



Annex B to
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dated 25 March 200

MINISTRY OF DEFENCE

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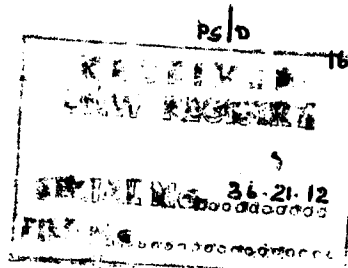
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From: A R M JAFFRAY CB., Deputy Under-Secretary of State (Navy)

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.

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.

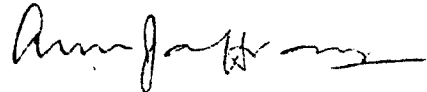
f. The provision of onboard training equipment for both existing and future ships is being actively pursued by the Naval Systems Training Group.

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



Copy to: The Flag Officer, First Flotilla

Internal: Sec/1SL
Sec/2SL
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PS/CER
AUS(NS)
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DG Ships
DGST(N)
DNW*

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.
3. The witnesses were, to a man, open, frank and helpful in spite of the obvious strain of reliving painful memories. This applies particularly to ~~XXXXXXXXXXXXXXXXXXXX~~ who was in attendance for most of the Inquiry. We were all struck by the difference between those who suffered shock and injury and those who did not, particularly the way in which this affected their ability to recall details of events on the day of the loss (and before).
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.

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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

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XXXXXXXXXXXXXXXXXXXXXXXXX
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XXXXXXXXXXXXXXXXXXXX
Captain Royal Navy

N/A

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Surgeon Commander Royal Navy

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Distribution:

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

a Wessex V was making a final search. The last survivors reached BROADSWORD at about 2000, some 1½ 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 WARBUILD 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.

23. xxxxxxxxxxxxxxxxxxxx Royal Navy took command of COVENTRY on 30 June 1981. The ship remained in harbour for the combined leave and AMP period (6 weeks) and sailed for various trials and a shakedown before finally leaving for a planned 3½ months away from the bast port. Exercise OCEAN VENTURE which followed provided many good training opportunities thereby preparing the ship for joining STANAVFORLANT on 1 September 1981 and launching immediately into exercise MAGIC SWORD NORTH. This exercise gave COVENTRY some valuable experience in offshore barrier operations near the coast of Norway when enemy patrol boats attacked carrier forces. Weather conditions encountered were similar to those the ship was to meet some 6 months later in the South Atlantic.

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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 manoeuvring 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 despatch 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 OPERATIONSEARLY 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

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 manoeuvring were conducted as on the previous day. COVENTRY was guide and BROADSWORD manoeuvred to remain xxxxxxxxxxxxxxxxxxxx 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. 326

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 xxxxxxxxxxxxxxxxxxxx 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. 338 344

53. Before discussing the day's events it is worth examining further the choice of patrol line for 25 May. As already described, the risk of compromise of the ship's position after the previous day's successful operations had influenced the move some 30 miles to the west. Although the positioning on 24th had allowed the use of UHF frequencies for air picture reporting it had to be acknowledged that the greater range from ships in the Sound would necessitate a switch to HF for the LAAWC net and acceptance of the known operating difficulties this would create. There was also the question of CAP control to be considered and on 25th COVENTRY found herself controlling Sea Harriers on stations that were 'down-threat' xxxxxxxxxxxxxxxxxxxx. Although not necessarily a serious disadvantage this was nonetheless a factor to be taken into account. 526

54. Similarly, the distance of the patrol line off land was the subject of careful considerations and had to be a compromise between the needs of Sea Dart, Sea Wolf, CAP control, communications and, above all, an assessment of the enemy's most likely course of action. The indication was that the Argentinian air effort directed against San Carlos was generally routed along the north or south coastlines of West Falkland, but remaining over land. The resultant choice of a missile trap some 10 miles north of Pebble Island was therefore deemed best in the circumstances and the most likely to provide engagement opportunities for both GWS 25 and GWS 30. Indeed from COVENTRY's standpoint this new patrol line better met Sea Dart requirements than had the previous day's positioning xxxxxxxxxxxxxxxxxxxx. With the exception of attacks from xxxxxxxxxxxxxxxxxxxx 526

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 (heel 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 watertight 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.

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 ended up 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 carried out. 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.

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.

Q6 XXX

A XXX
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Q7 Could COVENTRY have been saved?

A No. The massive damage to Watertight Integrity made excessive loll 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 RECOMMENDATIONSINTRODUCTION

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

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

CONCLUSIONSGENERAL CONSIDERATIONS108. Preparations for War

a. 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.
- (2) Sea Dart remained unproven.
- (3) The ship had little experience of inshore AAW.

b. 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.

