unclass/NPM



Annese B to 12-12-2006-133020-006 dated 25 March 200

MINISTRY OF DEFENCE

Main Building, Whitehall, London SWIA 2HB
Telephone (Direct Dialling) 01-218 7165

(Switchboard) 01-218 9000

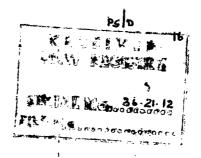
From: ARM JAFFRAY CB., Deputy Under-Secretary of State (Navy)

Ref: 14/2/35(484)

21 December 1982

Commander-in-Chief Fleet Northwood

Middlesex HA6 3HP

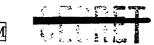


Sir

BOARD OF INQUIRY - REPORT INTO THE LOSS OF HMS COVENTRY

Reference: 520/239L dated 22 September 1982

- 1. I am commanded by the Admiralty Board of the Defence Council to inform you that they have taken note of your report and the Board of Inquiry proceedings forwarded under the reference.
- 2. The Admiralty Board made the following observations:
 - a. HMS COVENTRY's role on 25 May required acceptance of risk from low air attack, and her equipment characteristics made detection of raids approaching from landward difficult. A combination of tactical decisions, understandable in the circumstances, and equipment failures led to the final raids not being engaged. The damage suffered was catastrophic and no damage control measures could have saved the ship. The ship's company behaved well.
 - b. Modifications to improve GWS 30 reaction time are being considered for introduction post 1985. Both material improvements in close range AAW capability and training in their effective use, especially when operating inshore, are of high priority. The lessons of this engagement are applicable to operations in the NATO area.
 - c. Recommendations as they apply to the Ship and Weapon Departments together with the recommendations of the Marine Technology Board are under active consideration.
 - d. Recommendations regarding training in damage control, ship stability and survival are supported.



unclass/NPM

- e. A review of OPS and TPS for GWS 30 may indicate the need to upgrade the complement, with possible implications on ship accommodation and on ratings structure.
- f. The provision of onboard training equipment for both existing and future ships is being actively pursued by the Naval Systems Training Group.
- g. Survival training will to some extent be facilitated by the use of the mobile survival classroom which is due in service shortly. A review of survival training and training aids is being undertaken.
- h. Those Damage Control aspects which have a bearing on the distribution of personnel (and thus the Quarter Bills) are being reviewed.
- 3. Your report and the Proceedings have been taken into account in the "Lessons Learnt" studies in the Navy Department. The detailed lessons in both your report and the Proceedings are also being followed up by the staffs responsible. The Admiralty Board may wish to make further observations when all the lessons from Operation CORPORATE and from the Reports and Boards of Inquiry into other ship losses have been fully examined.

I am, Sir Your obedient Servant

amfalt -

Copy to: The Flag Officer, First Flotilla

Internal: Sec/1SL

Sec/2SL Sec/CofN Sec/CFS Sec/VCNS PS/CER AUS(NS) AUS(NP) DGFS(P&S)

DGNMT
DGNPS
DG Ships
DGST(N)
DNW

unclass/NPM

-RESTRICTED

HMS NELSON Portsmouth Hants

00520/5.X

The Commander-in-Chief Fleet Northwood Middlesex

9 August 1982

Sir,

REPORT INTO THE LOSS OF HMS COVENTRY

- 1. We have the honour to present our report on the loss of HMS COVENTRY on 25th May 1982.
- 2. The Board convened at HMS NELSON on Monday 28 June 1982. All the facilities and support we required were willingly and efficiently provided both by NELSON and all the many authorities who provided expert advice.

344 338

- 4. The picture which emerged from our investigations was often confusing and in some areas our version of events is open to question on points of detail. However we are confident that sound conclusions can be drawn in all critical areas. Our recommendations include some which result from the distillations of fragments of evidence and impressions gained by the Board.
- 5. We are conscious that we have not answered all the questions posed in our directive. That is because some subjects did not loom as large in practice as one might have expected; other apparently trivial matters assumed considerable importance.
- 6. We have tried to catch the mood and feeling of Operation Corporate in our narrative in order to counter balance the clarity of hindsight. The fog of war was often present. Many situations were completely new to those concerned; systems were being used in situations for which they were not designed. Unconventional and untried methods were not uncommon. Expensive failures were to be expected.
- 7. At 1820 on 25th May a routine air raid suddenly developed into a three minute fight for survival. It was the first direct attack on COVENTRY. The speed of events, equipment and procedural failures and bad luck overcame them. The battle-hardened BROADSWORD fared little better. It was fortunate that so many men survived.

-RESTRICTED-COVERING SECRET

8. We see no need for any censures or disciplinary action; on the contrary we have endorsed the Commanding Officer's recommendations for meritorious service and added some of our own.

We have the honour to be, Sir, Your obedient Servants

NK

XXXXXXXXXXXXXXXXX Captain Royal Navy

- 2 -

unclass/NPM -----

REPORT OF THE BOARD OF INQUIRY INTO THE LOSS OF HMS COVENTRY - CONTENTS

unclass/NPM INTRODUCTION (SECRET) SECTION I PREPARATIONS FOR WAR (SECRET) unclass/NPM SECTION II HMS COVENTRY, her history, her preparations for and initial involvement in Operation Corporate. INSHORE AIR DEFENCE OPERATIONS (SECRET) unclass/NPM SECTION III Inshore air defence operations - up to 251600Z MAY. THE FINAL ACTION (SECRET) unclass/NPM SECTION IV The tactical handling and weapon engagement in the final action. SECTION V THE DAMAGE (SECRET) unclass/NPM An assessment of the damage sustained and the consequences. THE ESCAPE AND RESCUE OPERATION (SECRET) unclass/NPM SECTION VI A description of the aftermath of the damage, the injuries sustained, the escape from the ship and subsequent rescue. MAJOR CONCLUSIONS (SECRET) unclass/NPM SECTION VII Synopsis of answers to the major questions DETAILED CONCLUSIONS AND RECOMMENDATIONS (SECRET) unclass/NPM SECTION VIII ANNEX A SUPPORTING DIAGRAMS Appendix 1: Operations South of Stanley 6-9 May 1982 2: Patrol Line 22 May 1982 3: Patrol Lines 24-25 May 1982 4: Sea Dart Engagement 1230Z 25 May 1982 5: Sea Dart Engagement 1530Z 25 May 1982 6: Final Engagement 1800-1830Z 25 May 1982 7: Final Engagement 25 May 1982 SIGNALS ANNEX B 1: CTG 317.8 082321Z MAY Appendix 2: CTG 317.8 091040Z MAY 3: HMS COVENTRY 092025Z MAY 4: HMS. BROADSWORD 101235Z MAY 5: HMS BROADSWORD 232218Z MAY 6: HMS BROADSWORD 220825Z MAY 7: HMS BROADSWORD 222040Z MAY 8: CTG 317.8 222234Z MAY 9: CTG 317.8 240003Z MAY 10: HMS COVENTRY 241745Z MAY 11: HMS BROADSWORD 242020Z MAY 12: HMS BROADSWORD 250538Z MAY 13: HMS BRILLIANT 122230Z MAY 14: HMS BROADSWORD 131040Z MAY

15: CINCFLEET 230453Z MAY

ANNEX C	TYPE 42/22 AAW TACTICS AND PROCEDURES
ANNEX D	WEAPON ENGINEERING (SECRET) Appendix 1: The Final Attacks - WE Aspects - An Analysis 2: ADAWS 4 Possible Hardware, Software and Drill Improvements 3: Radar Type 909 - Possible Minor Hardware Improvements 4: EMCON Policy, Dummy Loads and Performance Testing
ANNEX E	MARINE ENGINEERING
ANNEX F	DAMAGE AND DAMAGE CONTROL Appendix 1: Detailed Summary of Damage 2: Blast Route and Damage 3: Stability After Damage - Flooding to 2 Deck 4: Stability After Damage - Flooding to deck edge 5: Photographs of Damaged Ship: Plate 1 - Explosion Plate 2 - Port Side Upright Plate 3 - Port Side Heeled Plate 4 - Bow View Heeled 6: Photographs of PHOENIX Type 42 model: Plate 1 - Model Flooding to 2 deck Plate 2 - Model Deck Edge Immersed 7: Photographs of Bulkheads in 2 Deck Passageway HMS CARDIFF: Plate 1 - Watertight bulkhead Plate 2 - Non-watertight bulkhead 8: Damage Control - Lessons Learnt
ANNEX G	ESCAPE/SURVIVAL/RESCUE Appendix 1: Problems Abandoning Ship 2: Liferaft Launching Difficulties
ANNEX H	FIRST AID AND CASUALTIES Appendix 1: Deaths 2: Injuries
ANNEX J	CLOTHING AND BURNS
ANNEX K	REFERENCES CONSULTED

Distribution:

Commander-in-Chief Fleet (Original plus 20 copies - all sections and annexes)

REPORT OF THE BOARD OF INQUIRY INTO THE LOSS OF HMS COVENTRY

SECTION I - INTRODUCTION

A Board of Inquiry into the sinking of HMS COVENTRY was convened by the order of the Commander-in-Chief Fleet (1) and assembled in HMS NELSON at 0900 on 28 June. The Board was comprised of:

NIR

AIM OF THE BOARD

The aim of the Board was to investigate the circumstances leading to and 338 attending the disablement and later sinking of HMS COVENTRY under the command SAN

FORM OF THE REPORT

The main body of the report is divided into 8 sections. The Introduction contains a synopsis of events on 25th May which is presented in a very general form and serves purely to set the scene. Detailed accounts of events leading up to, during and subsequent to the final action are contained in later sections and amplified in supporting annexes and appendices. The report thus begins with a short description on the scene of action on 25 May.

