


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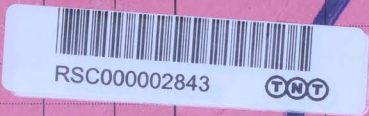
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SUBJECT

OP CORPORATE  
 B OF J  
 LOSS OF RFA'S SIR TRISTAN  
 + SIR GALAHAD  
 (REMISSION)

Referred to	Date	Min/Encl	Referred to	Date	Min/Encl	Referred to	Date	Min/Encl	Referred to	Date	Min/Encl
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# OP CORPORATE

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26 Jan 83
- " 8 copy 29 of 31 DUS(N) 14(2/35(51) 8/2/1983  
3 sheets
- " 7 Draft of enc X 5 sheets
- 3 CINCFLC 520/42.2 26 Oct 82 1 sheet
- 3/1 Annex A " 2 sheets
- 3/2 " B " 2 sheets
- 3/3 Narrative of Bq 2 for submission 4 sheets
- 1/7 Annex E to Bq I report copy of 20  
E1 " " " "  
E2 " " " "

9

Minutes and Brief Details of Enclosures

M 1

Clas.

Encl. No.

- DUS(N)
- VCNS
- CFS
- C of N
- 2 SL
- 1 SL
- Minister(AF)

This submission invites the Admiralty Board to take note of CINCFLT's report and the Board of Inquiry Proceedings on the loss of RFAs SIR TRISTRAM and Sir GALAHAD.

2. The General Staff have been consulted in the preparation of this submission.
3. Because of likely Parliamentary and public interest in the Fitzroy incident, proposals have been put to DS 11 on how the matter might be handled.

Narrative

4. The operation and the Proceedings are complex, with many factors affecting the outcome. To assist the Admiralty Board a full narrative has been placed at Enclosure 2 (Flag 1). It is recommended that this be read before proceeding further.

Board of Inquiry Report

5. The Board of Inquiry ( Enclosure 1; main report Flag 8; detailed conclusions and recommendations Flag 9) recognised the overriding need for speed rather than thoroughness at that stage of the operations. They considered that the decision to send SIR GALAHAD to Fitzroy was correct, despite the recognised risks. Many factors contributed to the damage suffered, none critical in themselves: notably the limited unloading facilities at Fitzroy for 2 LSLs; state of tide on arrival; change of weather; uncertainties over command responsibilities at Fitzroy; poor communications between Fitzroy and the

/ San Carlos.

San Carlos area; and failure in handling a signal by COMAW's SOO, who was in a state of exhaustion. Abandoning SIR GALAHAD was right, but not the abandoning of SIR TRISTRAM. The advisability of having Chinese crews in RFAs is questioned. The Report invited CINCFLEET to consider action in respect of the Captain of SIR TRISTRAM, two of his officers (for failing to make accurate DC reports), and COMAW's SOO.

#### CINCFLEET's Views

6. CINCFLEET (Enclosure 3, Flag 10) decided not to take disciplinary or formal administrative measures in respect of the officers criticised: the SOO's main error was one of a signal address, and he was inexperienced in AW and under stress and fatigue; the SIR TRISTRAM officers were under mental shock after the attack, but they will be interviewed. CINCFLEET's comments include questioning the advisability of manning LSL's with Chinese crews. His comments on joint warfare and amphibious warfare matters, in consultation with his Land Deputy, point out that what had begun as a set-piece operation became a rolling programme presenting major difficulties in command and control. Critical shortcomings were lack of precise identification of the beach for the Welsh Guards and not designating an OIC for the landing. 5 Bde's lack of amphibious warfare knowledge and experience led them to underestimate the degree of control needed and the urgency of disembarking. The operation highlights the lack of JW and AW training.

#### MOD Staff Comments

7. The Naval Staff advise that:

- a. They have examined amphibious doctrine aspects of the Board of Inquiry Report and agree with the observations made in Annex B of CINCFLEET's report.
- b. The chief weakness revealed by the Inquiry was the inexperience in amphibious operations of those who had to take decisions. This inexperience was, in turn, compounded by unfamiliarity with joint planning and tasking procedures and knowledge of the other Services. In this respect the skills born of working together over considerable periods, and the confidence to improvise and apply common-sense, are more important than strict adherence to Allied Tactical Publications. In the absence of such familiarity, tight adherence to the rules must be applied, and

/they .....

Minutes and Brief Details of Enclosures

M 1 - contd.

Clas.

Encl.  
No.

they do not always fit the circumstances. It reflected the diminishing priority which amphibious matters in particular, and joint warfare in general, have been given in recent years. One result of the Falklands experience has been to focus attention on the need for such training and the requirement to improve our expertise in joint warfare. The Davies report and the restoration of joint warfare training are in earnest of this.

- c. The speed at which events for reinforcing the southern flank progressed (necessarily, in view of the urgency of the developing situation ashore) seems to have led to random planning, some of it in isolation from crucial elements of the force. This was exacerbated by last minute changes of plan caused by the weather, and by failure to communicate decisions to those who needed to know. (Proceedings Annex E4).
- d. The failure to warn those at Fitzroy that SIR GALAHAD was coming after all was a more important element in the delay in unloading than any lack of amphibious expertise. It led to the ABU not being ready, and a resulting lack of ship-to-shore amphibious assets, (indeed, LCU F 4 was despatched to 5 Bde's existing BMA on the morning that SIR GALAHAD arrived). There is conflicting evidence about whether HQ 5 Inf Bde at Darwin knew that the LSL was coming on 8 June. Annex E10, para 14a maintains that the Bde HQ did know; however, E2 makes it clear that the error in the distribution of the signal from CTG 317.0 left the HQ in ignorance. This is considered the accepted perception. (Proceedings Annex E10).

/e. ....

- e. Summary. A similar operation had previously been undertaken successfully at Teal Inlet without being attacked. The operation at Fitzroy/Bluff Cove was a risk which went wrong. Delays occurred in this operation, partly due to misfortune, but also due to inexperience of joint operations exemplified by inadequate Command and Control arrangements, and in the slow, inefficient loading at San Carlos and lack of urgency at Fitzroy. In view of this lack of experience in joint warfare, those concerned coped well, and it is miraculous that worse did not occur.

8. The General Staff advise that the appropriate lessons will be included in the Army Department's in-house report which should be ready by mid-December. They have no specific comments to make for this submission.

9. DGST(N) advises that:

- a. CINCFLEET's comments in Annexes A and B (particularly para 1 of Annex B) as they concern the role, manning and training of LSLs are fully endorsed. This was a matter of concern before and during CORPORATE. LSLs have been almost totally dedicated to providing the secure line of communication to British Forces in Germany, a task which they have long performed economically and effectively. The ships were originally commercially-operated and, unlike many RFAs, have retained many of their merchant ship characteristics. Confirmation that this had become their only role came when LSLs were deleted from the Naval programme in the Defence Review: it was at that time agreed that the ships would operate totally under MOD(A) opcon (but with costs accruing to NTH). Their precise task in a wartime situation therefore has always been vague, and the relative priority in the prolonged period of tension even more unclear. Even when CORPORATE began, it was not clear whether the ships were to be employed in a 'first wave' action or not, and this resulted in loading problems.

/b. ....

Minutes and Brief Details of Enclosures M 1 - contd.

Clas.

Encl.  
No.

- b. Against this background, it is scarcely surprising that the Chinese crew morale failed, or that the NBCD and medical organisation of the ship were in some ways deficient. Mainly untrained and inexperienced in this specialised employment, the gallantry of the officers in unprecedented circumstances was exceptional. CINCFLEET's Annex A, para 5.b, about responsibility of officers is fully agreed: in particular the action of the Captain of SIR TRISTRAM in launching his lifeboats in an effort to save lives in SIR GALAHAD is entirely consistent with merchant navy training that safety of life at sea is paramount.
- c. For the future, it is essential to determine how LSLs should be protected, particularly against air attack in a situation such as Fitzroy. They are always going to be a very vulnerable ships and their self protection when part of a Task Force needs to be defined.
- d. In summary, the report and CINCFLEET's comments provide a balanced and objective resume of the incident. Many detailed problems which need to be addressed are summarised at Enclosure 4 opposite. The principal problems are the need:
- (1) to define the LSLs true role in peace and war, including the Army command structure when troops are embarked;
  - (2) to make such material changes as are possible to meet this role;
  - (3) to provide adequate tactical training for RFA staff, particularly in the amphibious role;
  - (4) to man LSLs with UK crews as soon as possible (a Board submission is being prepared).

10. DG Ships advises that:

- a. The recommendations of the report are being studied in connection with the design of replacement LSLs. Although the new design is to be based upon the present LSLs as to cardinal dimensions etc, it is the intention to avoid using aluminium in the ships structure (CINCFLEET Annex A para 6). Many changes in detail will also be required to take account of changed staff requirements, international regulations for Merchant ships and equipment obsolescence. Marinite and other asbestos filled partition bulkheads will not be used (CINCFLEET Annex A para 6).
- b. Alternations and Additions to the remaining LSLs if required would largely fall into the 'non-military' category and it would be the responsibility of DGST(N) to sponsor. DG Ships will advise if required but would otherwise only be associated where ship stability and strenght were affected.
- c. Should Ro Ro ships be taken up by purchase or charter as interim replacements, the degree to which the lessons learned should be incorporated by modiciation will need to be determined.

11. DGNMT advises that:

- a. The comments by CINCLFEET on personnel considerations are agreed. Most, particularly the advisability of manning RFA with Chinese crews, are for DGST(N) to initiate. Medical matters are for MDG(N) to initiate.
- b. The lack of expertise in the RN on Joint Service and Amphibious Warfare matters is the subject of a current study; it is intended that all Officers appointed to AW posts, and some Senior Ratings, will complete the appropriate course.

Minutes and Brief Details of Enclosures M 1 - contd.

Clas. Encl. No.

12. MDG(N) advises that:

- a. The comments by CINCFLLEET on medical organisation and on stretchers are agreed (CINCFLLEET Annex A paras 8 & 9).
- b. The medical and first aid organisation of RFAs will be examined by MDG(N).