OPERATIONS109. Early Operations

a. COVENTRY gained useful CAP control and Area Air coordination experience with the Carrier Group xxxxxxxxxxxxxx 1-5 May.

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SNAP
Para 33-35

b. Early NGS operations were not successful owing to gun defects. These were rectified and the gun gave no further problems.

Para 38

DAMAGE AND DAMAGE CONTROL117. Preparations

- a. Damage Control Parties were correctly closed up before the attacks began. Annex F
Paras 1-5
- b. 'Take Cover' drill was not exercised prior to being used operationally. Annex F
Paras 4-5

118. Damage

- a. The precise weapon load of each attacking aircraft is not known. Para 70
Annex F,
Appendix 1
- b. COVENTRY was hit by 30mm cannon fire and 3 bombs (probably 1000lb). Two exploded. Para 71
Annex F,
Appendix 1
- c. 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
- d. Two bombs, one of which exploded, flooded 3, 4G and 3, 4H. Paras 75-77
Annex F,
Appendix 1
- e. One bomb flooded the Forward and After Engine Rooms. Paras 77-81
Annex F,
Appendix 1
- f. The Computer Room (3H), Operations Room (2G), Senior Ratings Dining Hall (2K), HQ1/MCR 2L were devastated by blast. Paras 75,79 & ;
Annex F,
Appendix 1
- g. 2 deck passageway distributed water throughout the ship as she lolled to port and deepened. Capsize was then inevitable. Paras 80-82, 8
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

- a. No single out-station knew the total extent of damage. Annex F
Paras 12-16
- b. All DC communications had failed. Annex F
Paras 12-16
- c. The Forward Section Base did not know that HQ1 had been evacuated. Annex F
Paras 12-16

121. The After DC Base

a. The huge search and rescue potential of the After DC Base was never used. XXXXX to establish contact forward
XX
XXXXXXXXXXXXXXXXXXXX

Annex F 538
Paras 18-21 544

b. The normal reaction and logic of the XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX were numbed by the shock of actually being
hit and seeing casualties.

Annex F 538
Paras 18-21 544
540

c. There was acute awareness of the heel and fear of being
trapped between decks.

Annex F
Paras 18-21

122. The Forward DC Base. The Forward DC Party was distracted
from its primary task when faced with a flood of injured and
shocked men evacuating the Operations Room. XXXXXXXXXXXXXXXXXXXX
XX

Annex F
Paras 23-28
538
544
540

123. Stability After Damage

a. COVENTRY heeled some 16° to Port when flooded to 2 deck
in several sections of the ship.

Annex F
Para 34

b. The angle of heel developed to 45° + as flooding
gradually caused deck edge immersion.

Annex F
Para 35

c. Final resistance to capsize was lost as heel approached
45°.

Annex F
Para 35

124. Watertight Integrity of 2 Deck Passageway

a. Although 2 deck is subdivided from G to N Section
only 3 bulkheads are fully watertight.

Annex F
Para 36

b. Some bulkheads are fitted with watertight doors but
are not watertight overall because of unsealed pipe
penetrations.

Annex F
Para 36

c. These bulkheads can be made watertight by A+A action
but other modifications to ventilation arrangements then
become necessary.

Annex F
Para 36

125. Stability Documentation

The information in the NBCD Class Book is inadequate.

Annex F
Para 37

ESCAPE/SURVIVAL/RESCUE

126. Organisation and Training. With the exception of 2 points
(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.

Annex G
Paras 2-4

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 men's 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 bruises whilst leaving the ship there was (with the exception of the XX no serious injury. Annex G 338 544

130. Personal Survival. Despite the cold weather conditions personal survival did not pose many serious problems. Annex G Para 12

131. Time in the Water

a. All survivors spent some time in the water (minimum 15 seconds, maximum 90 minutes, average 15 minutes). Annex G Para 13

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

132. Survival Suits

a. Only 35% of the survivors managed to dress correctly in the survival suit. Many subsequently suffered from the effects of ingress of water. Annex G Para 14

b. About 53% of survivors did not attempt to dress in the survival suit due to a variety of reasons (loss of the suit below decks; deliberate decision in belief that capsize was imminent; various 'finger troubles'). Annex G Para 15

133. Lifejackets. About 90% of survivors wore their lifejackets and few problems were encountered. Annex G Para 17

134. Liferrafts

- 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. Liferrafts 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

135. Rescue. Rescue was swiftly and effectively carried out by BROADSWORD's boats and 10 helicopters from RFA FORT AUSTIN.

FIRST AID AND CASUALTIES136. 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 BURNS137. 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.

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 CONTROL151. 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. Documentation. 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/RESCUE155. 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.