THE SCENE OF ACTION

- On 25 May 1982, D+4, HMS COVENTRY was conducting inshore Anti-Air Warfare (AAW) operations in support of the Amphibious Operating Area (AOA) in close company with HMS BROADSWORD 10 miles north of Pebble Island, West Falkland. They were attacked by two pairs of Argentinian Skyhawk/Mirage aircraft with cannon and 1000 lb bombs. A plan of the action is at Annex A, Appendix 6.
- It was a calm bright sunny day. The ships had worked together for prolonged periods without being directly attacked. COVENTRY had destroyed two, possibly three aircraft that afternoon with Sea Dart, one of which was acquired over Pebble Island.
- 967, with its doppler mode, tracked two pairs of hostile aircraft approaching to the southwest of Pebble Island on a heading of 080°.
- The ships were at Action Stations, course 090° with COVENTRY leading and BROADSWORD about 3 cables fine on her starboard quarter. Instead of following the normal northerly track to the San Carlos AOA these aircraft swung low over Pebble Island and attacked in two pairs about 10 miles/12 minutes apart.
- (1) CINCFLEET's letter 00520/5.X dated 11 June 1982



321

believed to have acquired.

- 8. CAP aircraft were fast approaching Station 33, 25 miles to the east but were too late to engage the first pair of aircraft. Their movement was slightly hampered by the AOA missile zone. Quick reactions by GOVENTRY's fighter controller got the CAP within 3 miles of their weapon release point on the second pair of aircraft but the CAP was hauled off when Sea Dart was
- 9. The first pair of aircraft were only engaged by COVENTRY's 4.5 gun and both ships' close range weapons. Neither Sea Dart nor Sea Wolf was fired. The gunfire appeared to divert the attacking aircraft towards BROADSWORD who was hit by a bomb bouncing up through the flight deck and the Lynx.
- 10. The second pair of aircraft attacked $1\frac{1}{2}$ minutes later from a direction of about 175° . They were acquired by BROADSWORD's forward Sea Wolf system in low radar tracking mode. While waiting for them to close to engagement range BROADSWORD passed close astern of COVENTRY who was the formation guide.
- 11. COVENTRY had in fact altered course to starboard in two steps to about 190°. She fired a Sea Dart which does not appear to have been locked on to the attacking aircraft. The 4.5 gun engaged briefly. COVENTRY was struck on the port side by cannon fire and three 1000 lb bombs. One exploded in the Conversion Machinery compartment, another in the Forward Engine Room. The third is thought to have entered the Naval Stores (3H) without exploding. A cannon shell sliced through the ship's side just above the waterline in the Forward Auxiliary Machinery Room (FAMR) passing aft into the Forward Engine Room striking K air compressor. This was reported before the bombs exploded.
- 13. It quickly became apparent that massive flooding was taking place in five main compartments from 16 to 36½ stations; all internal and external communications, sensors and all but close range weapons were rendered useless. The centre of the ship at all deck levels was smoke logged, many ladders were damaged, doors and hatches were distorted, movement was difficult not least because the ship had developed an alarming list to port.
- 14. The ship was evacuated in an orderly fashion as it became obvious to all that capsize was imminent. The starboard liferafts were released with some difficulty and the ship abandoned. The water was cold (7°C-44.6°F), the sea state was mercifully low and the rescue by BROADSWORD and helicopters from the Sam Carlos area was quick and efficient.
- 16. It was difficult to get the overloaded liferafts clear of the ship. Two drifted round the bow and beneath the Sea Dart launcher and the 965 aerial. Towing these liferafts clear was difficult; one was punctured by a Sea Dart missile and subsequently sank. By about 1900 COVENTRY was lying on her port side, BROADSWORD's Gemini was paddling clear with the last of the survivors;

33; 34h





- a Wessex V was making a final search. The last survivors reached BROADSWORD at about 2000, some $1\frac{1}{2}$ hours after entering the water.
- 17. COVENTRY subsequently sank although this was not seen by BROADSWORD, who left the upturned hull still afloat as darkness fell. The hull has since been relocated.

SECTION II - PREPARATION FOR WAR

BUILD AND EARLY PROGRAMME

18. HMS COVENTRY, the fourth Type 42 destroyer, was laid down in 1973 and launched at the Birkenhead Yard of Cammell Laird on 21 June 1974. The ship was accepted into Service at Portsmouth in October 1978 and commissioned on 10 November 1978. Part IV trials lasted some 10 months and the ship became operational on 17 August 1979. After undergoing BOST at Portland between September and November 1979 and taking part in JMC 793 the ship returned to Portsmouth for Christmas leave and AMP.

1980 PROGRAMME

19. The early months of 1980 were spent in a series of trials, minor exercises and weapon training periods and the ship deployed to the Middle and Far East with Task Group 318.0 in mid-May 1980. After several exercises in the Indian Ocean and an AMP in Hong Kong in early August, COVENTRY visited Shanghai and then Tokyo in company with other ships of the Task Group. At the end of September, Operation ARMILLA began and COVENTRY operated for 4 weeks on patrol in the Gulf of Oman. She returned to the Group early in November for the homeward passage reaching Portsmouth on 9 December.

1981 PROGRAMME

- 20. Between January and April 1981 the ship underwent a DED/AMP at Portsmouth. A satisfactory standard was achieved, the major item of work having been repairs to the port Controllable Pitch Propeller (CPP) system. Command Team Training for one team was also completed and during this period some 6 officers and 139 ratings in complement billets were relieved.
- 21. A 2 week COST at Portland began on 5 May 1981 following post DED sea trials in late April. FOST reported that the ship arrived in a hurry and was ill-prepared for her work-up with many safety items and OPDEFs outstanding. However the performance of the warfare department in particular was reported to be most encouraging and a general enthusiasm and willingness to learn led to steady improvement being noted. Continuing defects with the 909 radars, IFF, 4.5 gun and UAA1 caused considerable frustration. On departure, COVENTRY had achieved a satisfactory standard but it was noted that much effort would be required to get the UAA1 and 909 radars fully operational. AAW remained a weak area with GSA1 not proved in AA or NGS and GWS 30 drills were still well below standard.
- 22. After several port visits, COVENTRY took part in a two week JMOTS sponsored exercise (ROEBUCK) which followed the pattern of a traditional JMC and then returned to Portsmouth for an AMP which began at the end of June 1981.

53; 544 24. The STANAYFORLANT deployment continued with participation in UMC 813 at the beginning of November. This proved to be a valuable, if testing opportunity for COVENTRY from which considerable air defence training value was extracted and again South Atlantic style weather conditions were encountered. The ship returned to Portsmouth on 8 December for leave and AMP.

1982 PROGRAMME

- 25. The year began for COVENTRY with a short 909 radar trials period in the Portsmouth areas and 3 weeks of syllabus training in the Portland areas (Lynx DLT and PWO(U) seatime). Concurrent with an SMP from 13 February to 5 March, a period of Command Team Training was also carried out for the team which had been block drafted to the ship during the Christmas leave period. This team was favourably reported on by SMOPS DRYAD who stated that they progressed well and achieved a most satisfactory standard. The team was well motivated and produced a clear, concise picture to enable the Command to fight the ship. The air team was shown to be particularly sound as were the weapon direction team and the Fighter Controller.
- 26. COVENTRY sailed from UK for the last time on 17 March 1982 to take part in exercise SPRINGTRAIN 82. Again air defence was high on the agenda and the Commanding Officer has described his steadily growing confidence in his operations team which was by now soundly trained and extensively practiced. However, high seas firings at the end of March were disppointing as 2 out of the 3 Sea Dart telemetry rounds fired appeared to be rogue. There were also continuing mechanical problems and a serious plummer block defect had to be rectified in Gibraltar during late March.
- 27. In general therefore the ship was well prepared for war. The Commanding Officer was well satisfied with his team and, with a few exceptions mainly on the mechanical side, believed his ship to be both materially sound and operationally ready. However attacks of the sort which proved fatal for COVENTRY on 25 May, that is low level air strikes coming off nearby land, had never been a high priority in the ship's operational training. The Portland inner areas GUNEX 20L had provided limited opportunity for visual engagements with close range weapons and with GSA1 in the emergency mode but the team had never exercised 909 acquisitions under the circumstances they were to meet to

THE VOYAGE SOUTH

- 28. On 2 April 1982 after receiving the news of the invasion of the Falkland Islands, COVENTRY (in company with ANTRIM (FOF1), GLAMORGAN, SHEFFIELD, GLASGOW, ARROW, BRILLIANT, PLYMOUTH and OLMEDA) was ordered to proceed to Ascension Island. During this 9 day voyage preparations for war began in earnest. For the first 24 hours the southbound ships paired off with those who were homeward bound and topped-up with all possible items of stores and spares. COVENTRY was allocated AURORA, however, at the end of a lengthy series of transfers, there were still significant deficiencies (Sea Dart warshots, 4.5 ammunition for example) which did not become available until later.
- 29. During this early phase there was a full and intensive practice programme but without integral carrier support it was very difficult to exercise any realistic air defence drills. In particular, COVENTRY felt the lack of targets

for GWS 30/GSA1 system checks but with SPRINGTRAIN and earlier exercise opportunities behind them, this situation did not unduly worry the Command. At this stage, heavy emphasis was placed on surface procedures as the surface threat from the Argentinian Exocet armed vessels was seen to be dominant. NBCD exercises were conducted regularly and long term securing-for-action measures were set in train. The ship's company also began to make the necessary mental adjustments, putting aside thoughts of the planned return home for Easter leave and coming to terms with the challenge that faced them. Individuals were affected in different ways and, in a general mood of expectancy, everyone kept a close watch on the news as diplomatic manoeuvering continued. Overall, COVENTRY was a confident ship; men were quietly confident in their own ability to fight and generally could not conceive that theirs' was to be a one-way voyage.

