter on a nuclear submarine [608]. There was a widespread irresponsible attitude from incompetent outside specialists. The crews were too inexperienced to be able to foresee potential dangers that could lead to critical situations while the submarine was in operation. The search and rescue bases, which have shown a lack of co-ordination in conducting searches, weakened overall preparedness in a number of accidents. The absence of formal conclusions at inquests and a lack of ready information in response to the questions about the nature of the accidents and their frequency resulted in a failure to implement measures to improve the conditions on board the nuclear submarines.

A number of general measures could be implemented to reduce the frequency of accidents, including the following:

1. transition and transformation into a professional navy.
2. Reform of the governing powers in the military industrial complex; division into legislative, executive and administrative functions.
3. Development, production and delivery of ships and military technology regulated by law.

Without implementing these types of reforms, it will be difficult to reduce the frequency accidents.

There are three main factors contributing to the safe operation and use of nuclear submarines;

1. The quality of the design and construction of the vessel, its ammunition and technical equipment.
2. Skill in the operation of nuclear submarines and in the use of pertinent technology over the course of the vessel's operational lifetime
3. Professional training of the crew and professional administration of work on nuclear submarines.

Russia continues to lead the world in the field of submerged speed and deep diving submarines. The shipbuilding industry in the former Soviet union expended considerable resources and employed experienced and highly skilled personnel to build its submarines. This made it possible to build submarines at a rapid pace; however, there were hardly any vessels, submarines or surface vessels, that were not delivered to the Navy free of flaws. The deficiencies were often serious. As a rule, nuclear submarines were delivered from the shipbuilding yards at the end of the year. Regardless of the circumstances, the shipbuilding yard had to guarantee that the vessel would be delivered no later than December 31. Tremendous pressure was put on the chairman of the State Committee for Approval from the whole hierarchy of the ministry of Shipping and Industry, and strange though it may seem, he was also pressured from the Chief Commander of the Navy. The chairman faced a choice between telling the truth about the condition of the submarines - and thereby lose his job - or else avoiding the question. The latter course of action was invariably chosen.

Regardless of in-completion or missing parts, nuclear submarines were delivered to the Navy as long as they were capable of operating under their own steam. Every so often, a submarine might remain at the building yard until it was capable of operating independently. A special contract was established entitled Joint Decisions of the Ministry of Shipping and the Navy, where the building yards promised to improve or

amend faults and deficiencies within a certain period of time. The Navy also agreed to this.

Any submarine that formally entered service with the Navy could be assigned to any kind of assignment or mission within the Navy's spheres of operation, including battle. However, there was no sense of concern or organised plan for conditions of storm or chaos; nor where there any preparations made for such emergencies. It was precisely here that accidents could happen. A serious consequence of this lack of concern was its unfortunate effect on the attitude of the crew - rather than feeling a sense of responsibility themselves, they simply signed on for duty on incomplete nuclear submarines and hoped for the best.

The day to day running of a nuclear submarine involves a whole series of routine procedures and operations, ranging from weekly monitoring and overhaul to varying and more extensive service procedures at the shipyard. The execution of such work requires a sufficient number of naval yards and repair shops, as well as spare parts and operative materiel. The bulk of the Northern Fleet's resources was allocated to the development and construction of its main components: ships and ammunition. The rest received what was left - but this was very little. By the end of the 1980's, the Soviet Union had more nuclear and diesel submarines than all the other nations of the world combined. Yet Russia's submarines barely achieved half of the American operational life. The useful life of a Russian submarine was shortened by the limited possibilities for repair and an underdeveloped industry.

The division of labour aboard the nuclear submarines could also have been better. Today the vessel's commanding officer has total responsibility. He is also liable for the mistakes made by his subordinates, even when it is apparent that another individuals poor judgement has caused the error. The problem is that the commanding officer seldom has the opportunity to discharge this responsibility. Furthermore, the crew of submarines, especially officers, work under conditions of constant physical and psychological overload, with irregular working hours and rest periods.

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Here are some space filling lightbulb jokes!!!

- 1)
How many zen masters does it take to change a light bulb?
Two, One to change it, & One not to change it!
- 2)
How many accountants does it take to change a light bulb?
What kind of answer did you have in mind!
- 3)
How many civil servants does it take to change a light bulb?
45, One to change it, & 44 to do the paperwork!
- 4)
How many Stockbrokers does it take to change a light bulb?
Two, One to take out the bulb and drop it, & the other to try and sell it!
- 5)
How many consultants does it take to change a light bulb?
We don't know, they never got past the feasibility study!
- 6)
How many Ukrainians does it take to change a light bulb?
None, They don't need to, They glow in the dark!
- 7)
How many nuclear engineers does it take to change a light bulb?
Seven, One to change it, & six to work out what to do with the old one for the next 10000 years!
- 8)
How many actors does it take to change a light bulb?
Only one, They don't like to share the spotlight!
- 9)
How many Californians does it take to change a light bulb?
Six, One to change it, One for support, and four to relate to the experience!

- 10)
How many "Real Men" does it take to change a light bulb?
None, "Real Men" aren't afraid of the dark!
- 11)
How many folk singers does it take to change a light bulb?
Two, One to change it, and one to write a song about how good the old light bulb was!
- 12) How many surrealists does it take to change a light bulb?
Two, One to hold the giraffe, and the other to fill the bathtub with brightly coloured machine tools!
- 13)
How many psychiatrists does it take to change a light bulb?
Only one, but the bulb has got to really want to change!
- 14)
How many graduate engineers does it take to change a light bulb?
Only one, But it may take upward of five years for him to get it done!