13. Summary of RN and Army awards are placed at Enclosures 5 and 6.

Recommendation

14. The Admiralty Board is invited to take note of CINCFLLEET's report and the Board of Inquiry proceedings.

15. The question of a final submission will be considered after the Defence Debate.

report

16. Advance copies of this minute, the Narrative and CINCFLLEET's/ go to Sec.VCNS, Sec.CFS, Sec.C of N, Sec.2 SL, Sec. 1 SL and PS/Minister(AF). Copies also go to PS/SofS, PS/Minister(DP), PS/US of S(DP), PS/US of S(AF), PS/CRR, MA/VCGS, AUS(NS), AUS(GS), AUS(NP), AUS(FS), AUS(Mat N), ACDS (Commitments), CGRM, DG Ships, DGW(N), DGFSP&S, MDG(N), DGNMT, DGNPS, DGST(N), Head of AG Sec, Head of DS 11 and Head of DS15(L).

17. In view of security and sensitivity, this docket and all copies of the minute have access sheets: access must be limited to strict need-to-know, and papers must be passed under Exclusive cover.

9 December 1982 T.M.P. STEVENS  
Head of NIC NA 218 7584MB.

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Class.

Encl.

M.2

VCNS  
CFS  
CofN  
2SL  
1SL  
Min(AF)

1. Noted.

2. As I read the evidence, this tragic incident was not the result of any crass blunder, but rather of the ordinary chances of war in what was a very fast moving situation.

3. The cardinal finding, perhaps, is that in all the circumstances the decision to order the advance by sea to Bluff Cove was justified in spite of the acknowledged risks. There was a clear need to move 5 Bde as far forward and as quickly as possible. That decision having been taken, it is difficult to see how disaster could have been altogether avoided, as events unfolded, even without the contributory factors to which the report draws attention, such as:

- a. the failure of communications which led to lack of preparedness for SIR GALAHAD's arrival at Fitzroy and consequently delayed unloading;
- b. the lack of clear military command authority on the spot which added to the confusion;
- c. the general lack of amphibious and joint warfare training and experience (which is scarcely surprising in view of the low priority which this has been accorded in our defence planning for many years), which seems to have led to a failure fully to appreciate the problems and risks involved in the operation.

The only thing that might have been effective was air cover; but the CAP was diverted (correctly in the view of the Inquiry) to deal with another raid before the one on Fitzroy was sighted.

4. There is bound to be continuing public speculation about this incident fuelled by media "events" such as the forthcoming BBC "World in Action" programme; by books and stories; and perhaps the debate on the Falklands White Paper. There may be a disposition to hunt for scape-goats, political or military. The Department will, I believe, need to take a robust line; and I can find nothing in either the report or proceedings which need inhibit us from doing so.

*aj.*  
13 December 1982

SECRET

Minute Sheet No.

Reference D/NLC/1/11/10

Minutes and Brief Details of Enclosures

Clas.

Encl. No.

M3

CFS  
CofN  
2SL  
1SL  
Min(AF)

Noted.

2. This full report after a searching inquiry has produced as clear a picture of the circumstances leading up to this tragic incident as would seem possible. I note that follow-up action on the recommendations is being taken by CINCFLEET and other authorities concerned.

3. The underlying factor leading to this incident was the low priority which had necessarily been given to amphibious and joint warfare consequent upon the adoption of a defence policy which specifically excluded the requirement to cater for this type of operation. This has resulted in a lack of resources to cover training and the development of expertise among most of those concerned. On the day this resulted in staff and communications failures in a fast moving situation. These were not decisive in themselves but they culminated in a lack of clear intention and decisive action which were sufficient to hazard the operation. Given adequate air defence assets in the form of either AD Frigates or Carrier borne aircraft CTG 317.0 would not have been placed in the unenviable position of deliberately placing these LSLs at risk in this calculated way in order to provide vital support to the land battle.

4. The theory that reports of unexploded bombs in other ships had enabled the Argentines to improve their fusing arrangements before this attack is not supported by the findings of this inquiry.

*Ans*

22 December 1982

VCNS

D/MLC/1/11/10/1  
RFA SIR GALAHAD & SIR TRISTRAM.

Encl. No.  
Clas.

M4

EM

C of N  
2SL  
1SL  
Min(AF)

Copy to:  
VCNS  
DUS(N)

1. Noted.

2. I have nothing to add to the points made by DGST(N) which I endorse.

6 January 1983

CFS

2SL  
1SL

Minister(AF)

Copy to: CFS  
VCNS  
DUS(N)

1. Noted and agree DG Ships advice in para 10 of M1.

10 January 1983

LSB  
CONTROLLER OF THE NAVY

M6

1SL  
Minister(AF)

1. I agree with VCNS that the underlying factor leading to this incident was as stated in para 3 of his M3.

2. I endorse the comments made by DGNMT on naval personnel matters in para 11 of M1, and note the comments made by MDG(N) on medical matters in para 12 of M1.

11 Jan 83

SS  
CNP & 2SL

M7

Minister(AF)

Noted. In particular I fully endorse DUS(N)'s remarks in para 4 of M2.



17 January 1983

*Noted. It seems clear that more attention should be given to training in amphibious warfare and joint warfare.*

*MRB  
24/1.*

I am commended 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.

You will have seen the Ministerial statement of 22 November 1982 at the close of the Parliamentary debate on the Falklands campaign (Hansard Vol 96, Col 918; attached in the enclosed copy). That statement was made before your report and the proceedings had been seen by all Board members, and therefore contained interim conclusions only. However, these conclusions have now been confirmed by the Admiralty Board.

I also enclose a copy of a fuller account which has been based on your report and the proceedings, supplied in consultation with your staff. It is not at present intended to publish this account widely; if any, however, be drawn upon in the event of further Parliamentary, public and media interest.

The Admiralty Board made the following observations:

The principal finding was that in all the circumstances the decision to order the advance by sea to Staff Cove was justified in spite of the acknowledged risks. That decision would have been taken, it was difficult to see how disaster could have been altogether avoided, as events unfolded, even without the contributory factors to which the report draws attention.



E8

MINISTRY OF DEFENCE

Main Building, Whitehall, London SW1A 2HB

Telephone (Direct Dialling) 01-218 7165

(Switchboard) 01-218 9000

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

Ref: 14/2/35(51)

8 February 1983

Commander-in-Chief Fleet  
Northwood  
Middlesex HA6 3HP

Sir

BOARD OF INQUIRY - REPORT INTO THE LOSS OF RFAs SIR TRISTRAM  
AND SIR GALAHAD

Reference: 520/242.L dated 26 October 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. You will have seen the Ministerial statement on 21 December 1982 at the close of the Parliamentary debate on the Falklands campaign (Hansard Vol 34, Col 918; sidelined in the enclosed copy). That statement was made before your report and the proceedings had been seen by all Board members, and therefore contained interim conclusions only. However, these conclusions have now been confirmed by the Admiralty Board.
3. I also enclose a copy of a fuller account which has been based on your report and the proceedings, amplified in consultation with your staff. It is not at present intended to publish this more widely; it may, however, be drawn upon in the event of further Parliamentary, public and media interest.
4. The Admiralty Board made the following observations:
  - a. The cardinal finding was that in all the circumstances the decision to order the advance by sea to Bluff Cove was justified in spite of the acknowledged risks. That decision having been taken, it was difficult to see how disaster could have been altogether avoided, as events unfolded, even without the contributory factors to which the report draws attention.

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Nevertheless, the Board considered that although these factors were not decisive in themselves, they culminated in a lack of clear intention and decisive action which, allied to the lack of clear command authority on the spot, were sufficient to hazard the operation.

b. The principal underlying factor was the low priority which has necessarily been given to amphibious and joint warfare training over many years as a consequence of the adoption of a defence policy which has specifically excluded the requirement to prepare for this type of operation. The Board acknowledged that this has resulted in a lack of resources for training and the development of expertise, which in the event led to a failure fully to appreciate the problems and risks of the operation at Bluff Cove, and to staff and communications failures in a fast moving situation. The measures needed to re-provide this expertise are being studied; it is, however, intended that all officers appointed in future to AW posts, and some senior ratings, will complete the appropriate course.

c. The failure of communications which led to lack of preparedness for SIR GALAHAD's arrival and consequently delayed unloading, was particularly significant.

d. Only air cover might have been effective in averting disaster; the diversion of the CAP to deal with another raid before the one on Fitzroy was sighted was nevertheless correct. Given adequate air defence assets in the form of either AD frigates or carrier borne aircraft, Commodore Amphibious Warfare would not have been compelled deliberately to place these LSLs at risk in order to provide vital support to the land battle.

e. The theory that reports of unexploded bombs in other ships had enabled the Argentines to improve their fusing arrangements before this attack is not supported by the findings of this inquiry.

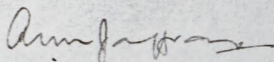
f. Your comments about the role, manning and training of LSLs are endorsed. LSLs have been almost wholly dedicated to providing a secure line of communication to British Forces in Germany, in which role they have performed economically and well. Their precise tasks in war, and the relative priority of these in a period of prolonged tension, have not been clearly established. As they were untrained and inexperienced in this specialised employment, it is hardly surprising that there were failures, including the morale of the Chinese crew; in the circumstances the gallantry of the officers was noteworthy. The need to define the LSLs' true role both in peace and war, and to make material changes in order to meet this role, is acknowledged. Approval has now been given to replace the Chinese crews of LSLs with UK seamen. The need to provide adequate tactical training for RFA staff, particularly in the amphibious role, is agreed.

g. The recommendations of the report are being taken into account in the design of replacement LSLs. Although the cardinal dimensions of the design are to be based upon that of the present LSLs, the use of aluminium in the ships' structure will be avoided, as will be that of marinite and other asbestos filled partition bulkheads. Other detailed design changes will take account of revised staff requirements, international regulations for Merchant ships and equipment obsolescence. Should Ro-Ro ships be taken up by purchase or charter as interim replacements, the extent to which the lessons learned should be incorporated by modification will need to be determined.

h. Your comments on the medical organisation and stretchers are agreed: the medical and first aid organisation of RFAS is being examined.