- 30. On arrival at Ascension on 11 April there began a further and intensive storing period; the ship was painted in her war colours; essential maintenance was carried out and further practices and exercises took place. Although it was COVENTRY's aim to complete storing before proceeding further south, this was in the event not possible. Orders were received on 15 April to proceed with desptach in company with BRILLIANT (CTU), SHEFFIELD, GLASGOW, ARROW and APPLELEAF southwest towards the Falkland Islands to enforce the Total Exclusion Zone (TEZ) which was to come into force on 1 May. COVENTRY therefore left Ascension still short of several important items of spares for weapons systems and once again was concerned to ensure that these were obtained before action was joined.
- 31. This second stage of the passage south took COVENTRY's Task Unit in a totally silent posture to a waiting position equidistant about 1000 NM from South Georgia, the Falklands and Buenos Aires where again the ships remained silent. Exercise opportunities in this phase were particularly limited and the absence of targets and the restrictive EMCON policy dictated that full overall systems checks were impossible to achieve. Additionally, preparations were hampered by a period of particularly adverse weather in the vicinity of 40°S. Emphasis was therefore placed on those practices which could be completed within the limitations of the situation; NGS was exercised; NBCD was exhaustively pursued and final steps were taken to secure the ships for action. COVENTRY's overriding requirement at that time was to rejoin the main Task Force which was in an overt posture and thus to gain the benefit of target tracking opportunities against Sea Harriers. In particular COVENTRY wanted to be free of the EMCON silence restrictions and to exercise co-ordinated air defence drills: it was now over 3 weeks since the High Seas Firings, the last opportunity to prove the ship's main armament. Within the constraints of what was possible in the prevailing operational circumstances, most practices followed established tactical procedures and, with minor exceptions no new or special drills were developed. The Type 42/22 combination which was to be so extensively used later was not specifically exercised at this stage. Ships remained in this holding position for several days until the main Task Force arrived when final preparations began for the entry into the TEZ on 1 May. COVENTRY in particular welcomed this change of status as the opportunity to radiate on sensors and complete outstanding weapons systems checks.
- 32. COVENTRY was therefore now ready to go to war. There is no doubt that the ship had, during the preceding 6 months, experienced a good programme for this purpose and, with the possible exception of lingering mechanical worries, was well prepared for what lay ahead.

SECTION III - INSHORE AIR DEFENCE OPERATIONS

EARLY OPERATIONS

- 33. The war began in earnest for COVENTRY on 1 May when the Task Force entered the 200 mile TEZ and was strongly opposed by the Argentinian Air Force. Hostile aircraft were held at arms length by Sea Harriers and COVENTRY took a key and successful part in controlling these aircraft into position to attack Mirage and Skyhawk raids. At this stage, and in the subsequent few days, COVENTRY was stationed some 20 miles west of the carrier group which itself was about 80 miles east of Stanley.
- 34. During these early days many CAP engagements took place well to the west of the force, often over land on the Falklands:whilst enemy aircraft remained at high altitude, the land posed little problem to Task Force radars. However, the nature of Argentinian operations was such that many of their aircraft went low over the Islands and the resultant loss of radar contact served to heighten apprehension that air attack on the Task Force was imminent. Air launched Exocet was seen as a prime threat and COVENTRY has commented on the frequent and early use of chaff by most ships in this period.
- 35. Area Air Co-ordination was employed from the outset and appears to have given rise to few problems, although friendly aircraft safety remained a prime concern in COVENTRY. The absence of non-military air tracks served to clarify the air picture and the combination of IFF/SIF and identification manoeuvres seems to have met all requirements for air safety. In this phase COVENTRY had no opportunity to engage hostile targets with Sea Dart, but was content that area air defence was working well and was satisfied that the Type 42 was being employed fruitfully in a position that met the requirements of the main weapon system.
- 36. During the night of 2 May a surface contact was detected approximately 50 miles north of the force and COVENTRY's Lynx helicopter was despatched to investigate. In the subsequent action the contact was identified as a hostile patrol boat and was attacked and sunk by 2 Sea Skua missiles. This historic engagement marked the first firing of Sea Skua in anger and that in a highly successful operation. Later that week, on 4 May, HMS SHEFFIELD was crippled during an Exocet attack by Argentinian Super Etendard aircraft, however COVENTRY took no part in that action as she was patrolling a sector on the opposite side of the formation to SHEFFIELD.

INSHORE OPERATIONS 6-9 MAY

- 37. Task Force operations took a more hostile turn during early May when ships began night time bombardments of Argentinian positions in the vicinity of Stanley. COVENTRY's first turn at NGS came on 6 May when, in company with BROADSWORD who was to provide point air defence cover and ASW support, overnight bombardment took place on a gun line to the south of Cape Pembroke (Annex A Appendix 1). Navigational constraints, including the Argentinian declared minefield, and tactical considerations of air defence and vulnerability to attack from shore emplacements dictated that the ships stood off to seaward during intervals between bombardment runs. Difficulties were encountered with COVENTRY's 4.5 Mk 8 mounting during this first night inshore and this caused the action to be terminated prematurely.
- 38. COVENTRY was again in action with BROADSWORD for shore bombardment on the night of 8 May. Although the mechanical defect in the 4.5 mounting had been rectified on the previous day, there was a recurrence of the same problem

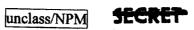


during this night. However, on this occasion, the defect was fully cured. In addition to the overnight NGS operation COVENTRY and BROADSWORD had been ordered by XXXXXXXXX to remain by day in the area to the South of Stanley (Annex B Appendix 1) and to attack Argentinian aircraft which were attempting to drop supplies to the beleaguered Stanley garrison. The aim was clearly expressed by (XXXXXXXXXX (Annex B Appendix 2) when he instructed COVENTRY to act as a "missile trap" and not to "drive the enemy away with CAP" unless this became necessary. A Sea Dart line was therefore established (Annex A Appendix 1). The likely targets, believed to be Hercules with Skyhawk/Mirage escort, were known to be transitting from the west, crossing West Falkland and then letting down to approach Stanley. On this occasion 326 COVENTRY held long range contact on a group of aircraft approaching from the 323 to have missed. These were long shots taken at the earliest opportunity for fear the targets might detect that they had been illuminated then turn away. and crashed whilst taking action to avoid an approaching Sea Dart missile . XXXX

~xxxxxxxxxxxxxxxxxxxxx

AIR DEFENCE AFTER THE LANDINGS - 21 TO 24 MAY

- 42. The first landings took place at San Carlos on 21 May and BROADSWORD, who was responsible for air defence in the AOA on that day, soon became aware that the Type 22 operating in such confined waters could not provide effective cover. 526 contour flying techniques with great effect to achieve maximum surprise. As a result of this and a similar experience in the AOA on 23 May, BROADSWORD recommended to xxxxxxxxx (Annex B Appendix 5) that a more offensive anti-air 338 posture should be adopted and that the Type 22/42 combination could be effectively employed by taking the fight to the enemy. This would involve intercepting attacks as they closed from the west rather than waiting for them to reach their target. Meanwhile on 22 May XXXXXXXXX detached COVENTRY from the carrier group to join up with BROADSWORD to mount an AAW patrol to the north of West Falkland (Annex B Appendix 6). This was essentially an aggressive and offensive plan which appeared to suit better the needs of both GWS 25 and GWS 30. With BROADSWORD providing close air defence and Sea Harriers in support (albeit operating near the limits of their endurance), COVENTRY looked forward to better opportunities to harass incoming enemy air raids with Sea Dart.
- 43. It is worthwhile briefly considering the Type 42/22 tactics at this stage before continuing with the narrative. BROADSWORD had experienced only one period of 'goalkeeping' before the transit south with HERMES: during JMC 821 she protected RFA RESOURCE for a short period (1). As a pair, COVENTRY and BROADSWORD had gained valuable experience operating together south of Stanley in the second 326 xxxxxxxxxxxxxx COVENTRY as guide navigated to patrol pre-determined tracks and BROADSWORD as CTU manoeuvered to maintain station up-threat in COVENTRY's practiced with RERMES. COVENTRY was free to alter course as necessary for 026 informed of changes of course and speed. Initially COVENTRY always used maximum speed when under threat of air attack XXXXXXXXXXXXXXXX But later BROADSWORD asked that slower speeds be used to enable her to maintain her
- (1) Captain F2 letter to FOF2 205/1 dated 8 Apr 82



critical close station when sudden alterations were made to counter developing raids. Warning Red was broadcast. By 22 May therefore when the order to patrol northeast of Sedge Island was received, both Commanding Officers appeared satisfied with their terms of reference and had already established a good working relationship based on earlier experience and an understanding of each other's problems.