PORTSMOUTH AREA SOCIAL SECRETARY'S REPORT

Believe it or not, we've actually had quite a hectic social life down here in Portsmouth. The PRI's Association challenged us to a quiz night in June, after a lot of heckling and cheating by the opposition we managed to win hands down. Football mania took over in July and on that fateful night when England played Argentina, we managed to hold a barbecue. A very well supported event, we thank all of you who attended and look forward to seeing you at the next one at Dusty's house.

Social forecast for the remainder of 1998:

- JULY 28 Monthly meeting at the PRI's clubhouse. 19:00 for 19:30
- AUGUST Main summer leave period (no meetings)
- SEPT. 8 Three monkeys competition at HMS Dryad (details TBC)
- SEPT. 25 AGM / Annual Dinner & Dance at HMS Dryad
- OCT. 27 Monthly meeting at the PRI's clubhouse (19:00 for 19:30)
- NOVEMBER Bonfire night social (TBC)
- DECEMBER Christmas drinks / Raffle at PRI's clubhouse (TBC)

On another note, as I am heading off back to sea in HMS Northumberland, I am on the lookout for a relief as Social Secretary of the Association. If you are Portsmouth bound for a while and fancy this post, please contact me on Dryad ext. 4647. Thanks to all of the Portsmouth members, their families and CPO Bob Burton for supporting the social functions.

Yours Aye (Again)

George.

KOREA

REVISITED SECOND TIME AFTER 48 YEARS (APRIL 1998)

The above 10 day visit was organised between the B.K.V.A. Association and its equivalent K.V.A. in Seoul. We landed at Kimpo Airport in the afternoon of Monday 13th April, rather tired after a 10 hour flight through the night. Brigadier C.D. Parr, the defence attaché at the British Embassy, welcomed our party at the airport. We were to see more of the Brigadier as the visit progressed at various gatherings later in the week.

The days were hot 70° plus, most of the country had a haze about it including dust coming from the sand storms off Manchuria etc., which did not help anyone who suffered with chest complaints. Hotel excellent in all other respects, our commonwealth friends met us there also, Australians, New Zealanders and Canadians.

The following gives a brief idea of the schedule. First evening at the British Ambassadors residence for a reception, drinks and buffet (clack valves operating!!!!) the British business men and wives made us very welcome, this included all the British and Commonwealth Memorial services. We had picnic lunches each day, at Kapyong (British Commonwealth) Naechon (Canadian), Gloucester Memorial then to Castle Hill overlooking the River Imjin. Other visits of interest were as follows: Korean folk village including a Korean mid-day meal, military academy, the Korean War Memorial, a small parade was held and on the way out we passed through the vast War Cemetery of 160,000 graves of people lost in the 1950- 1953 conflict.

A large banquet was hosted by Major General (Ret) Chang Tae - Wan, President of the K.V.A. with presentations of the peace medal and other gifts. I personally presented him with the "Cossack" and 8th DF crest on behalf of both Associations etc. Up to Panmunjom and Doraop, very interesting observations made of N.K.

On Monday 20th April we had an early start (06:00) by train, 1st class compartments to Pusan in the South East part of the country, to the UN cemetery. Service conducted by the Army Padre from Aldershot, a chance to find specific graves for friends back home including a specific burial service for an unknown British soldier. The North Koreans had found his body in 1995. A mixed guard of servicemen provided the burial detail and the firing party. Only three ex- RN personnel attended, S.M John Marsden* (Belfast) S.M. Colin Robinson (Triumph) and myself*. During our visit we met Captain John Moore* RAN who served twelve years in the RN before transferring to the RAN. *(We all served on board HMS Diamond (D35) at one time or another).

A well worth visit to a much developed country since 1950.

Kamsa Hamnida
Alan Quartermaine

CPO (S) D Tyler
MDC
Rosia Bay
Gibraltar
BFPO 52
16/6/98

Dear Ted

I am present in touch with an oppo who works for the oil research industry and they require crews for their new vessels coming on line over the next two years.

My oppo has informed me that any Passive Trained Senior Rates will be seriously considered for employment with his company, Horizon Exploration, as will any mechanics or tail trained greenies. The jobs will be aboard 120 metre research ships. These vessels have 10 arrays and operate world wide.

The routine is normally 5 weeks on and 5 weeks off (ish).

Anybody requiring any information can contact me on the above address.

Regards to all in the UK, from all of us on the rock.

Yours Aye

Bonny

Dave Bekker
106, Lower Drayton Drive
Drayton
Portsmouth
Hants
PO6 2HE

7 May 1998

Dear Ted

Enjoyed the latest "Seamaster", and the letter from Alan Quartermaine was particularly interesting in reference to his TASI, PO Frank Bradburn.

As stated Frank was the H.S.D aboard HMS Wanderer, who together with HMS Wallflower sank U523 in August 1943.

I thought that you may be interested in this short narrative on the sinking of that U-Boat from, as well, CB 4050/43(12) Section 5 P22/23.

Regards to U305, a narrative on that sinking is difficult as HMS Wanderer and HMS Glenarm did such a good job that no evidence was gained after the attack that the U-Boat was indeed sunk. The Admiralty were most insistent that visible proof of sinking was at hand (i.e. survivors, dead bodies, parts of bodies, actual sight of the enemy sinking etc.) Therefore it was not until March 1944 that the two vessels were credited with a "probable sunk" (See CB 4050 (that was) /44 (3) Section 9 page 20). Plus the fact that the Germans were loath to admit their losses due to the effects on moral etc. I'll probably find it in 1945 listings/reports.