5. The Army Board have seen and noted your report and the proceedings.
6. Your report and the proceedings have been taken into account in the "Lessons Learned" studies in the Navy Department. The detailed lessons in your report and the proceedings are being followed up by the staffs responsible. The Admiralty Board may wish to make further observations when all the lessons learned from Operation CORPORATE and in 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  
Director of Plans UKCICC  
The Commodore Amphibious Warfare

Internal: Sec/1SL	ACDS(Commitments)
Sec/2SL	CGRM
Sec/CofN	DG Ships
Sec/CFS	MDG(N)
Sec/VCNS	DGFSP&S
PS/CERN	DGNMT
MA/CGS	DGNPS
AUS(NS)	DGST(N)
AUS(GS)	DNW
AUS(NP)	Head of AG Secretariat
AUS(FS)	Head of DS11
AUS(Mat N)	Head of DS15(L)

SECRET  
-5-

... and the registration of ships abroad, there has been a decline in the merchant fleet over the years. It has been estimated that if the Falklands crisis had occurred at the end of the decade, and if the decline had continued at the present rate, there would be few British merchant ships left to send to the South Atlantic.

It is all very well to talk glibly about reinforcing decks and doing other work on cargo ships, but that cannot be done unless the ships are British. It is time that the Government started to put money into the British merchant fleet to reverse that decline. In addition, they should also consider the powers in the Exchange Control Act and in the income tax Acts to prevent the deregistering of United Kingdom flag ships. As the House recognises, the White Paper inevitably means that more money will be spent on defence in the next few years. In 1982-83, the total will probably be about £16 billion, or about 5.7 per cent. of our gross domestic product, which, incidentally, is growing very slowly. I believe, that that is the highest percentage of gross domestic product since 1963, before the withdrawal from east of Suez. The percentage will probably increase during the next few years, especially as a result of the 3 per cent. NATO commitment, the new frigates and the increasing cost of Trident.

Indeed, the senior analyst at Greenwell, the stockbrokers, was quoted in *The Sunday Times* recently as saying:

"It is staggering how fast the figures are growing".

There will have to be another review of expenditure in the next few years. When the Secretary of State produced his famous White Paper of 25 June 1981 he said:

"No enhancement of our conventional forces could possibly prove of equal deterrent value."—(*Official Report*, 25 June 1981; Vol. 7, c. 389.)

That is a wrong, and very simplistic, way of looking at the issue.

The right hon. Gentleman still believes that we can have a low level of conventional forces and that we can rely on nuclear weapons for defence and deterrence. However, all the thinking in Britain and in NATO is moving away from that point of view and towards saying that we must have strong conventional forces to avoid the early use of nuclear weapons. We shall cancel Trident and use some of the money saved to provide adequate conventional forces.

When introducing his first White Paper to the House the Secretary of State said that our defence policy was unbalanced and overextended. He has now apparently introduced his last White Paper and his defence policy is even more unbalanced and overextended. His successor will have to look at the whole issue again. I can only hope that the right hon. Gentleman will do a bit better with his daffodils.

9.38 pm

The Under-Secretary of State for Defence Procurement (Mr. Geoffrey Pattie): One hon. Member who took part in the debate expressed surprise that nearly all of the 46 pages in the White Paper produced by the Ministry of Defence and presented by my hon. Friend the Secretary of State for Defence should be devoted to military matters. Of course, I realise that one could talk about other issues, and, indeed, many of today's participants have done so. However, we are not debating the findings of the Franks committee or public

expenditure. Therefore, I shall concentrate on responding to the points that have been raised before turning, if time permits, to the performance of our equipment.

The right hon. Member for Cardiff, South-East (Mr. Callaghan) mentioned the tragic events at Fitzroy. That is an important matter. The right hon. Member for Llanelli (Mr. Davies) also referred to it. The reports on that operation have been studied carefully in the Ministry of Defence.

We have concluded that the land force commander's concept for committing 5 Brigade to the south by sea was fully justified in view of the need for an early and concerted operation with 3 Commando Brigade against Port Stanley. The tragedy came about not through any major error but through the ordinary chances of war, involving a combination of circumstances such as difficult and overloaded communications, disruption of plans by weather, and resources being pushed to their limit to achieve an early end to hostilities.

I noted the right hon. Gentleman's words. He said how lucky we were that we did not have to fight much longer. I am sure that he will appreciate that it was substantially in the interests of speed that that manoeuvre was put into action. The risks taken were no greater than some others in the campaign. Precisely the same manoeuvre was carried out successfully at Teal inlet earlier in the campaign, although on that occasion there were no casualties.

Although it may be possible to criticise in retrospect some of the judgments that were made by individuals, they are of the type that will always be made in rapidly developing operations; and no blame is attached to anyone. The decision to press on with speed rather than a slow and methodical build-up was right. The loss of life at Fitzroy was tragic, but the overall loss of life would have been greater—casualties from exposure would certainly have been greater—if our forces had moved too cautiously.

The right hon. Member for Cardiff, South-East asked whether the Commander-in-Chief at Northwood knew that the "Sir Galahad" had men on board for disembarkation. He will realise that since he made his speech we have endeavoured to check on that point. I cannot confirm that Northwood knew the precise plans on that day for the "Sir Galahad". Many planning signals were copied to the Commander-in-Chief, who could intervene when he chose. However, decisions were being taken at great speed and the initiative lay, as the right hon. Gentleman will appreciate, with the commanders on the spot. There seems to be no reason why the Commander-in-Chief should have intervened in this case. Logistic landing ships such as the "Sir Galahad" have a troop carrying capacity comparable to that of HMS "Fearless".

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7. The operation against Port Stanley had to go on; 5 Bde was built up quickly, and within a few days was attacking Port Stanley.

8. Mr Geoffrey Pattie, <sup>then</sup> /US of S(DP), said in the House of Commons on 21 December 1982:

"The Land Force Commander's concept for committing 5 Brigade to the south by sea was fully justified in view of the need for an early and concerted operation with 3 Commando Brigade against Port Stanley. The tragedy came about not through any major error but the ordinary chances of war, involving a combination of circumstances such as difficult and overloaded communications, disruption of plans by the weather, and resources pushed to their limits to achieve an early end to

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E 7

SECRET

DRAFT

MANAGEMENT IN CONFIDENCE

Commander in Chief Fleet  
Northwood  
Middlesex  
HA6 3HP

Ref: D/NIC/1/11/10/1

February 1983

Sir,

Board of Inquiry - Report into the loss of RFA's SIR TRISTRAM  
and SIR GALAHAD.

Reference: 520/242.L. dated 26 October 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. You will have seen the Ministerial statement on 21 December 1982 at the close of the Falklands Debate (Hansard Vol 34, Col 918; *sidelined in the Parliamentary debate on campaign*). That statement was *the enclosed copy attached* agreed on behalf of the Admiralty Board by VCNS and myself, reflecting the views of VCGS, *made* before your report and the proceedings had been seen by all Board members, and *these conclusions have now been confirmed by the Admiralty Board and Ministers.* They therefore constitute the Department's position on the incident.

3. *I also enclose a copy of* A fuller account *to be drawn upon* has been prepared ~~for use~~ in some Ministerial correspondence where a fuller explanation is needed, and for other *which has been* limited use; a copy of this is attached. It is based on your report and the proceedings, amplified *in* by consultations with your staffs.

It is not at present intended to publish this more widely. *It may however be drawn upon in the event of further Parliamentary, public and media interest seems to have subsided.*

Should there be further speculation or any hunt for scapegoats, the Department intends to continue its robust line.

4. The Admiralty Board made the following observations:-

- a. The cardinal *finding was* ~~feeling~~ is that in all the circumstances the decision to order the advance by sea to Bluff Cove was justified in spite of the acknowledged risks. That

M12  
(sub-para picked up below)

SECRET  
MANAGEMENT IN CONFIDENCE

/decision .....

decision having been taken, it <sup>was</sup> difficult to see how disaster could have been altogether avoided, as events unfolded, even without the contributory factors to which the report draws attention. <sup>Nevertheless the board considers it has attempted</sup> factors which <sup>the</sup> were not decisive in themselves, <sup>but</sup> which <sup>they</sup> culminated in a lack of clear intention and decisive action, <sup>as well as</sup> ~~and last of~~ which <sup>was</sup> were sufficient to hazard the operation.

M3

M2

clear command authority on the spot.

b. The major underlying factor was the low priority which had necessarily been given ~~for many years~~ to amphibious and joint warfare training, consequent upon the adoption of a defence policy which <sup>for many years has</sup> specifically excluded the requirement to <sup>prepare</sup> cater for this type of operation. <sup>The board acknowledges</sup> This had resulted in <sup>the</sup> lack of resources to cover training and development of expertise. <sup>which</sup> In the event <sup>of the operation at Suez</sup> this led to a failure fully to appreciate the problems and risks, and to staff and communications failures in a fast-moving situation. The measures needed to <sup>re-</sup> provide such expertise are being studied; <sup>the</sup> ~~inter alia~~ it is <sup>in future</sup> intended that all officers appointed to AW posts, and some senior ratings, will complete the appropriate course.

M5 2, 3, 6

M1, para 11

c. <sup>failure of</sup> The communications <sup>which led</sup> failures were particularly significant, in leading to lack of preparedness for SIR GALAHAD's arrival and consequently delayed unloading, <sup>was particularly significant</sup>

M2

/d. ....

*air cover above*  
 d. The only thing that <sup>in asserting disaster</sup> might have been effective <sup>was</sup> air cover; <sup>the diversion of</sup> but the CAP <sup>was</sup> diverted (correctly in the view of the Inquiry) to deal with another raid before the one on Fitzroy was sighted. Given adequate air defence assets in the form of either AD Frigates or Carrier borne aircraft, <sup>Amphibious Warfare</sup> Commodore ~~X~~ would not have been <sup>was nevertheless correct</sup> put in the unenviable position of deliberately <sup>compelled</sup> placing these LSL's at risk, <sup>to</sup> in this calculated way, in order to provide vital support to the land battle.

M3 2,3

e. The theory that reports of unexploded bombs in other ships had enabled the Argentines to improve their fusing arrangements before this attack is not supported by the findings of this inquiry.

M3

f. Your comments about the role, manning and training of LSLs are endorsed. LSLs have been almost <sup>wholly</sup> totally dedicated to providing a secure line of communication to British Forces in Germany, <sup>in</sup> which role they have performed economically and well. Their precise tasks in <sup>at this</sup> a wartime situation, and relative priority <sup>not been clearly established</sup> in a period of prolonged tension, have been vague. Being untrained and inexperienced in this specialised employment, it is <sup>hardly</sup> scarcely surprising that there were failures, including the morale of the Chinese crew; in the unprecedented circumstances the gallantry of the Officers was notable. There <sup>is</sup> a need to define the LSL's <sup>role</sup> true role in peace and war, and to make such material changes as are necessary to meet this role. <sup>is acknowledged. Approval has</sup> Proposals are <sup>has been given to replace the Chinese crews of</sup> being considered for manning LSLs with UK <sup>seamen</sup> crews. The need to provide adequate tactical training for RFA staff, particularly in the amphibious role, <sup>is</sup> agreed.