526

- 44. COVENTRY had been personally briefed by XXXXXXXXX on a secure voice circuit before detaching for this new mission. COVENTRY had freely expressed his belief that Sea Dart must be given the opportunity to fire at suitable targets on its own terms but was appraised of the problems facing amphibious 538forces in the Falkland Sound and the need for a "missile trap" xxxxxxxxxxxxxx SHL to be established to the north of West Falkland to ensure the attrition of the more northerly raids, inbound and outbound. The term "missile trap" left COVENTRY in no doubt that the aim was to carry out aggressive AAW operations with Sea Dart as the prime offensive weapon system.
- 45. Whilst on passage to her new mortherly patrol line COVENTRY detected and acquired what was believed to be an Argentinian 707 reconnaissance aircraft (possibly the Presidential aircraft in peacetime). A very good firing solution was achieved and the order to engage with a salvo was given but missile launch did not occur due to a flash door fault. By the time this was cleared the 707 had left the feasibility envelope having possibly detected 909 illumination. This was an understandbly annoying frustration when such a prime target escaped unscathed.
- 46. COVENTRY and BROADSWORD patrolled a line 10 miles long running North/South about 10 miles northwest of Sedge Island (Annex A Appendix 2). Argentinian air raids continued to close from the west passing over the centre of West Falkland but all remained outside Sea Dart engagement range. Navigational difficulties in the vicinity of the north western archipelagos (Jason Islands/ Carcass Island) prevented COVENTRY from making ground to the south to close the range. COVENTRY and BROADSWORD therefore planned to bias their patrol further west on the night of 22 May (Annex B Appendix 7) but were stopped when COVENTRY was ordered to re-join the carrier group to the east as a major air launched Exocet offensive was thought possible the following day (Annex B Appendix 8). CAP control opportunities were limited at this stage as CAP stations were to the east of COVENTRY and prime targets were generally on the limit of CAP endurance.
- 47. COVENTRY was detached from the carrier group for the last time on 23 May having refuelled and ammunitioned. Again COVENTRY was personally briefed by XXXXXXXXX on secure speech before departing and in response to his expression 538 of concern about the choice of operating area was told to discuss his that although Sea Dart might be hampered by the close proximity of land there was a pressing need for a co-ordinated AAW picture to be compiled and told to the amphibious forces in San Carlos Water who were subject to repeated and heavy air attack. This verbal brief was followed up by outline signalled instructions from xxxxxxxxxx to BROADSWORD (Annex B Appendix 9).

49. Events of 24 May were straightforward from COVENTRY's point of view. The day dawned clear, fine and cold and the enemy took advantage of the weather to press home repeated attacks on shipping and ground forces in the vicinity of San Carlos Water. It was very much a Harrier day with COVENTRY and BROADSWORD controlling CAP with significant success. No attempt was made to attack the ships on their patrol line and all potential Sea Dart targets were either downed or dispersed by a combination of CAP and fire from both shore and ships Defo almost suicidal flying of the Argentinian pilots continued to surprise COVENTRY, however by the end of the day there was a general feeling that the air battle was being won. That afternoon the COVENTRY command team once again discussed the question of positioning and whether or not they would be better placed elsewhere. High on their agenda was the question of potential compromise of the ship's position as they had now spent all the daylight hours in clear weather conditions well within sight of the coast and had almost certainly been observed from the air by enemy fighters. On balance though, whilst they considered that from their position to the north of the Sound they had been 538 achieving success with CAP control, they decided once again to press for a move into more open water and signalled xxxxxxxxxx with further advice on Type 42/22 positioning (Annex B Appendix 10).

50. Later, after consultation with COVENTRY, BROADSWORD signalled overnight intentions (Annex B Appendix 11) and the plan for air defence of the AOA on 25 May (Annex B Appendix 12). The agreed patrol line for the following day was established slightly further to the northwest to allow COVENTRY a clearer look over the sea towards any threat developing from the west. BROADSWORD retired to fuel during the night and COVENTRY conducted an ASW patrol in the northern approaches to the Sound. The ships then made a rendezvous at first light on Thursday 25 May and began the eventful day that led to COVENTRY's final demise.

SECTION IV - THE FINAL ACTION

THE PATROL LINE

- 51. Dawn on Thursday 25 May was at about 1030 and the day was again cold and clear with very little cloud and light southwesterly winds. COVENTRY and BROADSWORD took up their new patrol line some 10 miles long east/west about 7½ miles north of Government Island (Annex A, Appendix 4). Stationing and manoeuvering were conducted as on the previous day. COVENTRY was guide and BROADSWORD manoeuvred to remainkxxxxxxxxxxxxxxxx up threat. The threat direction was assessed as being all round and air attack was considered highly probable particularly with the clear weather being very much in favour of Argentinian air operations.
- 52. COVENTRY was in good shape when she began her last day. Her fuel and ammunition state was high; there were no known serious defects with either sensors or weapon systems; the propulsion machinery was in good order and morale was assessed as high with the Ship's Company quite well rested and generally confident in their ability to deal with enemy attacks. Organisationally COVENTRY had settled down well into the routine of Defence Watch watchkeeping. The policy for closing up at Action Stations had evolved in the previous weeks from one of reacting to almost every Red warning in the early days to a more selective and less disruptive pattern based on analysis of all available information when assessing the degree of threat posed by a particular raid. COVENTRY's policy for changeover of key personnel when going from Defence to Action Stations was to minimise the number of moves involved and only to permit these in a few selected positions. For example in the case of the XXXXXXXXXXXXXXXXX the very much greater skill and experience of one over the other dictated that more would be lost by leaving the less effective man in the chair than would be gained by trying to maintain continuity.

S26



SEA DART ENGAGEMENT - 251230Z

55. During the forenoon the patrol was substantially without incident. HF voice communications with ships in the Sound were difficult and COVENTRY have described how they had to work a lot harder than on 24 May to tell their air picture; HMS PLYMOUTH became their main point of contact and she relayed the picture to other units involved. The first hint of action came at about 1230 when a report was received from BROADSWORD of 2 hostile air contacts relative) (Annex A, Appendix 4). Contact was held intermittently as the range However at missile:xxxxxxxxxxxxin the bow blind arcs. The target (now seemingly single on 992) had meanwhile crossed North Falkland Sound and was heading towards Pebble Island. COVENTRY assessed that the 2 aircraft were flying in close XXXXXXXXXXXXX The ship's head was by now approaching south, still turning to starboard with the launcher bearing to port. The engagement was successful and BROADSWORD reported having seen a parachute deployed from one of the aircraft. The fate of the other was uncertain and another report (from COVENTRY's GDP) may have correlated with one of the salvo of missiles hitting a rocky islet to the north of Pebble Island.

THE FINAL ENGAGEMENT

MZ at about 1715 and settled down to monitor the developing situation. *XXXXXXXXXXX 7 at about 1745, aircraft were detected on 965 radar bearing about 270 xxxxxxxx closing rate) it was assessed that those contacts were the incoming raid tanking before commencing their attack. Contact was held on 965 radar until their transit across West Falkland. Air Raid Warning Red was promulgated aat this stage and COVENTRY initiated a DR track on the lost 965 contact.

61. At 1800 exactly the ship went to Action Stations and was then approaching the eastern end of the planned patrol line, heading 090 at 8 knots with both Tyne engines selected. Also at this time COVENTRY had control of 2 CAP aircraft (Red Section from HMS HERMES) which were fresh on task and were joining from the east heading for their station XXXXXXXXXXX (Annex A, Appendix 6). Meanwhile BROADSWORD detected the incoming raid on 967 Doppler radar as 2 pairs of aircraft some 10 miles apart tracking east over West Falkland and initiated link tracks which were indicated to COVENTRY. Although these tracks did not directly correlate with the stale DR from the lost 965

contact, COVENTRY was satisfied with the warning provided and was fully ready for the raid. However, despite persistent searching, firm 992 contact was not established until the first pair of aircraft came clear of land flying in echelon port at about 10 miles range immediately to the north of Pebble Island. (Annex A, Appendix 7, Figure 1). 'Alarm Aircraft - Blind' was called in COVENTRY's Operations Room and both the Sea Dart and the MGD(B) repeatedly indicated the targets to the 909s but, at this stage, without success. Both radars reported clutter out to 10 miles but it is likely that inaccurate TI bearing was the problem.

- 62. Precise timings are difficult to establish but by this time (1820 approximately) the ship had reached the eastern extremity of its patrol line *0*38 had already decided to continue heading east as there was no immediate navigational danger and it was apparent from Command open line that action SH4 was imminent. Visual detection of the raid came when the aircraft were some 8 miles identified as Skyhawks flying in close formation, very low and, at the call 'Alarm Aircraft Visual', control of the 4.5" gun was given to the however visual reports indicated that all fell well short of the target. this time both 20mm and small arms fire had been brought to bear and the attacking aircraft had begun a series of evasive weaving manoeuvres. Although they had been flying directly at COVENTRY when they began their approach, when faced with a barrage of AA fire they turned to port and made for BROADSWORD eventually passing to starboard and astern of COVENTRY (Annex A, Appendix 7, Figure 3). This pair attacked BROADSWORD with 30mm cannon fire and struck the ship with one of 4 bombs dropped.