I would like to thank the "Duke of Drayton", his grace Robbie Robinson, M.B.E. DXILT. Lt Cmdr (Ret), for allowing me to take a copy of that publication, (CB 4050 / 43 (12)).

Regards

Dave Bekker

P.S. Are you going to give us a "wet" of this "Espirit" that advertised on the back cover?

THE SINKING OF U523 BY HM SHIPS WANDERER AND WALLFLOWER

In the first week of August, 1943, "U68", "U123", "U505" and "U523" were among the U-Boats which entered Lorient. All four had started out on a patrol a few days earlier, only to find something unexpectedly go wrong. With "U523" it was her starboard Diesel. As she came alongside to berth, Gestapo agents were waiting on the pier. They at once came on board and began an interrogation of the engine-room staff. An analysis of the oil in the Diesel showed the presence of sugar, and the U-Boats stores were therefore checked, but nothing was found amiss and the Gestapo turned its attention to the dockyard workers.

Three of "U523's" crankshaft bearings had to be changed; this took ten days, though full day and night shifts were worked. On the 16th August the U-Boat sailed again, "U123" being in company, as on the previous attempt, but the two U-Boats were not long together. After 5 days at sea U523 crossed the meridian at 10° W, considered to mark the western limit of the "danger area". The captain had orders to make a signal on reaching this position, but he felt that the danger area extended a good deal further westward than control allowed and decided to put off reporting for three or four more days until he had reached 20° W. That, he felt, was the more likely limit of the danger area. Events proved him absolutely right and he never sent that signal.

Apart from various G.S.R contacts and an ineffective air attack of which the device gave no warning, U523 proceeded without incident until about 0215 on the morning of 25 August, when a lookout sighted a destroyer on the starboard beam. This was the first that the U-boat knew of the presence of the convoy O.G.92/K.M.S.24; neither control nor the G.S.R. had given her warning. U523 at once dived, but she had barely submerged when the "ping" of asdics was heard. A depth charge attack followed quickly.

HMS Wanderer had obtained a radar contact at 14,000 yds. range and had turned towards a few minutes before she herself had been sighted. Closing, she established asdic contact and dropped an inaccurate pattern of depth charges at 0225. The U-Boat lay at 250 ft, relying on her S.B.T. to keep the hunting ships off the scent, but the patterns then dropped by Wanderer and by HMS Wallflower, who had joined at about 0245, had done some damage. The ships lost contact and had to spend an hour searching before they could attack again. The pattern then dropped was somewhat wide of the mark, but near

enough to make the captain think that he had better go deeper, and he took the boat down to about 500ft or 600ft, releasing some more S.B.T charges as he went.

Two hours passed and the crew were beginning to think that they had escaped, but at 0600 the asdic "ping" broke in on the silence of the boat, dashing their hopes. The attack which followed was made by Wanderer with Hedgehog, and survivors were rather vague as to what happened, but it seems likely that one projectile hit the boat aft. There was a momentary panic "when 53 nervous men found themselves plunged into darkness", but the emergency lighting was switched on and the damage was found not to be serious.

The captain had just finished his survey when Wanderer attacked again, this time the pattern exploded all round the boat and everything seemed to break; the batteries cracked, the main motors began to burn. The boat, stern heavy, began to sing. The order to blow tanks was given, but the needle on the depth gauge still crept on. It reached 200 metres, then 240, 250, 270. Amid the noise of groaning metal and splintering wood, the engineer officer again gave the order to blow the tanks. The men staring at the pressure gauge saw the needle flicker and then slowly turn back. It reached 200 metres, passed it and went on.

As U523 came to the surface the Captain and the First Lieutenant were in the conning tower, ready to go to the bridge as soon as the hatch was opened. Beneath them was a throng of Petty Officers. In harbour the Captain was known as a keen disciplinarian, in action and under Wanderer's fire he was not so effective. He lost his nerve, and his panic communicated itself to the men close to him, they pressed up the conning tower. Wanderer obtained a direct hit, and the junior ratings, who had not been quite so hasty, had to clear the bodies away before they themselves could get out. When they could escape, they did not stay long on deck. Only one man attempted to man the quadruple 20mm guns but Wanderer's tracer made him think better of it and he, like the rest, jumped overboard.

The hunt had taken four hours but the kill was quick.