M4  
M1 para 9

check

g. The recommendations of the report are being <sup>taken into account</sup> studied in ~~connection with~~ the design of replacement LSL's. <sup>cardinal dimensions of the</sup> Although the design is to be based upon <sup>the use of</sup> the present LSL's <sup>dimensions</sup> as to cardinal decisions etc, it is the intention to <sup>and be avoided</sup> avoid using aluminium in the ships structure. <sup>Other detailed</sup> Many <sup>design</sup> changes (in detail) will also be required to take account of <sup>revised</sup> changed staff requirements, international regulations for Merchant Ships and equipment obsolescence. <sup>as will be most of</sup> Marinite and other asbestos filled partition bulkheads, will not be used. Should Ro Ro ships be taken up by purchase or charter as interim replacements, the <sup>extent</sup> degree to which the lessons learned should be incorporated by modification will need to be determined.

h. Your comments on the medical organisation and stretchers are agreed: the medical and first aid organisation of RFA's is being examined.

~~5. Although Parliamentary, public and media interest in this event seems to have subsided, there may be further public speculation and perhaps a disposition to hunt for scape-goats, political or military. The Department intends to take a robust line, and there is nothing in your report or the Proceedings which need inhibit us from doing so.~~

*Verified.* 56. The Army Board have seen and noted your Report and the Proceedings.

67. Your Report and the Proceedings have been taken into account in the 'Lessons Learnt' studies in the Navy Department. The detailed lessons in your Report and the Proceedings are being followed up by the staffs responsible. The Admiralty Board may wish to make further observations when all the lessons learned from Operation CORPORATE and in the Reports and Boards of Inquiry into other ship losses have been fully examined.

I am etc.

MS  
M1 para 10



and the registration of ships abroad, there has been a steady decline in the merchant fleet over the years. It has been estimated that if the Falklands crisis had occurred at the end of the decade, and if the decline had continued at the present rate, there would be few British merchant ships left to send to the South Atlantic.

It is all very well to talk glibly about reinforcing decks and doing other work on cargo ships, but that cannot be done unless the ships are British. It is time that the Government started to put money into the British merchant fleet to reverse that decline. In addition, they should also consider the powers in the Exchange Control Act and in the income tax Acts to prevent the deregistering of United Kingdom flag ships. As the House recognises, the White Paper inevitably means that more money will be spent on defence in the next few years. In 1982-83, the total will probably be about £16 billion, or about 5.7 per cent. of our gross domestic product, which, incidentally, is growing very slowly. I believe, that that is the highest percentage of gross domestic product since 1963, before the withdrawal from east of Suez. The percentage will probably increase during the next few years, especially as a result of the 3 per cent. NATO commitment, the new frigates and the increasing cost of Trident.

Indeed, the senior analyst at Greenwell, the stockbrokers, was quoted in *The Sunday Times* recently as saying:

"It is staggering how fast the figures are growing".

There will have to be another review of expenditure in the next few years. When the Secretary of State produced his famous White Paper of 25 June 1981 he said:

"No enhancement of our conventional forces could possibly prove of equal deterrent value."—[*Official Report*, 25 June 1981: Vol. 7, c. 389.]

That is a wrong, and very simplistic, way of looking at the issue.

The right hon. Gentleman still believes that we can have a low level of conventional forces and that we can rely on nuclear weapons for defence and deterrence. However, all the thinking in Britain and in NATO is moving away from that point of view and towards saying that we must have strong conventional forces to avoid the early use of nuclear weapons. We shall cancel Trident and use some of the money saved to provide adequate conventional forces.

When introducing his first White Paper to the House the Secretary of State said that our defence policy was unbalanced and overextended. He has now apparently introduced his last White Paper and his defence policy is even more unbalanced and overextended. His successor will have to look at the whole issue again. I can only hope that the right hon. Gentleman will do a bit better with his daffodils.

9.38 pm

**The Under-Secretary of State for Defence Procurement (Mr. Geoffrey Pattie):** One hon. Member who took part in the debate expressed surprise that nearly all of the 46 pages in the White Paper produced by the Ministry of Defence and presented by my hon. Friend the Secretary of State for Defence should be devoted to military matters. Of course, I realise that one could talk about other issues, and, indeed, many of today's participants have done so. However, we are not debating the findings of the Franks committee or public

expenditure. Therefore, I shall concentrate on responding to the points that have been raised before turning, if time permits, to the performance of our equipment.

The right hon. Member for Cardiff, South-East (Mr. Callaghan) mentioned the tragic events at Fitzroy. That is an important matter. The right hon. Member for Llanelli (Mr. Davies) also referred to it. The reports on that operation have been studied carefully in the Ministry of Defence.

We have concluded that the land force commander's concept for committing 5 Brigade to the south by sea was fully justified in view of the need for an early and concerted operation with 3 Commando Brigade against Port Stanley. The tragedy came about not through any major error but through the ordinary chances of war, involving a combination of circumstances such as difficult and overloaded communications, disruption of plans by weather, and resources being pushed to their limit to achieve an early end to hostilities.

I noted the right hon. Gentleman's words. He said how lucky we were that we did not have to fight much longer. I am sure that he will appreciate that it was substantially in the interests of speed that that manoeuvre was put into action. The risks taken were no greater than some others in the campaign. Precisely the same manoeuvre was carried out successfully at Teal inlet earlier in the campaign, although on that occasion there were no casualties.

Although it may be possible to criticise in retrospect some of the judgments that were made by individuals, they are of the type that will always be made in rapidly developing operations; and no blame is attached to anyone. The decision to press on with speed rather than a slow and methodical build-up was right. The loss of life at Fitzroy was tragic, but the overall loss of life would have been greater—casualties from exposure would certainly have been greater—if our forces had moved too cautiously.

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DRAFT TO BE DRAWN ON IN MINISTERIAL CORRESPONDENCE

LOSS OF SIR GALAHAD AND SIR TRISTRAM

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# ARMY AWARDS.

E6

## SUMMARY OF AWARDS

The Military Medal was awarded to the following:

a. 24172118 Sgt Boultyby, Royal Corps of Transport

Sgt Boultyby was coxswain of the MEKEFLOTE present at Fitzroy during the incident, and repeatedly returned to the area of the stricken ships to rescue survivors and with complete disregard for his own safety, dived into the sea to rescue a Chinese crewman. Sgt Boultyby's dedication to his tasks in dangerous conditions was outstanding.

b. 24599314 Gdsm Chapman SM, Welsh Guards

In the fire, confusion, and exploding ammunition as a result of the attack on RFA Sir Galahad, many casualties were incurred. Ignoring the danger and the order to abandon ship, Gdsm Chapman rushed into a burning cabin to rescue a badly burned soldier. He returned time and again to the blazing interior of the ship to rescue his colleagues: his actions undoubtedly saved many lives.

c. 24498706 L/Cpl Loveridge DJ, Welsh Guards

With a complete disregard for his own safety and ignoring the order to abandon ship, LCpl Loveridge returned time and again to the burning and smoke filled areas of RFA Sir Galahad to rescue his colleagues. LCpl Loveridge's presence of mind and courage were of a very high order.

d. 23952578 Sgt Naya PHR, Royal Army Medical Corps

Despite injuries sustained resulting from two explosions while standing in the ammunition filled tank deck of RFA Sir Galahad, Sgt Naya continued to administer medical aid to many casualties including several infusions to amputees. Well aware of the danger he faced in remaining, he continued in his task until evacuated as a casualty himself on the last helicopter.

e. 23929678 WOII Neck BT, Welsh Guards

After the attack on RFA Sir Galahad and disregarding the fire, confusion, exploding ammunition and the order to abandon ship, WOII Neck immediately began to organise the evacuation of soldiers. Many times disregarding his own safety, he returned through smoke filled areas, flames and continuing explosions to assist the hurt and injured.

No other awards were made specifically as a result of the Sir Tristram/Sir Galahad incident.

RN/ASL AwardsSOUTH ATLANTIC HONOURS LIST - RFA'S SIR GALAHAD AND SIR TRISTRAM1. SIR GALAHAD

The awards have been broken down into three categories:

- (a) Those given to officers and ratings primarily for their actions during the loss of the vessel on 8 June 1982 and the rescue of the personnel aboard.
- (b) Those given to officers and ratings partly for their actions during the events of 8 June.
- (c) Those given to officers and ratings for their actions during the removal of a 1,000lb unexploded bomb onboard the ship on 25/26 May 1982.

## Category (a)

DSO

Captain P J G ROBERTS RFA - Master RFA SIR GALAHAD

During the period 21 May - 8 June, when the vessel came under repeated air attacks, he took personal charge of the fighting and safety of her crew. He organised and controlled two abandonments, prior to the bombing of 8 June, of the vessel with considerable skill, despite the extreme danger, enabling many lives to be saved before her final loss.

GM (Posthumous)

Second Engineer P A HENRY RFA - RFA SIR GALAHAD

When the vessel was bombed on 8 June, the engine room compartment quickly filled with smoke. 2EO Henry, stationed in this area, ordered a Junior Engineer Officer to take the only available breathing apparatus set and leave the engine room. He thus sacrificed his own life to save that of a subordinate.

QGM

Lieutenant J K BOUGHTON RN )  
Lieutenant P J SHELDON RN ) 825 NAS

For their courage as helicopter captains during the rescue of personnel from the blazing ship. They displayed great professionalism despite the extremely dangerous situation.

Queen's Commendation For Brave Conduct

Second Officer I POVEY RFA - RFA SIR GALAHAD

Rescued a badly injured soldier from a smoke filled compartment and then displayed great presence of mind in supervising the lowering of injured men from the ship.

HONOURS IN CONFIDENCE

Radio Operator (T) D F SULLIVAN D158457W - RFA SIR GALAHAD

Risked his life on several occasions by guiding soldiers to the upperdeck through smoke filled compartments and then checked that nobody was left behind.

Category (b)

DSC

Lieutenant Commander H S CLARK RN - CO 825 NAS

For his leadership and courage during the helicopter rescue on 8 June. Also for his leadership of the squadron during the course of the campaign.