- 66. The final moments of the last attack have proved very difficult to reconstruct in any accurate detail. There was, no doubt, some measure of confusion. The time interval between the 2 pairs of enemy aircraft was no more than 90 seconds and although the approach of the second pair had been detected on 992 radar at some positions in the Operations Room (Annex A Appendix 7, Figure 5) in other key areas their presence was not apparent until the visual sighting was made and broadcast by which time they were only 4-5 miles at the most from COVENTRY (Annex A Appendix 7, Figure 6). When detected on 992 they were over the north coast of Pebble Island crossing fast from right to left some 8-10 miles from the ships and as they turned towards attention was still directly largely at the retreating first pair. In COVENTRY, 53% 3 more or less simultaneous attempts were made to engage the approaching raid and these are described separately in the following paragraphs although the 244 exact sequence and overlap cannot be confirmed. Also at about this time XXXX first pair of aircraft departing to the southwest. He also thought he saw change from Tyne to Olympus drive which was never completed. This did not affect the ship's manoeuvering.
- 68. Although it appears that the aircraft were painting on 992 from some 8-10 miles range the Target Indication Operators were not alerted to their presence quickly enough to enable 909 to make a timely acquisition; furthermore it is probable that the Aft 909 was placed in blind arcs at a crucial moment by the ship's turn to starboard. The 4.5 gun was therefore put to followxxxxxxxx opened fire almost simultaneously. However the fire was checked after only XXXXXXXXXXXX

- 69. Finally as the incoming raid closed to less than 3 miles, possibly closer, the Sea Dart was fired but as is now evident from BROADSWORD's 526 GWS25 video tape, the launch angle and bearing of the missile appeared to be very wide of the approaching target. The sequence of events in this to engage the enemy now at very short range it is possible that the 909 acquisition was on land or clutter and as a result nothing was achieved. Some 16 seconds later the ship was hit by 30mm cannon fire from the lead aircraft of the pair and almost immediately afterwards by 3 out of 4 bombs dropped at very low level by both aircraft (Annex A, Appendix 7, Figure 8).
- 70. The engagement from BROADSWORD's point of view was equally frustrating This frustration and a homb hit aft did much to cloud the clear picture.
- The XXXXXXX) was not aware of COVENTRY's alteration of course to starboard although it had been signalled:xxxxxxxxxxx(UHF). xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
- 72. The KXXX, in the absence of other instructions from the Operations Room, followed COVENTRY round to starboard in a wheel manoeuvre slightly inside the wake. This put BROADSWORD progressively down threat from the second pair of aircraft approaching from 175° - ie 20° to the left of the first pair (see Annex A Appendix 7).
- 73.

SECTION V - THE DAMAGE

THE ATTACK

74. Although the precise identities and arming/weapon loads of the 2 aircraft in the second wave of the final attack have not been established, it is clear that the first aircraft fired a burst of 30mm cannon fire and then dropped at least 2 bombs. The second aircraft may not have fired any cannon shells but certainly dropped bombs, probably 2.

75. Hits were achieved by 30mm cannon shells and by 3 out of the 4 bombs that were observed falling. The size and type of bombs dropped is not known but it is probable from the severity of the explosions that they were 1000 lb weapons. Damage occasioned by each of these means is described below.

DAMAGE

30MM AIRCRAFT CANNON FIRE

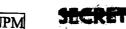
76. 30mm cannon fire hit the ship's port side just above the waterline in 3J, the Forward Auxiliary Machinery Room (FAMR) and in 3K slightly higher than the Forward Engine Room (FER). (Annex F, Appendix 5, Plate 2). The watchkeeper in the FAMR sighted a horizontal slot 5' x 8" wide behind the port air conditioning plant. The shell(s) then entered the FER between the ship's side and the diesel service tanks through 3J/K bulkhead. The entry was not sighted but was confirmed later when a bomb blast in the FER vented a small fireball and debris into the FAMR. The FAMR was safely evacuated with both diesel generators left running, however this compartment flooded from the sea and the FER when the ship heeled to Port as a result of further bomb damage.

77. An eye witness from the quarterdeck also saw holes on the waterline port side extending from P section right aft to the stern, he also saw the 182 Sonar winch situated aft on the quarterdeck (2R) marked and possibly dislodged from its deck mountings. Higher level cannon shell hits were also sighted in the port side of the hangar.

78. There is no evidence from eye witness accounts to suggest that either of the aircraft in the first pair which attacked BROADSWORD strafed the starboard side of COVENTRY, however a video taken by HMS BROADSWORD shows smoke emitting from a series of holes above the waterline on the starboard side prior to final capsize. This attack may be further substantiated by an account of the air lock door in the starboard side of the hangar (1N) being found off its hinges by personnel evacuating to the hangar from the aft DC base.

FIRST BOMB

544



unclass/NPM

It is thought that the CMR (4G) and the Provision Room area (4H) were flooded. This flood spread upwards into the Computer Room (3G) and the Naval Stores (3H).

SECOND BOMB

The second bomb entered the ship in the port waist at 1H penetrating the passageway at 2H, falling into the Naval Store 3H and probably finally penetrating the Provision Rooms in 4H. The bomb did not explode in the Naval Store and either remained unexploded in 4H or exited the ship outboard to sea. There is no evidence of an underwater explosion occurring in the vicinity of H section. Annex F, Appendix 5, Plate 2 shows the bomb entry marked by a vertically blackened area just forward of the NILE Stowage. The scorched screen residual smoke are partially attributable to a fire resulting from the severed hydraulic ring main that runs outboard in 2 deck passageway.

THIRD BOMB

The third bomb entered the ship in OIK ie through the Port Olympus intake and exploded aft in the port side of the Forward Engine Room, the blast affected the whole of K section from 5 deck to 01 deck. The blast profile viewed from HMS BROADSWORD's bridge is shown in Annex F, Appendix 5, Plate 1 photograph where the while or silver strips blown to starboard are believed to be the louvres from the starboard Olympus intake assembly. It is obvious from this view that the main force of the blast vented through the Port side Olympus intake and photograph shows a section of displaced plating between the red based whip aerial and the foremast as a result of the outward blast.

The Junior Rates Dining Hall 2K amidships (above the Forward Engine Room) outright.

84. Photograph shows no apparent damage to K section hull plating on the Port side above the waterline except for two minor horizontal splits between 2 and 3 deck under the Cheverton davits. From the resulting heel to port immediately after this explosion, it is assumed that there was large scale underwater damage in K section, also with the port access hatch to the Engine Room blown out into 2 deck there was an irreversible loss of Watertight Integrity. In the Type 42 destroyer 2 deck passageway is subdivided into sections by doors for blast and smoke boundary protection, but there is no watertight integrity between sections due to the non-glanded passage of pipework outboard of the door frames. Examples of this problem can be seen at (Annex F Appendix 7 Plate 2).

85. The Forward Engine Room/After Engine Room bulkhead was ruptured on the Port side close the ship's side admitting a fireball and blast. The Tyne engines remained running but de-clutched from the gearbox and propulsion was totally lost at this point. The shock-damaged control console in the MCR would have put the propulsion system (ie propellor pitch and engine throttle) in this fortuitous 'fail safe' mode. There was however the chance that the ship might have continued being driven at 21 knots ahead whilst settling deeper in the water and capsizing. Alternatively the ship could well have stopped in the water and eventually rolled over with shafts still turning but at zero propellor pitch. In circumstances other than rapid heel of the ship and flooding of the After Engine Room from the Forward Engine Room the Tyne propulsion and control could have been recovered manually providing the hardware was intact. As a direct result of the Forward Engine Room explosion, key DC and MCR personnel were forced to evacuate because of shock and smoke ingress from 2 deck passageway.

86. Within 10-15 minutes of the bombs exploding in the ship there was major flooding in G, H, J, K and L sections, the ship heeled to Port in the loll condition at about 15°. After 20-25 minutes the deck edge (heal now 25°) was immersed allowing the sea to enter 2 deck passageway from the second bomb hole in the Port waist at 1H and, at the same time, water was flooding 2 deck in K section from below via the blown hatch in the Forward Engine Room. The loll condition increased to 90° and the ship finally capsized and sank some time later.

FOURTH BOMB

87. A fourth bomb was observed to clear the ship diagonally from Port to Starboard over the Flight Deck landing astern of the ship but there are no reports of it landing nor any evidence that it exploded either on or near the ship.

DAMAGE CONTROL AND FIREFIGHTING

DAMAGE CONTROL

88. Due to the rapid development of heel caused by the flooding of 5 compartments from the Port side, no attempt to contain flooding or repair damage was made. It is also now clear that in the circumstances any attempts of this sort would have been futile and could have led to further loss of life when DC parties might have been trapped below as the ship rolled over.