ASW PUBLICATIONS

CORRECT TO DATE 23 APRIL 1997

TITLE		STATUS
BR 2000(63)	Signature Reduction and Control	ORIG
BR 2785(1)	MATCH System	ORIG - 96
BR 2785(3)	TYPE 42	ORIG - 96
BR 2785(4)	INVINCIBLE Class	ORIG - 96
BR 2785(5)	RFA's	ORIG - 96
BR 2785(11)	ADAWS	5
BR 2803	2013 H/B	7 (Ch 8)
m'fch)		
BR 2805(2)	2008 H/B Operating Instructions	5
BR 2805(12)	2008 Performance and limitations	2
BR 4023(1)	SGUWW (Admin)	11
BR 4023(2)	SGUWW (Sonar and Weapons)	2
BR 4023(3)	SGUWW (ASW assessment)	ORIG-98
BR 4023(4)	SGUWW (Oceanography)	1
BR 4918(2)	MATCH H/B	ORIG-96 (AL
1/98)		
BR 4985(1)	Range Prediction H/B	1
BR 5075(2)	2016 Operating H/B	8
BR 5075(OP)	2016 Operating Procedures	8
BR 8159(2DI)	ADAWS Injections	5
BR 8245 (1)&(2)	SONAR 1092 Trainer	ORIG
BR 8342(2)	MTLS H/B	1 (AL 33-
4/97)		
BR 8342(OSD)	MTLS OSD's V10	1
BR 8382(1)	2060 H/B	3
BR 8431(2)	SEPADS	3
BR 8452(OP)	2050 OP Procedures (1994)	3
BR 8556	SLUTT OP Procedures	2
BR 8589(2)	STWS 2 OP Procedures	ORIG - 96
(AL2-3/97)		
BR 8589(OSD)	STWS 2 OSD's	ORIG - 96
(AL2-3/97)		
BR 8589(2B)(2)	Shipborne Torpedo System	3 (AL 3/97)
BR 8603	RS4 Recorder H/B	3 (Ch 8
M'fch)		

BR 8680(2)(5)	Stingray H/B	5
BR 8713(OP)	Sonar 2031 OP Procedures	ORIG
BR 8713(2)	Sonar 2031	4
BR 8837	RASAT	ORIG
NP 631	Wreck Supplement	4
ADAC PUB 1	Acoustic Data Handbook	3
ADAC PUB 4	Active Sonar Class. guide	1 & 1
(Vol 1 and Vol 2)		
ADAC PUB 5	ADAC Reference manual	2 & 5 Ed 3
(Vol 1 & Vol 2)		
AXP 1C	S/M Exercise manual	1
AXP 1C	S/M Exercise manual	2
(BRIT SUPP)		
ATP 10D	S/M Search and Rescue	ORIG
ATP 10D	S/M Search and Rescue	ORIG
(BRIT SUPP)		
ATP 18D	S/M OPS	1
ATP 28A	ASW Manual	7
AHP 6 (Vol 1)	S/M Areas (SODAS)	6 (Amd 32)
CB 04023	Ships guide to UWW	8
CB 04895(2)	Range Prediction H/B	2
CB 04895(3)	Range Prediction H/B	ORIG
CB 8452(2)	2050 OP H/B	1
CB 08680(1B)	STINGRAY Command Info	1
CB 08713(1,2B)	2031 OP Procedures & OG	8
FLOO1	FLEET OPERATIONAL ORDERS	7
FLOO2	FLEET OPERATIONAL ORDERS	8
6 STG	OPERATION SSB Training Guide	2

DEFENCE COUNCIL INSTRUCTIONS (DCI's)

56/96	Maintenance of Sonar skills
61/96	Surface Flotilla OBT support cell
87/96	Towed Array On Board Trainer
124/96	Sonobuoys - RN allowances and accounting instructions.
113/97	SONOBUOYS - RN allowance and accounting instructions
160/97	Buoyant wire aerial
161/97	Improved buoyant wire aerial
18/98	Compatible S/M emergency indicator buoy
19/98	UHF SATCOM fit for Towed array frigates.

ASW Related OSTGM's in force to date: 14/11/97

OSTGM No	DTG	TITLE
051	231515Z OCT 95	ASW Records
079	211000Z MAY 95	Discipline of ASW fighting circuit.
112	261103Z NOV 96	MPA CASEX - Signal address
114	051701Z DEC 96	ROE - WARNINGS
130	141314Z APR 97	FVSS B/CAST of SM's Position
131	231600Z APR 97	Submarines operating in the SCXA
138	160842Z JUL 97	Sonar 162M withdrawal
139	310945Z JUL 97	5 Week BOST
148	100900Z OCT 97	Staff sea check formats
150	101010Z OCT 97	NATO ROE during OST serials
153	051600Z NOV 97	Fully recorded UWW attacks

ASW Related SOUTHGEM's in force to date: 24/03/97

SOUTHGEM No	DTG	TITLE
017	211212Z MAR 96	Fishing Vessel Safety Ship
030	151507Z NOV 96	Fishing Activity in SCXA (W)
034	180713Z APR 97	Interaction with FV's in the SCXA

STAFF SEA CHECK REFERENCES

TITLE

STATUS

OOW ASW CARDS

TCM's	FOTI 0112 Ch 28
CASEX BOARDS	BR 4023(2) 5L - 1 Chg 2
UWW LOOKOUTS	BR 4023(2) 5J - 1 ORIG
ZIG ZAG PLANS	ATP 3B ORIG
MINE LOOKOUTS	BR 4023(2) 5M-1 Chg 2
MSS INSTRUCTIONS	BR 4023(2) 5C - 1 ORIG

EMERGENCY CARDS

RED GRENADE PROCEDURE	BR 4023(2) 5D - 1 Chg 2
STINGRAY BATTERY FIRE PROCEDURE	BR 8589(2) xii-xiv Ch 12
	BR 8342 xvii-xviii Ch 1
	BR 4023(2) 5G-1 Chg 2