DSM

Colour Sergeant M J FRANCIS RM, PO21992F - Coxswain of LCU F1

Brought his landing craft (which itself was narrowly missed by a bomb) alongside the blazing ship and rescued approx 100 men - some badly injured. Returned to pick up others and to help life rafts to the shore. The award was also for his actions during the rescue of the crew of HMS ANTELOPE.

CGM

Third Officer A GUDGEON RFA - RFA SIR GALAHAD

When RFA SIR GALAHAD was hit he displayed great courage in an unsuccessful attempt to free a trapped man in a smoke filled compartment. Prior to this, he also demonstrated a high level of bravery whilst he coxed a boat during the rescue of the crew of HMS ANTELOPE.

Mention in Despatches

Lieutenant J A G MILLER RN - 846 NAS

Hovered his Sea King helicopter above the blazing ship to rescue survivors, demonstrating great skill and courage. Award also covered his services during the course of the campaign.

Petty Officer Aircrewman A ASHDOWN, D113217K - 846 NAS

Remained cool and calm whilst the helicopter, of which he was the crewman, collected survivors from the ship for over an hour. Operated the winch from an open position 100 feet from exploding ammunition. This award was also given for his courage during a previous incident when an engine failed in the helicopter.

## Category (c)

DSC

Lieutenant N A BRUEN RN - Officer Commanding Fleet Clearance Diving Team 3

Removed an unexploded bomb from RFA SIR GALAHAD in a difficult and hazardous operation during the night of 25/26 May 1982.

CGM

Chief Engineer Officer C K A ADAMS RFA - RFA SIR GALAHAD

Advised and assisted during the removal of the unexploded bomb from RFA SIR GALAHAD on 25/26 May. Following day went aboard RFA SIR LANCELOT to render similar services during the removal of an unexploded bomb from that ship.

Mention in Despatches

Leading Seaman (Diver) A S THOMPSON D142800G - FCDDT 3

For courage during the removal of the unexploded bomb aboard RFA SIR GALAHAD 25/26 May.

24574504 Driver M BROUGH, Royal Corps of Transport

Operated crane during the removal of the unexploded bomb 25/26 May.

In addition to the awards mentioned above a further GM award for a Chinese rating of RFA SIR GALAHAD - CHIU YIM NAM - is under consideration at the present time. CHIU rescued several soldiers from a blazing section of the ship. He was not included on the main Falklands list because he has only recently been positively identified as the man involved.

It should also be mentioned that Senior Scientific Officer J A FRENCH, who received an MBE for meritorious service as an advisor on electronic equipment, had been assigned to the RFA SIR GALAHAD for the Bluff Cove/Fitzroy Creek landing - but had gone ashore from the ship shortly before she was bombed on 8 June.

2. RFA SIR TRISTRAM

Only one award on record:

DSC

Captain G R GREEN RFA - Master RFA SIR TRISTRAM

The ship came under repeated air attacks during the campaign. When she was bombed on 8 June Captain Green showed great courage and set a fine example during the abandonment of the vessel.

E4

DGST(N)'s COMMENTS ON THE BOARD OF INQUIRY'S REPORT -  
LOSS OF SIR TRISTRAM AND SIR GALAHAD -  
MAIN CONCLUSIONS AND RECOMMENDATIONS

Reference: BOI Report dated Sep 82, Annex B

1. DGST(N)'s comments are as follows:

ANNEX B, APPENDIX 1, CONCLUSIONS

<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relevant Para References</u>
B1.3	Agreed		G3.52j
B1.4	Agreed	Agreed that the total abandonment of the ship turned out to be unwarranted. However	F3.47f
B1.7	Agreed	a. the advice of the Chief Officer to the Master was that there was a UXB on board, with a fire in the vicinity;	
B1.8	Agreed	b. the Chief Engineer, the Damage Control Officer, did not dissent from this conclusion, having just returned from MCR;	
B1.9	Agreed	c. the HKC were known to be incapable in these circumstances of fighting a fire (see B1.89), thus any FAG would need to comprise officers only;	
B1.10	Agreed	d. the Master's training and experience were to place the saving of life as paramount.	
B1.35	Agreed	(See comments at B2.7)	E6.38c E6.36
B1.36	Agreed	The concept of arming RFAs is under current consideration and any armaments allocated to LSLs will be included in the LSL Handbook and CB4587.	E6.38d E6.37
B1.72	Agreed	Ships Standing Orders for periods of tension and war states are being drafted.	F2.1

<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relative Para References</u>
B1.73	Agreed	(See comments at B.27)	F2.4 F2.5
B1.74	Agreed		F2.6
B1.76	Agreed	(See comments at B1.82)	F3.47b
B1.77	Agreed	(See comments at B1.4)	F3.47c
B1.78	Possibly	In Captain Green's mind there was an overriding consideration to save life if at all possible. Additionally, the speed of spread of fire in SIR GALAHAD would certainly leave a deep impression.	F3.47d
B1.79	Not agreed	In maintaining silence the Chief Engineer tacitly supported Chief Officer's advice.	F3.47e
B1.80	Agreed	(See comments at B1.87)	F3.47f
B1.81	Agreed		F3.47g
B1.82	Agreed	However, it is possible that the Master knew any Fire Party remaining behind would be made up from 'volunteers' and these clearly were not forthcoming from the Chinese ratings. It is considered unwise to make up a FAG comprising officers alone.	F3.47h
B1.83	Agreed	(See comments at B1.82)	F3.47j
B1.85	Agreed	a. Agreed only in hindsight. Who else was competent to ensure boats reached SIR GALAHAD?  b. Agreed (see comments at B1.82).	F3.47l  F3.47l
B1.86	Agreed		F3.47m
B1.87	Agreed	Obviously 'Belief' was strong.	F3.47n
B1.88	Not agreed	The error of judgement came in <u>not returning to the after end.</u>	F3.47o

<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relevant Para References</u>
B1.89	Agreed	A Board submission will be made proposing a phasing out of HK Chinese in RFA service over the next few years. Presently being staffed by CFS Coord(N).	F3.47p
B1.90	Agreed		F1.10
B1.91	Agreed	(See comments at B2.7)	G2.11
B1.102	Agreed		G4
B1.103	Agreed	The siting of additional BA equipment externally to the accommodation areas on all RFAs is being investigated by DST(FMV).	G4.33a
B1.104	Agreed	All ships proceeding south are now provided with ELSA for all hands plus 10%. Sets will be provided for embarked troops and designated compartments. It is intended to supply all ships as stocks become available.	G4.33b
B1.105	Agreed	It is accepted that the method of launching valise type liferafts on LSLs is cumbersome and time-consuming in emergency conditions. The fitting of Beaufort self launching liferafts is a better system but suitable stowage positions are limited if sidecarried mexefloats are fitted. A study of alternative positions other than the vehicle deck will be carried out in conjunction with the Department of Trade.	G4.33c
B1.106	Agreed	A working party was set up by DST(FMV) early in 1982 with the aim of establishing a policy for the renewal of the LSL military communications fit. The Inquiry has emphasised the CORPORATE experience of other LSLs regarding the inadequacy of the present obsolescent system.	G4.33d
B1.107	Agreed	Alternatives to aluminium are kept under constant review.	G4




<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relevant Para References</u>
B1.108	Agreed	Asbestos fitted materials used in the construction of LSLs has been progressively replaced in refits over a number of years. The remaining asbestos material will be removed as future refits fall due.	G4.33e
B1.109	Agreed	External wood accommodation door hinges and locks will be investigated with regard to strengthening. Replacement of these doors which are not required for citadel conditions may be necessary in the light of investigations.	G4.33f
B1.110	Under consideration	The internal wood doors, as fitted, are not capable of being locked by key internally and do not therefore require the fitting of escape panels under DOT requirements. The fitting of escape panels which are easily removable presents a problem of security of personal belongings and vandalism when undergoing refits, and prolonged repairs. A study will be undertaken to provide crash panels which could easily be fitted when under warlike operations.	G4.33g
B1.111	Agreed		G4.32k
B1.112	Agreed	The feasibility of fitting a remote start facility for the avcat supply pump will be considered; no technical difficulty is expected.	G4.33h
B1.113	Under consideration	Resiting of the diesel alternator header tank within the engine room has been subject to a review on other occasions, as stated in the report. No other alternative position exists and it is considered that the siting of this tank would constitute a hazard in any position when subject to a weapon attack.	G4.33i



<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relevant Para References</u>
		Alternatively, the fitting of a pressure feed system to the alternators feed from a tank below water level would present major design problems with the replacement of existing alternator fuel pumps, which should incorporate a spill system lead back to the fuel tank.	
B1.114	Agreed	The fitting of foam tubes either side of the steering flat would present no difficulty and will be carried out. Investigations of other compartments used for carriage of inflammable materials with a view to fitting external foam tubes will also be carried out.	G4.33j
B1.115	Noted		G4.32o
B1.116	Noted		G4.32p
B1.117	Agreed		G4.32q
B1.118	Agreed	Ships Standing Orders for periods of tension and war states are being drafted and will contain such advice.	G4.32r

ANNEX B, APPENDIX II, RECOMMENDATIONS

B2.1	Agreed		G3.52j
B2.2	Agreed		F3.41a
B2.7	Agreed	A comprehensive review is being undertaken regarding all 'Training' requirements.	E6.33c E6.36 E6.38c E6.35 F2.4 F2.5 G2.11
B2.8	Agreed	This is an anti-tank weapon. Its suitability against aircraft from ship should be evaluated. If it is found commendable and is recommended for RFA/LSLs then siting would be decided on a Class basis, and included in relevant handbooks.	E6.33d E6.37



<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relevant Para References</u>
B2.9	Agreed		E7.15a
B2.18	Agreed	Will be implemented if courses become available.	E13.19a E13.18c
B2.21	Agreed	In future all 3rd Officers(Deck) and 4th Engineer Officers will attend a suitable course.	F1.6 F1.10b
B2.22	Agreed	Consideration is currently being given to a Management Course at Southampton for all senior RFA officers.	F1.10c
B2.23	Agreed	(See comments at B2.2)	F3.41a
B2.24	Agreed	(See comments at B1.89)	F3.41b
B2.25	Agreed	Will be done.	G1.11a
B2.26	Agreed	(See comments at B1.72)	G1.11b
B2.27	Agreed	Arrangements already in hand.	G1.11c
B2.28	Agreed	Noted. Consideration is being given as to the most comprehensive method of disseminating this information to all Officers of the Watch.	G1.11d
B2.29	Agreed	Arrangements will be made for all Officers/POs/Ratings to receive First Aid Training. Exercises will be arranged. NB. All Deck/Engineer Officers have FA Certificates when sitting for DOT examinations.	G1.11e
B2.30	Agreed	A directive will be sent to all Chinese manned RFAs.	G1.11f
B2.31	Agreed	Action is in hand to increase the number of Niel Robertson Stretchers from six to eighteen. Consideration to increase the number of all RFAs is in hand. (D/ST75G/257/15).	G1.11g
B2.32	Agreed	(See comments at B1.103)	G4.33a
B2.33	Agreed	(See comments at B1.104)	G4.33b
B2.34	Agreed	(See comments at B1.105)	G4.33c