FIREFIGHTING

89. In the immediate wake of the attack attempts were made to survey and then to contain outbreaks of fire, in particular those visible from the upper deck and that in the Operations Room. However these were short lived as the list rapidly developed and as with damage control attempts, were prudently abandoned when it became clear that the end was nigh.

SUMMARY

90. With 2 deck breached in 1H, 2H and 2K and with free flooding below in 5 sections of the ship it was inevitable that flood water would be transmitted along 2 deck at least between G and M sections and if 2E/G and 3M/N doors were left open the flooding would have extended throughout the ship. In this condition, a massive capsizing moment was established, the reaction being that the ship rolled on its beam ends. From this position without a water-tight superstructure the ship steadily deepened and finally capsized in a state of uncontrollable loll. Eventually sinking was then purely a function of the rate of dispersal of residual buoyancy as air was forced out of the ship. It is sobering to note that this critical condition in a Type 42, which in this case was caused by massive bomb damage, could be encountered in peacetime in a serious collision and would lead to the same disastrous and inevitable end.

SECTION VI - THE ESCAPE AND RESCUE OPERATION

GENERAL

91. This concluding section of the narrative covers, in outline, events that took place after the ship had been hit and was then abandoned. Full details can be found at Annex G.

EVACUATION

- 92. The speed with which COVENTRY capsized and the hopelessness of the damage control and firefighting situation led the ship's company very rapidly to the conclusion that evacuation was the only prudent course of action.
- 93. Once damage had been sustained, power was lost to the main broadcast and it was therefore not possible to control evacuation centrally nor to give a general order to Abandon Ship. The operation was therefore quite spontaneous with groups of men being directed to make for the upper deck by their immediate superiors and in many cases doing so without specific orders.
- 94. There were few serious problems with escape. Many different routes were followed and a wide variety of minor difficulties was encountered (bent/broken ladders, jammed doors, buckled hatches, failed lighting, smoke, list of the ship etc). No one perished as a result of evacuation problems.

LEAVING THE SHIP

- 95. Again there were few serious problems with leaving. As the ship steadily rolled over to port men found increasing difficulty in maintaining their footing on the upper deck. The first men to jump did so when the list was less than 10 degrees and were able to enter the water well clear of the ship's side. As the list developed it became progressively more risky with a real danger of hitting underwater obstructions (stabiliser fins and bilge keels). As these obstructions broke surface (at about 25-30° list) men were able to slide, eventually to walk down the ship's side and then to jump from the bilge.

SURVIVAL

- 98. On average men spent about 15 minutes in the water which was cold (circa 7°C). Even those wearing survival suits suffered discomfort from cold although the duration of the rescue operation was such that this did not become a dominant factor.
- 99. Lifejackets worked well and only a handful of men encountered problems with flotation, mainly because they lost their personal lifejackets below decks and did not/could not avail themselves of spares before entering the water.

Survival suits however posed different problems and attracted much adverse comment from survivors. Only 35% of the 276 survivors managed to don the suit correctly; even amongst these men, many suffered ingress of water and later found difficulty with rescue when the 'Michelin Man' effect complicated the problems both of entering liferafts and then climbing scrambling nets on reaching BROADSWORD. Over half either did not attempt to put on the suit or failed to do so properly before entering the water. Again there was a variety of reasons but list of the ship, loss of the suit below decks and reluctance to remove the lifejacket all figures prominently amongst these.

100. As with other phases of the abandon ship operation, no general order to slip the liferafts could be given. Launching of the rafts was therefore undertaken on the initiative of individual officers and senior ratings when the ship was already listing some 10° to port several minutes after the attack. No attempt was made to launch the port set of rafts due to the apparent danger of capsize. All 8 starboard side rafts were slipped and all inflated correctly. Considerable difficulty was experienced in actually manhandling these rafts over the side out of their stowages as the list to port increased.

101. Men entered the rafts wherever they found them and, as a result, uneven loading took place. With only 8 rafts in the water some endedup seriously overcrowded with as many as 47 men counted in one raft (88% overload) and some men still outside in the water clinging to the grab ropes. There were considerable problems when attempts were made to propel laden liferafts away from the ship's side. Rafts from the after group eventually drifted astern and clear of the ship downwind. However some of the forward rafts drifted around the bow and back close under the port side, becoming entangled with obstructions as the ship steadily rolled over. One raft was eventually punctured by the antennae of an unfired Sea Dart missile still on the launcher and eventually sank causing the occupants to take to the water again.

RESCUE

102. Rescue was affected swiftly by means of BROADSWORD's boats (whaler, Cheverton and 2 Geminis) plus about 10 helicopters from RFA FORT AUSTIN. The majority of men were deposited in BROADSWORD but some of the worst injured were flown directly ashore to a field hospital. All men were recovered from the water by about 2000Z and the search was called off at dusk when it was clear that no more survivors could be found.

103. BROADSWORD transferred the fit survivors to other ships in San Carlos later that night and sent the remainder of the wounded to the hospital ship UGANDA.

SUMMARY

104. In general the evacuation of the ship and subsequent abandonment went well. The comparatively small number of deaths and injuries is to some extent a result of the speed and efficiency with which this was carriedout. There was however a considerable degree of luck: the weather was clear and calm; darkness had not fallen; the enemy did not make another attack; BROADSWORD and numerous large helicopters were close at hand. It is not difficult to envisage other circumstances in a South Atlantic winter battle when luck might not have been so much in evidence and the consequences for all concerned would have been serious.

105. The Board has noted and reported separately on a number of instances of heroism during this period following the attack. Several men totally disregarded their own safety to assist others who were in difficulty both onboard the ship and subsequently in the water. The general absence of panic and cool manner in which the ships company behaved are a credit to their underlying sound organisation and good discipline.

- 23 -

7

unclass/NPM

SECTION VII - MAJOR CONCLUSIONS

106. In this section we draw the major conclusions of our investigations in the form of answers to those broad questions which must be uppermost in most people's minds. Section VIII examines these conclusions in more detail and makes recommendations.

- Q1 Was COVENTRY properly trained to cope with situation at 251820Z MAY?
- A No. She had inadequate training for inshore AAW and massive damage situations.
- Q2 Was COVENTRY uniquely undertrained?
- A No. On the contrary in many areas she was better trained than most.
- Q3 Was COVENTRY in a satisfactory material state?
- A Yes.
- Q4 Was COVENTRY being properly employed?
- A Yes. In the extreme circumstances prevailing at the time. The very high risks were well known at all levels.
- Q5 Should BROADSWORD/COVENTRY have moved when their position was thought to have been compromised?
 - A Possibly to the east but this would not necessarily have affected the outcome because their movement would have been seen from shore.

938 8NH

- Q7 Could COVENTRY have been saved?
 - A No. The massive damage to Watertight Integrity made excessive holl and final capsize inevitable.
- Q8 Could any initial casualties have been avoided?
- A No using existing doctrine. The distribution of people within the ship can be improved.

- Q9 Was evacuation properly conducted?
- A Yes but in a hasty and apprehensive manner as the ship's list rapidly increased.
- Q10 Was survival equipment adequate?
- A a. Lifejackets Yes.
 - b. Liferafts Yes in spite of being heavily overloaded.
 - c. Once Only Suits Yes when put on properly.
- Q11 Did rescue operations go well?
- A Yes.
- Q12 Should anyone be censured?
- A No.
- Q13 What major issues need to be resolved?
- A a. Should a Type 42 be able to defend herself against the low level short range/pop-up attack by manned aircraft/missiles?
 - b. If yes to what extent should SEA DART be improved and/or other CIWS be fitted?
 - c. What tactical development and training effort should be devoted to close range defence?
 - d. Decide what types of major damage a Type 42 should be able to survive. Then, if necessary, modify the ships and their training accordingly.

SECTION VIII - CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

107. For ease of reading the conclusions and recommendations have been divided into the following main sections:

- General Considerations.
- b. Operations.
- Weapons Engineering.
- Damage and Damage Control. d.
- Escape/Survival/Rescue.
- f. First Aid and Casualties.
- Clothing and Burns. g.

CONCLUSIONS

GENERAL CONSIDERATIONS

108. Preparations for War

- COVENTRY's programme from August 1981 to April 1982 provided (paragraphs 25-27) an ideal preparation for Operation CORPORATE. The ship had been well reported on during Command Team Training in February 1982, By the end of April 1982 the ship was well prepared for war except that:
 - (1) There were some outstanding ME defects.
 - Sea Dart remained unproven.
 - (3) The ship had little experience of inshore AAW.
- En route to the TEZ there were few opportunities to exercise (paragraphs 29-31) AAW procedures and weapons systems due to restrictive EMCON and lack of targets. Surface warfare, NGS and NBCD training were given priority. The ship's company adjusted themselves to the thought of war and were quietly confident of their abilities.

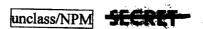
OPERATIONS

109. Early Operations

- COVENTRY gained useful CAP control and Area Air coordination experience with the Carrier Group XXXXXXXXXXXX 1-5 May.
- Early NGS operations were not successful owing to gun defects. These were rectified and the gun gave no further problems.