BRIDGE ASW FILE

CURRENT STWS/MTLS FORM "F"	BR 8342(2) 2F - 1 ORIG
	BR 8589(2) 2F - 1 Ch 13
	BR 4023(2) Chg 2
CASEX CHECK OFF LIST	BR 4023(2) ORIG 5H - 1
REGS FOR TX ON SONAR AT SEA AND IN HBR	BR 4023(2) 2-7/10 2A-1 TO 2B-5
182 STREAMING/OOW CHECKS	
STWS/MTLS PRE-FIRING SAFETY CHECKS	BR 8342(2) 2H-1, 2L-2 ORIG
	BR 8589(2) 2H-1, 2L-2 Ch 13
STWS/MTLS CLEAR RANGE REQUIREMENTS	BR 8342(2) 2E-1, PARA 5C ORIG
	BR 8589(2) 2E-1, PARA C Ch 13
LOOKOUT ORGANISATION	BR 4023(2) 5M -1 ORIG
XBT INSTRUCTIONS FOR OOW	BR 4023(2) SP-1 Chg 2
SELF PROTECTIVE MCM MEASURES	BR 4023(2) ART 0540 or FOST LETTER 258/2 (23/2/94)
AGOUTI/MASKER ORDERS	BR 4023(2) 5Q-1 Chg 2
NOISE QUIET STATES	BR 4023(2) ART 0175 Chg 2
VLCC FORMAT	OSTG 0766 Chg 2
TA STREAMING/RECOVERY	CB 08713(OP) 5-6 TO 5-17 Ch 3
RESTRICTIONS ON OS	
MANOEUVRES	CB08713(1,2B) Annex A to Ch 8

OPS ROOM ASW FILE (Continued)

CASEX DESCRIPTION	BR 4023(2) ORIG 5K-1
VLCC REPORTING FORMAT	OSTG 0766 ORIG
NATO & RN SAFETY TRACES	BR 4023(2) ORIG 5U1-5U15
DISSUB LOCATOR ACOUSTIC BEACON	BR 4023(2) ORIG 5T-1
DITCHED HELO RELOCATION BEACON	BR 4023(2) ORIG 5F-1
OIL RIG SONAR BEACON	FLOO 12303
TCM's	FOTI 0112 Ch 28
SONAR SIGNAL CODE	AXP1C Table 5-4
ASW SEARCH AND ATTACK PLANS	ATP1C ART 9261/9262 Ch 5
STWS/MTLS PRE-FIRING SAFETY CHECKS	BR 8342(2)
	BR 8589 2H-1, 2L-2

OPERATIONS ROOM

ACTION PLOT MARGIN INFORMATION	BR 4023(2) Chg 2 5N - 1
CASEX BOARD	BR 4023(2) Chg 2 5L - 1
SONAR/RADAR ALIGNMENT	OSTG1421 Para 18

SONAR CONTROL ROOM

SAGE/SAFFRON PROG/DATA DISK	ISSUE 4
RS4.CONFIG: (CH2 REF, CH3 MRS, CH4 UWT/VOICE)	BR 4023(2) Chg 2 ART 0166
ACINT GATHERING ORGANISATION	BR 4023(2) Chg 2 Ch1 Sect 5
FORMEX's/RECORDS/ID FORMS	NADREX(4)
ASW DATA BOARD	BR 4023(2) Chg 2 5R - 1
SC BRIEFING FORMAT	BR 4023(2) Chg 2 5A - 13
CASEX CHECK OFF LIST	BE 4023(2) Chg 2 5A - 12

UWT LOG

CONTENTS LIST	BR 4023(2) Chg 2 5A - 11
SONAR SIGNAL CODE	AXP1C Table 5 - 4
DITCHED HELO RELOCATION BEACON	BR 4023(2) Chg 2 5F - 1
DISLAB BEACON	BR 4023(2) Chg 2 5T - 1
OIL RIG RELOCATION BEACON	FLOO 12303
SUS MK 84 CODES	AXP1C Table 5 -5
UJO PROCEDURES	AXP1C ART 5021

UNDERWATER TELEPHONE

3 LETTER GROUPS TO BE DISPLAYED NNN,QAP,SOS,TRT, TXT,UUU,VPO,XXA,XXX,YBA, YBB,YYY	OSTG Chg 7 Annex D
	AXP1C Table 5 - 4

SONAR 2009

CODE 2 SET AND MARKED (HHHHLH)	IAW. CTF 311 LGB/LGE/LIB/LIE
201717ZMAR 96	

OPS ROOM ASW FILE

CONTENTS LIST	BR4023(2) Chg 2 5A-10
SURFACING PROCEDURES	AXP1C ART 2273/4 & 2273-2
A/B/C (A/B only non-tail NATO w/s)	AXP1C ART 2273
SURFACE SITREP	
OPS ROOM CASEX CHECK OFF LIST	BR 4023(2) Chg 2 5A-6

PASSIVE PUBLICATIONS

TITLE	STATUS
BR 8713(OP)	4
ATP 18(D)	1
CB 08713(1)	7
ADAC PUB 1	3 Ed 7
ADAC PUB 2	1
ADAC PUB 3	1
ADAC PUB 4 VOL 1	1 Ed 5
ADAC PUB 4 VOL 2	1 Ed 5
ADAC PUB 5 VOL 1	2 Ed 3
ADAC PUB 5 VOL 2	5 Ed 3
ADAC PUB 7	1 Ed 5
ADAC PUB 9	0
ADAC PUB 10	0
ADAC PUB 19	1
ADAC PUB 20	0
ADAC PUB 21	0
ADAC TRAINING NEWS 1/97	0
ADAC TRAINING NEWS 2/97	0
SMP 58	0
SMP 71	1
SMP 30	2
SMP 3	7
SMP 5	1
SMP 63	1