<u>Para</u>	<u>Agreement</u>	<u>Comment</u>	<u>Relavant Para References</u>
B2.35	Agreed	(See comments at B1.106)	G4.33d
B2.36	Agreed	(See comments at B1.108)	G4.33e
B2.37	Agreed	(See comments at B1.109)	G4.33f
B2.38	Agreed	(See comments at B1.110)	G4.33g
B2.39	Agreed	(See comments at B1.112)	G4.33h
B2.40	Agreed	(See comments at B1.113)	G4.33i
B2.41	Agreed	(See comments at B1.114)	G4.33j

DGST(N)'s COMMENTS ON THE BOARD OF INQUIRY'S REPORT -  
LOSS OF SIR TRISTRAM AND SIR GALAHAD -  
ANNEXES E-H

Reference: BOI Report dated Sep 82, Annexes E-H

1. DGST(N)'s comments are as follows:

ANNEX E: Events Leading to the Attack on RFAs SIR TRISTRAM  
and SIR GALAHAD

<u>Para</u>	<u>Agreement</u>	<u>Comment</u>
E6.12 E6.25	Agreed	It is considered that the lack of air defence is an important aspect and oen of public interest.
E6.14	Agreed	Siting of weaponry in LSLs and other RFAs should be agreed by all parties concerned.

ANNEX F: SIR TRISTRAM

F1.3 The Ship's Doctor repatriated from ASI to UK mid-April for domestic reasons was new to the RFA Service. He will be interviewed.

ANNEX G: SIR GALAHAD

G1.6	Agreed	A review of the RFA Medical Organisation will be implemented. The review will cover organisation, supply of stores and packed sets for war/tension states.
G4.1	Agreed	The findings of the Fire Research Station do not indicate any grave shortcomings with regard to furnishings or mattresses. Standing Orders in future will include instructions regarding the stowage of certain items during tension/war states.
G5	Agreed	(See comments at G1.6)

ANNEX H: RESCUE AND SALVAGE

H2 Concern is expressed by DGST(N) at the apparent pilfering that occurred on both LSLs after the attack, of personal effects, Naval stores and equipments.

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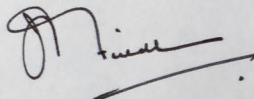
Ministry of Defence (DUS(N)) (Copy No. 1) 26 Oct 82

BOARD OF INQUIRY - REPORT INTO THE LOSS OF RFAs SIR TRISTRAM AND SIR GALAHAD

Reference: MOD(NLC)'s D/NLC/1/16/20 dated 29 July 82.

1. The official copy of the report of the Board of Inquiry into the loss of RFAs SIR TRISTRAM and SIR GALAHAD in June 1982 is forwarded in accordance with the reference. I agree with most of the report's conclusions and recommendations. My comments on the naval aspects are in Annex A of this letter, and my comments in consultation with my Land Deputy on the joint warfare and amphibious warfare aspects are in Annex B.

2. The Report reveals some personnel failings and errors of judgement. I have carefully considered these, and in the circumstances I have decided that they do not merit disciplinary or formal administrative measures. I, my COS, Land Deputy or CSO(E) as appropriate, will take the follow up action described in the Annexes to this letter.



J D E FIELDHOUSE  
Admiral

Annexes:

- A. Naval Aspects (not to UKCICC)
- B. Joint Warfare and Amphibious Warfare Aspects.

Enclosures:

1. Board of Inquiry Report - Main Report and Annexes A - D.
2. Board of Inquiry Report - Annex E.
3. Board of Inquiry Report - Annexes F - J.
4. Board of Inquiry Report - Summaries of Witnesses' Statements (to MOD NLC only).

Information:

Ministry of Defence (Sec VCNS) (Copy No. 2)  
The Flag Officer First Flotilla (Copy No. 3)  
Director of Plans, UKCICC (Copy No. 4)  
The Commodore Amphibious Warfare (Copy No. 5)  
File (Copy No. 6)  
After Action (Copy No. 7)

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ANNEX A TO  
CINCFLEET's 520/242.L  
DATED 26 OCT 82

NAVAL ASPECTS

PERSONNEL CONSIDERATIONS

1. Tactical Training for RFA Masters. I believe that a full Tactical Course would be more than is required for most RFA Masters. However, consideration should be given to devising suitable acquaint courses, both in the general tactical field, in Amphibious Warfare (for designated Captains of LSLs), and for RFA officers of the watch (page B1-2-2, para 27- page G1-3, para 11c-d).
2. Chinese Crews. Chinese crews deployed South of Ascension Island were a source of considerable anxiety. I agree that MOD should give further consideration to the advisability of manning RFA vessels in forward operational areas with Chinese crews (page F3 - 12, para 48b).
3. Handling of SIR GALAHAD's Intentions Signal. Any error of judgement, by the Staff Officer Operations to Commodore Amphibious Warfare, in not informing COMAW of SIR GALAHAD's signal DTG 030015 JUNE, arose only if the decision to order SIR GALAHAD to sail notwithstanding her lateness was incorrect, and if COMAW personally might have altered that decision. There is no suggestion of this (page E13-3, para 12). The point is minor in comparison with the failure to deal properly with the reply particularly in failing to ensure that the address was comprehensive (page E2-8, paras 34p and q), and for this reason Recommendation 13 (Page B1-2-1) is not agreed. As far as 5 Brigade Main HQ were concerned SIR GALAHAD was to remain at San Carlos overnight (Annex E2 para 19b). With hindsight clarification should have been sought from COMAW as to both the timing of her departure and her intended destination.
4. Staff of Commodore Amphibious Warfare. That this team of officers, mainly untrained and inexperienced, in this specialised employment, achieved what they did is highly commendable.
5. Culpability
  - a. Staff Officer Operations. I agree that the actions and, finally, the inaction, by the Staff Officer Operations were attributable to stress and fatigue. He was very new in post having had little, if any, experience of amphibious operations and only the scantiest of training to prepare him for the task. In the end, he could not cope with the pressures that were imposed by the situation (page E13-3, para 18).
  - b. SIR TRISTRAM Officers. The impact of the attack upon SIR TRISTRAM and SIR GALAHAD left the Master of SIR TRISTRAM mentally stunned. His reaction to the incident was totally out of character for a man who has achieved such professional heights, and his lack of judgement reflects the mental shock suffered. Although more physically active following the attack, the Chief Officer also behaved out of character. His actions were those of habit; however, his reactions were exaggerated and resulted in incorrect assumptions, conclusions and advice.

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The [redacted] displayed an apathy to the situation which, in itself, reflected a mental numbing that precluded his taking any active or constructive line of action. In the end, these officers opted to take actions which for them were the priority of the moment, to the exclusion of all else. I believe that this, too, illustrates the shocked mental state of these officers. (Page F3-11, para 47 b-o).

c. Intended Action. In these circumstances I have decided that this is not a case for formal administrative action in respect of any of these three officers. Nevertheless, since they were serving under my command at the time of the incidents concerned, I or my Chief of Staff or Chief of Staff (Engineering) as appropriate, will see each of them to ensure that they fully understand the situation.

#### MATERIAL AND EQUIPMENT

6. Partition Bulkheads. The conclusion (Page G4-5 para 32f) that 'the use of aluminium for construction is entirely acceptable....' is misleading. It is clearly based on the premise that the substitution of aluminium by steel in the existing LSL design would have severe operational penalties. The use of aluminium in warship construction to reduce topweight, and hence increase 'payload', is an undesirable design compromise which should be discouraged even at the penalty of increasing hull dimensions, and total displacement. However, I agree with the recommendation (page G4-7, para 33e) that asbestos-filled materials should not be used in new-construction ships as they constitute a health hazard, and that such bulkheads should be replaced in existing ships on an opportunty basis. My staff are investigating this matter and will make appropriate recommendations to MOD in due course.

#### NBCD

7. RFA Organisation and Training. Extracts from the report concerning NBCD have been passed to the Captain NBCD, HMS EXCELLENT. My staff and that of the Flag Officer Sea Training will consider jointly the improvement of RFA NBCD organisation and training.

#### MEDICAL MATTERS

8. Medical Organisation. [The drafting of [redacted] by CTF 317 to support the RFA Medical Organisations was vindicated and, but for their presence, the first-aid organisation would have been well below acceptable standards. In fact, that in SIR GALAHAD was never satisfactory, the [redacted] having made little effort in this direction either before or after the [redacted] arrived. Furthermore, the [redacted] in SIR GALAHAD played little part in attending to casualties after the attack, being obviously dazed and shocked and, but for the initiative and ingenuity of NCOs and men of 16 Field Ambulance in SIR GALAHAD, little would have been done.] I agree with the recommendations concerning first-aid training for RFA officers and for Chinese and other ratings designated for first-aid parties (page G1-4, para 11e-f).