Para 38

Para 33-



	c. The first Sea Dart engagement (C130/Lear Jet) was not successful. The targets were at the limit of feasibility.	Paras 38 and
	d. The successful Sea Dart engagement against the Puma helicopter whilst encouraging was not representative of the subsequent inshore problems.	Para 40
	e. %XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Para 40 606 Annex D, Para 3d(2)
	f. After her inshore operations South of Port Stanley COVENTRY reported that she would be best employed west of West Falkland.	Para 41
	g. Offensive AAW operations required a Type 42 to the North and West of West Falkland with a Type 22 in close	Paras 42 and
	support. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	526
	h. COVENTRY's policy for closing up at Action Stations involved the minimum changes of position. The ship was fought on the watch with additional back-up where needed.	Para 52
110.	42/22 Combination	
	a. The 42/22 combination showed initial promise inshore.	Annex C, Para
	b. However the inherent dangers were amply demonstrated when GLASGOW was hit.	Annex C, Para
	c. COVENTRY's manoeuvres during the successful Sea Dart engagement at 251230Z and 251530Z appeared to be motivated by considerations of evasion. They complicated BROADSWORD's up threat manoeuvering.	Para 56
	d. The significance of COVENTRY's alterations of course do not seem to have been registered in either ship.	Para 59
	e. The manoeuvering methods developed by COVENTRY/ BROADSWORD failed (under great stress) because:	
	(1) Lack of guidance on evasive manoeuvering.	Annex C, Para
	(2) Lack of anticipation of COVENTRY's evasive action.	Annex C, Para 15, Para
	(3) XXXXXXXXXXXXXXXXXXIn BROADSWORD was not aware of the threat axis for the second attack.	Annex C, Para 16, Para
	(4) The manoeuvering method in use was not positive enough.	Annex C, 538 Para 14 544

111. Choice of Patrol Lines 22-25 May

Para 46
Para 49
Para 50
Para 53
Para 54
Annex C, Paras 19-20
Annex C. Para 22 SQ6
Annex C, Para 23
Para 54 538 SNA
Para 52
Para 60-61 516
Para 61
Para 61
Para 67 338 544
Para 68 526

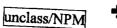
	CCCBET
unclass/NPM	BECKEI

unclass/NPM	
g. The XXXX did not provide a clear picture to XXXXXXXXXX in the latter stages of the attack. They had only 90 seconds to do so.	Para 66 538 SNO SNN
h. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Para 68 Jolo
j. Visual Gun Direction is difficult in Type 42s and targets should be kept on one side of the ship if possible.	Paras 35-36
NOTE: Detailed GWS 25 and GWS 30 conclusions are considered under Weapons Engineering at Annex D.	
WEAPONS ENGINEERING	
113. Lessons from Early Operations	
a. The WE Department was in good material state on 25 May.	Annex D, Para 1
b. The WE Department was fully manned to the approved Scheme of Complement.	Annex D, Para 2
c. A prolonged transit in EMCON silence militates against routine servicing and testing of WE transmitting sensors.	Anmex D, Appendix 4
114. Early Operations	
a. No direct evidence of target hits was available until the Puma engagement.	Annex D, Para 3a(4)
b. A failure on the right lane upper flash door locking bolt prevented an engagement against the Boeing 707 recce aircraft 22 May.	Annex D, Para 3a(5) Annex D, Appendix 2 Para 5
c. The 4.5 Mk 8 experienced a rash of problems during NGS firings: all were satisfactorily resolved by mid May. During the final engagements approx 24 rounds were fired without mechanical/RPC mishap.	Annex D, Para 3b(3) Annex D, Appendix 1, Paras 2 and 3
115. The Final Action	
a. Sea Dart was successful in 2 engagements on 25 May, at 1230 and 1530. During the final engagements, a missile was fired but as an unaimed shot.	Annex D, Para 3a(6) Annex D, Appendix 1, Para 4,
b. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Para 58
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	_

XXXXXXXXXXXXXXXX

Annex D, Appendix 1, Para 2

526





116.

	d. Neither the gun nor the Sea Dart was used effectively during the final engagement. The only rounds fired by the gun were in depression.	Annex D, Appendix 1, Paras 5 and 6
	e. GWS 30 target indication problems rather than clutter appear to have hampered 909 acquisition.	Annex D, Appendix 1, Para 2; Annex C,Para
	f. Pressure of events probably caused the XXXXXXXXXXXXXXXXX to use incorrect drill in attempting to control XXXX turret when it went into Red limits.	Annex D, Appendix 1, Para 3 538
	g. Decisions left to the XXXXXXXXXXXX concerning 'Sectoring out' XXXXXturret are prone to error under action conditions.	Annex D, SNN Appendix 2, Para 6
•	Equipment	
	a. A pair of binoculars was illegally strapped to the port LAS visual head to supplement a permanently filtered left eyepiece. The effect was to give a false angle of sight from the port LAS.	Annex D, Appendix 1, Para 5
	b. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Annex D, Solo Appendix: 2, Paras 1 and 2
	c. Upper Flash Door locking bolts of the design available in COVENTRY are inadequate and a system freeze following failure in unacceptable.	Annex D, Appendix 2, Para 4
	d. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Annex D, Solo Appendix 2, Para 7
	e. A range of 4 minor hardware improvements to the Radar Type 909 operators' console seem sensible and should be incorporated.	Annex D, Appendix 5
	f. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Annex D, Appendix 4, Para 4
	g• xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Annex D, Appendix 4,556 Para 5
	h. There is no listing available showing criticality	Annex D,

of performance testing/servicing under action conditions.

Annex D, Appendix 4, Para 6

Appendix 4, Para 5

DAMAGE AND DAMAGE CONTROL

117. Preparations

Damagé Control Parties were correctly closed up Annex F before the attacks began. Paras 1-5

'Take Cover' drill was not exercised prior to being Annex F used operationally. Paras 4-5

118. Damage

The precise weapon load of each attacking aircraft is not known.

Para 70 Annex F, Appendix 1

COVENTRY was hit by 30mm cannon fire and 3 bombs (probably 1000lb). Two exploded.

Para 71 Annex F, Appendix 1

30mm cannon fire split the ship's side (5'x8") allowing the Forward Auxiliary Machinery Room (3,4,5J) to flood as the ship heeled. The diesel generators were undamaged and continued to run.

Para 72 Annex F, Appendix 1

Two bombs, one of which exploded, flooded 3, 4G and 3, 4H.

Paras 75-77 Annex F, Appendix 1

One bomb flooded the Forward and After Engine Rooms.

Paras 77-81 Annex F, Appendix 1

The Computer Room (3H), Operations Room (2G), Senior Ratings Dining Hall (2K), HQ1/MCR 2L were devastated by blast.

Paras 75,79 & 1 Annex F, Appendix 1

2 deck passageway distributed water throughout the ship as she lolled to port and deepened. Capsize was then inevitable.

Paras 80-82, 80 Annex F, Appendix 1

119. Recovery from the Attack. HQ1 and other DC teams evacuated the HQ1/MCR/Technical Office complex soon after damage and attempted to take control of DC operations from the Aft Section Base.

Annex F Paras 8-10

120. Damage Appreciation

No single out-station knew the total extent of damage.

Annex F Paras 12-16

All DC communications had failed.

Annex F Paras 12-16

The Forward Section Base did not know that HQ1 had been evacuated.

Annex F Paras 12-16

- 31 -

121. The After DC Base The huge search and rescue potential of the After Annex F DC Base was never used XXXXX to establish contact forward XXXXXXXXXXXXXXX The normal reaction and logic of the XXXXXXXXXXXXXXXX Annex F Paras 18-21, SAL xxxxxxxxxxxx were numbed by the shock of actually being hit and seeing casualties. Annex F There was acute awareness of the heel and fear of being Paras 18-21 trapped between decks. 122. The Forward DC Base. The Forward DC Party was distracted Annex F from its primary task when faced with a flood of injured and Paras 23-28 538 123. Stability After Damage COVENTRY heeled some 16° to Port when flooded to 2 deck Annex F in several sections of the ship. Para 34 The angle of heel developed to 45° + as flooding Annex F Para 35 gradually caused deck edge immersion. Annex F Final resistance to capsize was lost as heel approached Para 35 124. Watertight Integrity of 2 Deck Passageway Annex F Although 2 deck is subdivided from G to N Section Para 36 only 3 bulkheads are fully watertight. Annex F Some bulkheads are fitted with watertight doors but Para 36 are not watertight overall because of unsealed pipe penetrations. Annex F These bulkheads can be made watertight by A+A action Para 36 but other modifications to ventilation arrangements then become necessary. 125. Stability Documentation The information in the NBCD Class Book is inadequate. Annex F Para 37

OHO

ESCAPE/SURVIVAL/RESCUE

Annex G 126. Organisation and Training. With the exception of 2 points Paras 2-4 (unpacking, checking and restowing each survival suit and briefing on dangerous areas for leaving the ship) all reasonable preparations had been made before entering the war zone.