USEFUL TELEPHONE NUMBERS

UWW DEPARTMENT		
CDR U	CDR HARVEY	4622
SOASW	LT CDR SCHNADHURST	4548
ASWTO	LT CDR OVENS	4648
ASWTCO	LT CDR WATERS	4576
NSA(ASW)	STEVE RODGERS	4538
ASWTM	WO OWEN	4524
RTO(UW)	WO LEWIS	4710
RTO(UW)1	WO HUTCHISON	4533
UT1	WO RHODES	4547
UE2	WO WHITE	4669/4629
UE3	WO KILROY (BILLET ENDS SEPT. 98)	4576
UNC	CPO CORRINCE	4332
UPT1	JOHN CHENNEL	
ADMIN	MRS A. GREENING	4537
	FAX NUMBER	4330
U Planning	CPO PROWSE	4320
CPO INSTRS	INSTRUCTOR MANAGERS UTI 1.2, 2.1 & 4.1	4647
PO INSTRS	UTI 1.2 - 1.5 & 2.2 - 2.5	4568
TCM	UTI 1.5 TRAINING CONSTRUCTION MNGR	4696
WPNS SECT	WPNS INSTRUCTORS UTI 5.1 & 5.2	4383
ASUAT 3A		4724
ASUAT 6	CPO MANEELY	4506
ASUAT 8		4583
REST ROOM	ASUATS Office (Black Swan)	4515 4915
REST ROOM	LEWIN (SMOKERS)	4710
A.O.M.C		
SOMETOC	LT CDR PRICE	4569
OCTO	LT HOWELL	4569
OC1	CPO MARTIN	4535
MET1	PO PICKERING	4535
MISCELLANEOUS		
NEREUS	WO NASH & CPO ASTLEY	4669/4629
PASSIVE AIO	UTI 4.2 - 4.4	4633
FDO(UW)		

WHERE'S YOUR OPPO?

WARRANT OFFICERS	
BACON	DRYAD
BLANCHE	FOST
BRIERLEY	FOST (CIV 12/98)
BROTHERWOOD	FOSF (PROG)
CAPEL	CINCFLT
FOSTER	SULTAN AIB
GRAVETT	CINCFLT
HUTCHISON	DRYAD
KENNEDY	GIBRALTAR
KILROY	DRYAD
LEWIS P	FOSF (PORTSMOUTH)
LEWIS T	DRYAD
LOVEDAY	NORTHWOOD
NASH	ST MAWGAN
O'SULLIVAN	CINCFLT
OWEN	DRYAD
PARK	CINCFLT (CIV 4/98)
PARRY	FOSF (DEVON PORT)
PREECE	RALEIGH
RHODES P	DRYAD
WHITE	DRYAD (NEREUS)
WILL	DRYAD
WILLIAMS	FOST
CHIEF PETTY OFFICERS	
ALLEN S M	NORFOLK
ALLPORT	FOST
ANTRIBUS	RALEIGH
ASTLEY A J	DRYAD
BAKER P R	DRYAD
BARTLETT-HORGOOD	SOMERSET

CHIEF PETTY OFFICERS	
BROWN R B	COVENTRY
BURTON R B	CUMBERLAND
BURTON G	BRNC (ARGYLL 2/98)
CALEY H A	LIVERPOOL
CRAIG R C	NEPTUNE
CRISPIN A	LONDON
CROWLEY M J	DRAKE
CUNNINGHAM P E	RALEIGH
EDWARDS A D	EDINBURGH
EDWARDS D A	COVENTRY
EDWARDS K	SHEFFIELD
EGAN	IRON DUKE
EMMERTON	DRYAD
ENVY M	DRYAD
EVANS	CARDIFF
FAIRCLIFF	GRAFTON
FORRESTER R J	DRYAD
GARDINER G	RALEIGH
GLEAVE A E	DRYAD
GOODWIN A	RALEIGH
GOLDING B F	DRYAD
GOODFELLOW	MANCHESTER
GORRINGE J M	WESTMINSTER
HANCOCK B	BRNC
HILL P D P	MARLBOROUGH
JARVIS J G	ADAC (DRYAD 7/98)
JONES C W E	FOST SEA
KAY J C	2SL/CNH
KERR	MONTROSE
LAURIE I	FOST
LINGER N P	GRAFTON
LOYNES M	BOXER
LYMATH P J	RICHMOND
LYNN H W	BRNC
MALCOLM	DRYAD
MANEELY G J	DRYAD
MANNERS D C	CORNWALL (NELSON 4/98)
MARTIN H J	DRYAD
McCREADY	DRYAD
McINTOSH N A	IRON DUKE
McLEAN W	NORTHUMBERLAND
MERCER I L	MONMOUTH
MIDDLEMAN G	CHATHAM
MOORE A S	2SL/CNH (CIV 8/97)
MORTIMER M C	DRYAD (DASHER 8/98)
MOSS A R	RALEIGH
MOSS K G	FOST SEA
MYATT A J	RALEIGH
NELSON J	DRYAD