9. Neil - Robertson Stretchers. I support the requirement to increase the number of Neil-Robertson stretchers in LSLs. Recommendations for stretcher holdings in HM Ships, RFAs and ships taken up from trade will be forwarded in due course

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ANNEX B TO 3/2  
CINCFLEET's 520/242.L  
DATED 26 OCT 82

JOINT WARFARE AND AMPHIBIOUS WARFARE ASPECTS

1. Planning. Before the Falklands campaign it was considered unlikely that the UK would ever mount an opposed amphibious operation, and our amphibious forces and their training had been run down accordingly. So-called amphibious landings were actually administrative landings, and NATO amphibious exercises were pre-planned and rehearsed in fine detail; "hot" planning had fallen into disuse. It is therefore remarkable that the overall operation, despite the lack of preparation was as successful as it was.
2. Adequacy of Orders. The orders issued by CTF 317 were sufficient and appropriate for this task although not fully in accord with strict amphibious doctrine.
3. The operational situation was changing quickly and there was a need for speed. What began as a set-piece operation changed into a rolling programme outside the immediate area of any one task group commander, creating substantial difficulties in co-ordination, command and communications, and the need to depart from doctrine. To overcome these difficulties, there was a need for very clear and detailed orders. However, it would seem that there were two critical shortcomings in the orders issued, namely:
  - a. The precise identification of the landing beach for the Welsh Guards;
  - b. Clear identification of the "officer-in-charge" of this specific landing operation.
4. Further Difficulties. Fifth Infantry Brigade's inevitable lack of amphibious knowledge and lack of time in theatre led them to under-estimate:
  - a. The degree of control required;
  - b. The need to disembark as quickly as possible;

This in turn led to contention, and the acceptance of delays. As it was likely that the Welsh Guards would have joined the fighting shortly after disembarkation the apparently inflexible decision of OC Troops to follow his orders and not separate his men from their equipment is considered both justified and prudent.

5. Conflict of Command - Welsh Guards/16 Field Ambulance. The conflict between the Medical Officer Commanding 16 Field Ambulance and the Officer Commanding Troops, Welsh Guards over the priority to be given to the disembarkation of 16 Field Ambulance, is cause for concern (pages E10-2, paras 7&9; E10-4, Para 20). The Medical Officer had agreed correctly that the responsibility of OC Troops should be assigned to Major SAYLE (page E9-2, Para 7). The MO's decision to argue openly and override the OC Troops, landing advance elements of 16 Field Ambulance, was to prove fortuitous (page E10-4, para 21). However, control of an operational movement was undermined

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the seniority of a Medical Officer. Although clear orders from 5 Brigade as to the priority for landing particular Units might have avoided this confrontation I do not consider in the event that casualty figures would have been markedly different. (Page B1-1-5, para 55 conclusion is therefore not agreed). This incident raises important issues concerning the command and control interface between arms officers and services officers, which may require consideration in MOD. I have asked my Land Forces Deputy to investigate the personnel aspects of this particular incident further, and to take whatever action he deems necessary.

6. Departures from Doctrine. There were two departures from the norms of amphibious command doctrine, but each was reasonable in the circumstances:

- a. The overall Commander Amphibious Task Force (COMAW) and the Commander Land Forces (CLIFFI) could have delegated authority to an officer taking part in the landing. However, the rolling character of this operation made the nomination of a local, forward CATF difficult.
- b. Tactical control of the ship-to-shore movement assets was delegated to the Commander Fifth Infantry Brigade. This unusual arrangement was sensible in view of the rolling programme envisaged for the movement assets (LSLs).
- c. Although communications were clearly very difficult, I consider that it was more the lack of command authority on the spot which contributed to the delay and confusion.

7. Command, Control and Communications. CTG 317.8 (Flag Officer First Flotilla) did not have a staff that could cope with the full task of a joint Forces Headquarters ashore and the control of ships and aircraft afloat. Quite apart from the incidents here discussed, the need to set up a fully representative JHQ with appropriate communications in similar rapid deployment operations merits further study, possibly co-ordinated by UKCICC, which will become responsible for Joint Warfare training early in 1983.

8. Training. This operation was just one incident in the Falklands campaign which highlighted the lack of Joint Warfare and Amphibious Warfare training. I consider it important that:

- a. Joint Warfare and Amphibious training should be revived, as is currently intended under the aegis of UKCICC;
- b. Such training should be a prerequisite for appointing officers to AW posts.

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LOSS OF SIR TRISTRAM AND SIR GALAHAD - NARRATIVE

As June opened, 3 Cdo Bde operations were developing well on the northern flank, with a Commando established on Mounts Kent and Challenger (Map C1, Flag 2).<sup>1</sup>

1. CLF decided to commit 5 Bde, who had just landed in San Carlos, to the south, to increase pressure on the Argentinians and provide flexibility between axes of advance. An opportunity to accelerate came when 2 Para seized Fitzroy by helicopter (other elements of 2 Para and of 1/7 Gurkhas were ferried forward by helicopter and in the Falklands MV MONSUNEN). There were many pressures to move fast to capture Port Stanley - eg. limited Naval support due to losses and damage, and fatigue of aircrew; exposure and fatigue of troops in the mountains; political need for an early end to hostilities; and the need for support at Fitzroy to maintain let alone develop operations.

2. There was risk of the fighting troops outstripping logistic resources. The concept entailed a big move of men and stores to Fitzroy/Bluff Cove. There were not enough helicopters, because of those lost in ATLANTIC CONVEYOR and tasks in the fully committed northern advance. Marching the troops was barely feasible, with no helicopters or snocats/tractors for cross country support and to lift their heavier fighting equipment, and anyway would be far too slow. Shipping men and stores was the only option if the southern operation was to proceed quickly. The question remained of how to execute the concept without overriding risk, bearing in mind particularly the objections to losing a fully-loaded LSD at this stage, the land-based Exocet (exact position unknown but suspected envelope at Flag 2) and risk of air attack if the weather did not continue to mask suspected OPs in the mountains.

3. Fitzroy was envisaged as the base for 5 Bde and the BMA. There was imprecision about Fitzroy and Bluff Cove (Map C3, Flag 3): they posed different operational problems for ships but were within easy march via the bridge. COMAW, CLF and 5 Bde all assumed that disembarkation would be at Fitzroy; the infantry assembly area was Bluff Cove, but they could march from Fitzroy provided their heavy equipment was sea-lifted.

4. Critical requirements were to move the Scots and Welsh Guards, the Field Ambulance, a Rapier Squadron and large quantities of ammunition. A rapid sequence of planning ensued, modified as events developed:

- a. On 3 June Plan One envisaged INTREPID and SIR TRISTRAM lifting the battalions to Bluff Cove: the plan was stopped by CINCFLEET, mainly because of daylight risks to INTREPID and escort.<sup>2</sup>
- b. Plan Two entailed INTREPID going as far as she could (Flag 2) on the night 5/6 June, despatching Scots Guards to Bluff Cove on a long trip by LCU and returning to San Carlos before daylight; she would take the Welsh Guards next night, to RV with the ICUs and despatch them to Bluff Cove. SIR TRISTRAM was to take logistic load. LSL had been used successfully at Teal Inlet to the north; and it had been assumed

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from the beginning that weight of logistic needs would require LSL (E3 para 12).

5. The plan was initiated, and on 5/6 June the Scots Guards, suffering severely from exposure from the 50 mile trip by LCU, went to Bluff Cove. Next night 6/7 June FEARLESS and SIR TRISTRAM sailed, but FEARLESS was unable to recover INTREPID's ICUs because of weather at Fitzroy, and only half the Welsh Guards were landed (Bluff Cove), in FEARLESS's two LCUs. SIR TRISTRAM anchored off Fitzroy early 7 June and began unloading ammunition (a 36-48 hour job) with INTREPID's four and (later) FEARLESS's two LCUs and a 66ft Mexeflote pontoon. INTREPID's LCU's were recalled to San Carlos because of urgent tasks there unloading shipping.

6. With the load to be lifted a series of further LCU trips would be too slow; <sup>and</sup> uncertain in the light of previous experience; so Plan Three was ordered, using SIR GALAHAD to take the rest of the Welsh Guards to Bluff Cove and the Field Ambulance and 4 Rapier units to Fitzroy. Risks of having 2 LSLs at Fitzroy were recognised, notably lack of air defence. Rapier could not be spared earlier (E6 para 10). The possibility of sending a surface escort had been considered and rejected, because it would draw additional attention with little additional safety; the closest a frigate could approach the anchorage was 8 km (E6 para 9). The weather had so far limited visibility of OPs, and the risk was considered acceptable in view of the urgency. There were delays in loading and discussion over destination, but the upshot was that SIR GALAHAD was ordered to sail to Fitzroy, where she arrived at 1100 hours (before dawn) on 8 ~~July~~ June.

7. SIR GALAHAD's arrival was unexpected. Decisions were being taken quickly in the changing situation; there had been an omission in distribution of a signal (E2 paras 17-22, Flag 4); overloading of communications (1300 signals per day between CTGs alone); communications to Fitzroy and between 5 Bde forward (Fitzroy) and main HQs (Darwin) had been unreliable, particularly at night (E12); and there were uncertainties in the rapidly changing command responsibilities. Thus there was no co-ordinated plan for unloading two LSLs quickly. The only good beach, unsuitable for beaching LSLs, was unusable for part of the day because of tides, and landing resources allotted to 5 Bde at Fitzroy were limited: one of the LCUs had been sent to Darwin for stores, leaving only the other LCU and Mexeflote, which were half loaded with ammunition from SIR TRISTRAM; the critical beach factor was shortage of mechanical handling equipment.

8. Unloading of Rapier by a Sea King began at 1140 hours, and by 1500 hours two units were fully operational (two had systems defects; deployment shown by crosses on map Flag 3). The Welsh Guards declined to land because they were expecting to move on to Bluff Cove and had been instructed not to be separated from their fighting equipment; they had also been told, wrongly, that the bridge to Bluff Cove was impassable, leaving them with a long march which would have reduced their capacity for immediate operations. The LCU and Mexeflote proceeded ashore to unload their ammunition, and plans were made to land the Field Ambulance by Mexeflote and take the Welsh Guards to Bluff Cove by LCU in two trips.

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- 3 -

9. Delays occurred due to beach problems, and when the LCU returned at 1445 the CO of Field Ambulance pressed for his advance party to go ashore in the LCU before it was committed to the long double trip to Bluff Cove. This was done, the LCU returning to SIR GALAHAD at 1610 hours. The LCU's bow ramp developed a fault, and a new plan was made to load the Welsh Guards equipment into the LCU by crane. The attack occurred at 1710 hours as the second load was being hooked on and the Welsh Guards were assembling in the Tank Deck and stern trunk.

10. The enemy had known of activity in the Fitzroy/Bluff Cove area, from detecting helo operations and from radio intercepts: a Secret source indicates that the landing was actually seen at 081400Z (E1 para 11) or picked up by radio intercept (E12 para 21). The attack came from the East unexpectedly, by four Skyhawks in line ahead at 100 feet (diagram E11, Flag 5). Two bombs hit SIR TRISTRAM's starboard quarter, one partly detonating in a port ballast tank and the other not exploding but final location not known for sure; another exploded beneath her, holing her and compounding the damage. Three bombs (probably 500 lb) hit SIR GALAHAD close together in the after accommodation area, one passing out port side; the two did not explode, but big fires and thick black smoke developed immediately. (Damage to SIR TRISTRAM and photographs Appendix 1 to Annex F3, Flag 6).