127. Evacuation of the Ship

a. Due to the loss of the main broadcast, there was no general order to abandon ship.	Annex G Para 5
b. There were few serious problems with evacuation, although 28% of survivors had some degree of difficulty. (A detailed breakdown of problems is at Annex G, Appendix 1).	Annex G Para 6
128. Assembly at Abandon Ship Stations. Assembly was orderly but actual positions were dictated by mens choice of escape route, what they had done on the way there and the difficulty in maintaining a foothold on the rapidly listing deck.	Annex G Paras 7-8
129. Leaving the Ship	
a. In the absence of main and upperdeck broadcasts no general order could be given to leave the ship.	Annex G Para 9
b. Men became reluctant to leave the ship as underwater obstructions broke surface when the list reached 25-30 degrees.	Annex G Para 9
c. Although a number of men sustained minor cuts and	Annex G
bruises whilst leaving the ship there was (with the exception of the XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	338 344
130. Personal Survival. Despite the cold weather conditions personal survival did not pose many serious problems.	Annex G Para 12
personal survival did not pose many serious problems.	
personal survival did not pose many serious problems. 131. Time in the Water a. All survivors spent some time in the water (minimum	Para 12 Annex G
personal survival did not pose many serious problems. 131. Time in the Water a. All survivors spent some time in the water (minimum 15 seconds, maximum 90 minutes, average 15 minutes). b. Cold was a problem but its effects were mainly limited to discomfort. Some men displayed symptoms of exhaustion	Annex G Para 13 Annex G
personal survival did not pose many serious problems. 131. Time in the Water a. All survivors spent some time in the water (minimum 15 seconds, maximum 90 minutes, average 15 minutes). b. Cold was a problem but its effects were mainly limited to discomfort. Some men displayed symptoms of exhaustion whilst attempting to reach liferafts.	Annex G Para 13 Annex G
personal survival did not pose many serious problems. 131. Time in the Water a. All survivors spent some time in the water (minimum 15 seconds, maximum 90 minutes, average 15 minutes). b. Cold was a problem but its effects were mainly limited to discomfort. Some men displayed symptoms of exhaustion whilst attempting to reach liferafts. 132. Survival Suits a. Only 35% of the survivors managed to dress correctly in the survival suit. Many subsequently suffered from the	Annex G Para 13 Annex G Para 13



134. Liferafts

a. No general order to launch rafts was given.	Annex G Para 18
b. No attempt was made to launch port side rafts due to increasing list of the ship. These rafts did not appear on the surface when the ship capsized.	Annex G Para 19
c. All 8 starboard side rafts were released but with increasing difficulty as the list to port increased.	Annex G Para 20
d. Liferafts in the water were heavily overladen (up to 47 men in one raft).	Annex G Para 21
e. Laden liferafts were difficult to propel from the ship's side. Some became trapped and one sank after being punctured.	Annex G Para 22
ADSWORD's boats and 10 helicopters from RFA FORT AUSTIN.	
DOM ATD AND CACHAIMING	

FIRS

136.

135. Rescue. Rescue was swiftly and effectively carried out by BROADSWORD's boats and 10 helicopters from RFA FORT AUSTIN.	
FIRST AID AND CASUALTIES	
136. Training	
a. It is doubtful whether every member of the ships had adequate knowledge of BR 25 (First Aid in the Royal Navy).	Annex H Para 3
b. Although key First Aid personnel had received a good training this had not included work with real wounded. It is clear that familiarity with the problems of facing and dealing with wounded speeds up the response to the problem and promotes a calmer, more rational atmosphere.	Annex H Para 5
c. The Forward DC party appears to have been made less effective by the flood of wounded from the Operations Room area, none of whom was seriously injured.	Annex H Para 22
d. No cold water for the treatment of burns was stored in baths, basins or in any containers that could be pressed into use.	Annex H Para 22
e. Only the MO was able to set up an intravenous saline infusion. This can be lifesaving in serious burns cases and must be considered as a First Aid measure.	Annex H Para 23
f. Two men died, one indirectly, and one was quite seriously injured through adopting an incorrect posture at 'Take-Cover'.	Annex H Para 32a

CLOTHING AND BURNS

137. Protection Afforded by Clothing

a. There is no evidence to prove a difference between the protective qualities of cotton and man made fibre clothing as supplied in the RN.



b. There is good evidence to suggest that more layers of clothing improve protection against flash fire.

RECOMMENDATIONS

OPERATIONS

138. The following recommendations arise from conclusions drawn from both the narrative and relevant Annexes.

139. General Considerations

- a. The requirement for GWS 30 fitted ships to be able to engage low level/pop-up targets at short range should be re-examined. We believe the requirement exists.
- b. The fitting of PDMS/CIWS in GWS 30 ships should be considered. The need (or otherwise) for the 42/22 combination should be established and appropriate SOP's developed. (N.B. Subsequent recommendations are subject to decisions taken on 3a above).

140. Training

- a. Operational Performance Standards (OPS) for the use of GWS 30 (or PDMS/CIWS to be fitted) against low level/pop-up targets should be developed.
- b. Training should be instituted at appropriate levels (career, PJT, CTT, OJT) to meet OPS in a. above. (This training may be beyond the capabilities of those now manning the system).
- c. A policy for the fitting and use of onboard continuation training equipment (particularly in the quick reaction situation) during prolonged operations or exercises needs to be developed.
- d. 42/22 SOP's (if developed) should be exercised at all levels.

141. Documentation

526

142. Systems - Expected Performance

a. The need to carry out confidence checks of Weapon Systems when opportunity targets object to being illuminated should be established. Balloon runs?

unclass/NPM

- b. Realistic expectations of system performance should be made from analysis of all available information/and widely disseminated in order to dispel optimism or pessimism.
- 143. Systems Preparations. No recommendations. Systems were well prepared.
- 144. Systems Support. The support was excellent; those concerned should be congratulated (no doubt they have).
- 145. Systems Operational Use

526

*3*26

- c. Greater emphasis should be placed on the use of GSA1 in all its AA modes.
- d. Consideration should be given to providing communications for the MGD(V) on the port side of the Type 42's GDP.

WEAPONS ENGINEERING

- 146. EMCON/Dummy Loads/Performance Testing

 - b. Sensors which need frequent testing of transmission to maintain confidence in their performance levels should validate these against ship launched targets at every opportunity.
 - c. Ships should be provided with a list of minimum maintenance and servicing items for use under action conditions.
 - d. Where dummy loads are provisioned, every design step should be taken to minimise radiation.

147. Radar Type 909

148. Sea Dart Launching/Handling

- a. Upper Flash Door locking bolt arrangements should be redesigned, trialled and fitted as a matter of urgency.
- b. Procedures must be developed which allow use of the system, even in a degraded mode, if minor features of the engagement sequence fail.
- 149. GWS 30 System. A lethality prediction process should be included in the software.

150. GSA 1

- a. Software should be provided which controls gun sectoring.
- b. Ships should be reminded that binoculars are not to be lashed on to the LAS without proper authority.

DAMAGE AND DAMAGE CONTROL

151. Training

- a. Take Cover drill must be introduced to ships NBCD training.
- b. DC team training should impress the need for men to keep their station until directed otherwise by the leader.
- 152. Equipment. Typical heel angles at various levels of underwater damage should be displayed on Section Base state boards.

153. Construction

- a. Type 42s currently deployed should make the non-watertight bulk-heads watertight by self help or with the assistance of support vessels.
- b. Similarly Type 42s in the UK should be modified and examined by their Admin Authority before re-deployment.
- 154. <u>Documentation</u>. An immediate update on Type 42 stability behaviour should be forwarded to ships and training establishments for insertion in the NBCD class book.

NOTE: A number of other minor recommendations are incorporated into 'Damage Control - Lessons Learnt' - Annex F Appendix 8.

ESCAPE/SURVIVAL/RESCUE

155. Training

- a. More emphasis should be placed on Sea Survival and Raftsmanship Courses for ships as run by HMS DAEDALUS.
- b. Periodic drills should be carried out to familiarise men with the technique for dressing in and wearing the survival suit.

156. Equipment Design and Provision

a. Some system of distinctive deck edge or guardrail marking should be investigated which highlights those areas where underwater obstructions make abandon ship dangerous.



- b. The design of the survival suit should be re-examined to determine whether drain plugs could be re-incorporated into the feet.
- c. Liferaft stowages should be modified to ensure that rafts can be released without lifting even when the ship is listing.
- d. The number of liferafts carried should be increased so that there is sufficient on each side of the ship for all of the ship's company.
- e. The design and equipment fit of the liferafts should be re-examined to establish whether better towing fixtures could be provided and whether the provision of some form of paddle is necessary.

FIRST AID AND CASUALTIES

157. Training

- a. Individual training should be re-examined to increase the emphasis on first aid, in particular familiarity with BR 25 (First Aid in the Royal Navy).
- b. Key members of both first aid and damage control teams should receive some training involving work with real wounded/injured.
- c. The importance of storing cold water for treatment of burns at Action Stations should be re-emphasised in ships' NBCD training.
- d. Training in intravenous saline infusion should be given to key members of first aid parties.
- e. The correct position for "Taking Cover" should be taught and enforced.

CLOTHING/BURNS

158. Equipment

- a. At Action Stations in addition to the basic rig of No 8's, underwear, wool socks. DMS Boots and Antiflash Gear, a HWJ should be added as an absolute minimum. As many layers as possible should be worn.
- b. Each officer and rating should be issued with "Battle Clothing". This would consist of an overall with attached hood and instep straps, bulky enough to cover other clothing, made of a modern man-made fire retardant cloth such as 'Nomex'. Two suits of this clothing would be issued but only used in real war and emergencies such as fires in ships etc. Exercises would be done using standard cotton overalls.
- c. All headsets should be entirely without flammable materials in exposed parts.