PETTY OFFICERS	
AMOS B J	WESTMINSTER
ARMITAGE B J	MARLBOROUGH
AYRES A R	BEAVER
BAKER R F	RALEIGH
BARRACLOUGH	BOXER
BAXTER M F	DRYAD
BEADEL T A	HERON
BENTING P A	RALEIGH
BEST A	BIRMINGHAM
BLACK S J	NEWCASTLE
BOX D J	CORNWALL (DRYAD)
BOYES D	CORNWALL
BUTLER G	BRAVE
CALLAGHAN P	NORTHUMBERLAND
CANFIELD C J	DRYAD (OUTSIDE 7/98)
CHAPMAN J	DRYAD
CHASE N	DRYAD
CHOATE M	YORK
CLARKE P H J S	RICHMOND
COLLINS P J	BRAVE
COOK J G	MONTROSE
CHIEF PETTY OFFICERS CONTINUED	
NEWELL R J	BRISTOL RNR
O'SHEA M P	DRYAD (RALEIGH 6/98)
PAGE B R	JMF ST MAWGAN
PARRY	EDINBURGH
PLUMB P	AFCO N ENGLAND (CIV 3/98)
PROWSE B J	DRYAD
RICHES	LONDON
RIMMER R R	DRYAD
ROLFE C	DRYAD
ROWE S M	BRAVE
SADLER N B	BOXER (RALEIGH 2/98)
SLATER N	GIBRALTAR (DRYAD/FOST)
SMITH C W	LANCASTER
SPEIRS W R	DRYAD
STANKEVEITCH P	RALEIGH
TATHAM K J	DASHER
TUCKER P	DRYAD (CIV 2/98)
TYLER D P	ADAC (GIB 1/98)
UNDERDOWN N	BEAVER
WALSH B D	FOSF
WATTERS N J	RALEIGH
WELSH	BRNC
WILSON	SUTHERLAND
WOODS N P	BIRMINGHAM
WORSEY R	MONTROSE
YATES S K	DRYAD (CORNWALL 6/98)
YOUNG P D R	BRITANNIA (CIV 3/98)

PETTY OFFICERS CONTINUED	
GOSH D J	RALEIGH
COUCH S R	GIBRALTAR
CUMMINS S	CHATHAM
DANGERFIELD M	ADAC
DAVENPORT	DRYAD (CAMBELTOWN 7/98)
DAVIES C D	RALEIGH
DAVIES S R	NORFOLK
DEAKIN M P	BEAVER
DENNIS	CUMBERLAND
DEVINE P L	WESTMINSTER (EXCELLENT 1/98)
DINNAGE S P	LIVERPOOL
DODD J E	CORNWALL (RALEIGH 5/98)
DRAY J M	LONDON
DUKE P	MARLBOROUGH
DUNN B M	DRYAD
EMERSON S	IRON DUKE
EVANS T K	CARDIFF
FLINT R G	GLOUCESTER
FRANCIS K D	DRYAD (GRAFTON 4/98)
FRAZIER P S	ADAC (BEAVER 2/98)
FRENCH R J	DRYAD
GILMARTIN M J	LANCASTER
GING	DRYAD (CUMBERLAND 2/98)
GOWMAN I P	JMF ST MAWGAN
GREAVES G A	WESTMINSTER
GRIFFIN P M	VICTORY
HALE D F	IRON DUKE
HARTIGAN D P	SOUTHAMPTON
HARVEY N A	NORFOLK
HAYES	DRYAD (IRON DUKE 7/98)
HAYES M J	DRYAD
HAYWOOD	MONMOUTH
HEALEY M J	NORFOLK
HEAVY W J	RALEIGH
HENRY P A	MONMOUTH
HOLMES AT	BEAVER
HOLMES S A	MARLBOROUGH
HOWELL	DRAKE
HUGHES G	COVENTRY
JONES D P	RALEIGH
JONES DH	RALEIGH
KAY J L	SHEFFIELD
KEMP R	SOUTHAMPTON
LANCASHIRE A J	NEWCASTLE
LE-MAGE T J	MANCHESTER
LITTLE D I	BEAVER (RALEIGH 1/98 CORNWALL 4/98)
LOWDEN P	CHATHAM
MADDISON S H	LONDON
MAHONEY P A	ARGYLL

PETTY OFFICERS (CONTINUED)	
MANGAN J G	GLOUCESTER
MARCHANT J R W	WESTMINSTER
McCARThY	MONMOUTH
McCOURT	COVENTRY
McCRINDLE C	RALEIGH
McKENNA	DRYAD (CAMPBELTOWN 7/98)
MCLEOD I C	DRAKE (MONTROSE)
MINTER K	DRAKE
MONTGOMERY R A	BOXER
MOSS A R	NP 1610
MOWAT K J	ARGYLL
MURPHY I P	IRON DUKE
NICHOLS N K	DRYAD
OGGIANO S J	RICHMOND
PACKER R T	ARGYLL
PEARSON R D T	DRYAD
PHILLIPS M R	DRYAD (BEAVER 5/98)
PINCH A	BRAVE
POREE K M	MONTROSE
PRITCHETT G	NOTTINGHAM
PROSSER R H	ADAC 9/97
PURSLOW S P	DRAKE
REYNOLDS P P	DRYAD
ROWLEY M E	DRYAD
ROWNTREE C	MONMOUTH
SCOTT M J	GIBRALTAR
SHARPE J	BOXER
SINGH T	GLASGOW
SLATER R J	DRYAD (CORNWALL 7/98)
SMALLBONES P J	DRAKE (CAMPBELTOWN 7/98)
SMITH DC	RICHMOND
STEPHENS D P	CUMBERLAND
SYERS D A	NORTHUMBERLAND
TOLTON R J	DRYAD
WATSON S N T	NOTTINGHAM
WEATHERLEY A B	SUTHERLAND
WEBB S M	LANCASTER
WHITE M F	CDA NAG
WILDE C A	YORK
WILLIAMS I S	NORTHUMBERLAND
WINGAR A P	GIBRALTAR (CIC FLEET 1/98)
WOOD C J	SHEFFIELD
WOOD N R	LANCASTER

ASWI ASSOCIATION MEMBERS

SERVING MEMBERS PAID UP LIST		
RATE	NAME	SHIP
WARRANT OFFICER	BLANCH R	FOST (PLYMOUTH)
WARRANT OFFICER	GRAVETT T	CINCFLT (N'WOOD)
WARRANT OFFICER	KENNEDY P	GIBRALTAR
WARRANT OFFICER	KILROY J	HMS DRYAD
WARRANT OFFICER	LEWIS T	HMS DRYAD
WARRANT OFFICER	LOVEDAY A	CINCFLT (N'WOOD)
WARRANT OFFICER	NASH S	ST MAWGAN
WARRANT OFFICER	RHODES P	HMS DRYAD
WARRANT OFFICER	WILL S	HMS DRYAD
CHIEF PETTY OFFICER	ALLEN SM	HMS NORFOLK
CHIEF PETTY OFFICER	ALLPORT T	FOST
CHIEF PETTY OFFICER	BURTON RB	HMS CUMBERLAND
CHIEF PETTY OFFICER	EMMERTON G	HMS DRYAD
CHIEF PETTY OFFICER	JONES CW	FOST
CHIEF PETTY OFFICER	LAURIE I	FOST
CHIEF PETTY OFFICER	LOYNES M	HMS BOXER
CHIEF PETTY OFFICER	LYMATH P	HMS RICHMOND
CHIEF PETTY OFFICER	MOSS KG	FOST
CHIEF PETTY OFFICER	NELSON J	HMS DRYAD
CHIEF PETTY OFFICER	PROWSE B	HMS DRYAD
CHIEF PETTY OFFICER	SMITH CW	HMS LANCASTER
CHIEF PETTY OFFICER	UNDERDOWN N	HMS BEAVER
CHIEF PETTY OFFICER	WALSH B	FOSF (-PORTSMOUTH)
CHIEF PETTY OFFICER	WATTERS NJ	HMS RALEIGH
PETTY OFFICER	AYRES P	HMS BEAVER
PETTY OFFICER	COSH DJ	HMS RALEIGH
PETTY OFFICER	FRANCIS K	HMS GRAFTON
PETTY OFFICER	HARVEY NA	HMS NORFOLK
PETTY OFFICER	HAYWOOD	HMS MONMOUTH
PETTY OFFICER	HUGHES G	HMS COVENTRY
PETTY OFFICER	RAYNER	HMS IRON DUKE
PETTY OFFICER	REYNOLDS PP	HMS DRYAD
PETTY OFFICER	TOLTON RJ	HMS DRYAD
PETTY OFFICER	WEATHERLEY AB	HMS SUTHERLAND

ASWI ASSOCIATION MEMBERS

EX SERVING MEMBERS PAID UP LIST		
NAME	ADDRESS	TELE.
ADAMS JOHN	Purbrook, Hants	
ALLEN AW DARBY	Waterlooville, Hants	
ALLEN WT	Higher Compton, Plymouth	
BEKKER DAVE	Drayton, Hants	
BRIERLY PETER	Tudor Court Hotel, Falmouth	312807
COOK LP	UNKNOWN	
COOLING PDC	UNKNOWN	
DACOMBE L	Onks Kirby, Warwickshire	
DENNETT DIZZY	Waterlooville, Hants	
DREW DICKIE	Hammersmith, London	
FEASEY RON	Bournemouth, Dorset	
GARDINER ID	UNKNOWN	
GLEAVE ANDY	Portsmouth, Hants, PO1 5JG	
HAWGOOD RAY	Bridport, Dorset	
HEAVER BRIAN	Waterlooville, Hants	
HITCHCOCK PAUL	Portsmouth, Hants, PO3 6PH	
HOOD DAVE	Hayling Island, Hants	
HOVENDEN TONY	Purbrook, Hants	
LAKE KEITH	Barrow-in-Furness, Cumbria	
LEGG MICK	Looseleigh, Plymouth, Devon	
NEESON TED	Cheadle, Cheshire	0161-495-6292
PEARCE SS	ST Bealux, Plymouth	
PISTON R	UNKNOWN	
QUATERMAINE ALAN	Banbury, Oxon	
ROBINSON R	Drayton, Portsmouth	
RODGERS S	NSA, HMS Collingwood, Hants	
SNELLING SAM	Catherington, Hants	
SOWDEN PETE	Dover, Kent, CT16 2QF	
TAYLOR R	Southport, Merseyside	
THORPE FRED	Groby, Leicester	
WALTON T	Elstoke, Gosport	
WARREN B	UNKNOWN	
WHITTY TERRY	Liskeard, Cornwall	
WILLIAMSON TW	Plymouth	

IF ANYONE KNOWS THE ADDRESSES OF THOSE PAID UP MEMBERS IDENTIFIED PLEASE LET US KNOW.

IF YOU HAVE PAID UP AND ARE NOT MENTIONED ON THIS LIST PLEASE ACCEPT OUR APOLOGIES, AND LET US KNOW.

If you wish to contact any of the above, then please write to the ASWI's secretary, who will be only too glad to pass on your letters or messages to the relevant person.