11. There was concurrently an air attack on ships at San Carlos, and the CAP (Station 57: Map C2, Flag 2) had been despatched to meet it. An air raid warning of a second raid had been passed on the IAAWC circuit but was not received in SIR GALAHAD (malfunction or listening on wrong frequency). In SIR TRISTRAM the OOW assumed it was for San Carlos only, but the operator told the Blowpipe NCO who alerted his team. Both ships were surprised by the direction and speed of the attack. No Bofors or Blowpipe were fired, and GPMGs claimed no hits. 3 Rapier units had systems defects (not unexpected soon after the move) and the fourth was masked by terrain.

12. In SIR TRISTRAM the Captain immediately launched two lifeboats to help SIR GALAHAD, using two key Deck Officers. The absence of these Deck Officers and other factors contributed to inadequate reporting of the DC position within SIR TRISTRAM. There was dense acrid smoke in the tank deck and reports of fire and a UXB in the steering compartment (inaccessible through damage), palletised ammunition immediately above the fire (100 tons of ammunition still on board), and danger from 400 gallons of kerosene and diesel fuel. Personnel were ordered forward to safety, Two men were dead. The Chinese crew were apathetic and bewildered. No significant fire fighting was attempted. At about 1750 hours the Captain ordered abandon ship, which was done in an orderly fashion. 90 minutes after the attack, fire began to take hold at the after end. Next day the fire was still burning but controllable, and SIR TRISTRAM was entered to consider disembarkation of ammunition and stores.

13. In SIR GALAHAD no bombs exploded but there were two fire-balls/fire fronts. One was probably a bomb smashing a 500 gallon header tank of diesel fuel which sprayed finely and ignited, causing burn casualties near the galley, fire aft and dense black smoke. The other was probably a bomb (possibly two) deflagrating (split open and rapid burning of the explosive uncompressed; G3 para 46). This created a fire-ball in the stern trunk, and 23 out of 35 in the Welsh Guards mortar platoon assembled there were killed: it flashed forward into the Tank Deck where the rest of the Welsh Guards /were .....

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- 4 -

were assembling, which is where most other casualties (mostly burns) occurred. Within minutes several fires were established and ammunition began exploding, and the Captain gave orders to abandon ship about 1720 hours. There was dense smoke and fires in the tank deck, and gallantry in attempts to get men out (Enclosures 5 & 6). Abandon ship was orderly and disciplined and often heroic, 300 men, in 30 minutes, via a lifeboat from SIR GALAHAD and liferafts, SIR TRISTRAM's boats, the LCU alongside, the Mexeflote, 4 helicopters and a civilian boat from Fitzroy. 48 died in SIR GALAHAD; 135 were treated ashore, none of whom died. (Diagrams showing position of troops, damage and casualties Annex G6, Flag 7; *large scale copy available if needed*).

14. The proceedings refer to a second raid 1½ hours later: no bombs were dropped, one hit claimed by Rapier.

Note 1. The Proceedings are confusing on this point. The Intelligence Annex, E1 para 2, puts Argentine forward positions on Mount Challenger; E3 para 9a implies a Commando was moving into the area. Other sources confirm that 42 Commando had been established on Mounts Kent and Challenger for some days. Challenger was a big feature, and a hidden OP or daylight patrols might have been on the Southern slope, but this is thought unlikely. The point is not crucial, because evidently other features nearer Stanley could just be seen from Fitzroy; anyway E12 para 21 suggests that the OP's contribution may have been a radio intercept. The point is that Mount Challenger itself may not have been critical as the Proceedings imply; *and if indicated CLF forward positions, which 5 Bde needed to deal with quickly.*

Note 2. There has been public criticism of use of LSL instead of LPD. The ships have of course quite different operating characteristics. LSL could get into 'Port Pleasant' off Fitzroy. LPD could not, and take time to 'go deep' to despatch and recover LCU, and could be caught in open water in daylight. Moreover the LPD had other vital functions to perform at San Carlos and elsewhere, notably command and communications, which were at a premium. After the loss of the LSLs, LPD were used in the same method as earlier, despatching troops and stores to the area by LCU.

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9 Dec.82

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REPORT TO  
COMMANDER-IN-CHIEF, FLEET  
OF THE BOARD OF INQUIRY  
INTO THE LOSS OF  
**RFAs SIR TRISTRAM  
& SIR GALAHAD**

IN JUNE 1982  
**MAIN REPORT**  
ANNEX A-D

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Room 1325  
Express State Building  
Ministry of Defence  
Lillie Road  
London

The Commander-in-Chief, Fleet  
Northwood  
Middlesex

23 September 1982

Sir,

REPORT ON THE BOARD OF INQUIRY INTO THE LOSS OF RFA SIR TRISTRAM  
AND RFA SIR GALAHAD

Reference: A. CINCFLEET's 00520/8.X of 30 Jun 82.

1. We have the honour to submit our findings as members of the Board of Inquiry which you convened into the disablement and abandonment of the Royal Fleet Auxiliary Ships SIR TRISTRAM and SIR GALAHAD at PORT PLEASANT in the FALKLAND ISLANDS on 8 Jun 82 during Operation CORPORATE. (Reference A).
2. The Terms of Reference for the Board, together with its composition are shown in Annex A. It should be noted that Surgeon [REDACTED] RFA was replaced on the Board by Surgeon Lieutenant Commander [REDACTED] RN on 22 Jul 82.
3. All times used in this report are ZULU time.
4. Our complete Conclusions and Recommendations are to be found at Annex B.

AIM

5. The aim of the Board of Inquiry was to inquire into the circumstances leading to, and attending, the disablement and abandonment of RFA SIR TRISTRAM (Captain G R GREEN RFA) and RFA SIR GALAHAD (Captain P J G ROBERTS RFA) on 8 Jun 82 at PORT PLEASANT in the FALKLAND ISLANDS.

METHOD

6. Our task fell naturally into three parts:
  - a. Operations leading to the events of 8 Jun.
  - b. The state of readiness of RFA SIR TRISTRAM and the events that took place on board that ship on 8 Jun.
  - c. The state of readiness of RFA SIR GALAHAD and the events that took place on board that ship on 8 Jun.

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Annexes E, F and G respectively cover these aspects of our report in full.

7. The availability of witnesses led the Board to examine the events related to both RFA's first and then subsequently to move onto Operations as witnesses returned from the FALKLAND ISLANDS. This method also reduced the likelihood of confusion since each RFA was in effect a Board of Inquiry on its own. The Board was also very aware of the fact that virtually every witness was on leave when he was called before us; this factor together with a natural dimming of the memory with time, the ability of witnesses to discuss matters at length between 8 Jun and late Jul/Aug, and their lack of access to their own records in many cases led the Board to look for a greater corroboration from witnesses before making a judgement on the testimony given than might be necessary in the ordinary course.

8. Visits. The RN members of the Board were very aware of their lack of knowledge of LSL's whilst RFA members wished to refresh their detailed knowledge. The Board therefore paid a visit to RFA SIR PERCIVALE at MARCHWOOD on 28 Jul 82; she was the first available LSL to visit and had just returned from the SOUTH ATLANTIC. The Board also visited PLYMOUTH and MARCHWOOD for a total of 3 days to take evidence. A visit to the BBC Studio at WHITE CITY was also undertaken to achieve access to the complete film footage taken at FITZROY on 8 Jun.

9. The Task. After study of our directive we concluded that we needed to examine the following areas of interest:

- a. Preparedness of both LSL's for war.
- b. Command and Control as it affected amphibious operations.
- c. Assessment of the threat to amphibious support forces.
- d. The plans for the logistic support of advanced units.
- e. The plans for the movement of personnel forward by land, sea and air.
- f. The execution of the plans at d and e above.
- g. The suitability of the FITZROY area for support operations.
- h. The availability of landing craft and Mechanical Handling Equipment (MHE) for the task.
- j. The essential need for SIR GALAHAD to move as soon as possible after 7 Jun to land supporting arms and troops at FITZROY and thus be there at the same time as SIR TRISTRAM.
- k. The measures taken to provide for the defence of the LSL's in terms of:

- (1) Combat Air Patrol (CAP) aircraft.

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- (2) Surface escorts.
  - (3) Organic PDMS.
  - (4) Shore missile defence.
  - (5) Air Raid Warning Procedures.
1. Other areas of possible influence such as Communications.

DISCUSSION

10. The Requirement for 2 LSL's To Be In PORT PLEASANT Together.  
The original Operation SUTTON plan for the logistic support of 5 Inf Bde was executed to plan by SIR TRISTRAM except she arrived in PORT PLEASANT a day later than originally identified; this was a natural progression from earlier delays. The Board therefore had to examine most closely the arguments for sending SIR GALAHAD to be at the same place, at the same time, as SIR TRISTRAM.

11. The arguments were derived about the following points:
  - a. Naval offshore support was limited in intensity to about mid-June due to losses, damage and increasing fatigue amongst aircrew after prolonged operations at high rates. Resistance at PORT STANLEY had to be ended early and before any of the factors became of major significance.
  - b. The constraints placed upon the use of major warships to avoid loss either by air attack or from land based EXOCET; such a loss with many men would be politically unacceptable.
  - c. The political requirement for an early end to hostilities with minimum losses. (This point is not examined further as it lies outside the scope of this report).
  - d. The need to complete land operations as soon as possible. The weather was mostly appalling and rarely good; 3 Cdo Bde had recently moved up into the mountains and casualties due to exposure, trenchfoot etc would mount quickly unless operations progressed in a timely manner.
  - e. The need to move forward to FITZROY the Field Ambulance and 4 RAPIER fire units in addition to the 2 remaining Companies of WELSH GUARDS on the night 7/8 Jun.
  - f. The ability of the enemy to observe and respond quickly to activities in the FITZROY area.
  - g. The effect of good/bad weather on air operations both own and enemy.
  - h. The consequences of delay in not moving forward SIR GALAHAD until SIR TRISTRAM was clear of PORT PLEASANT.

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12. The points above are all addressed in greater detail in Annex E but they do sum up the operational arguments in a more succinct style. CTG 317.1 in giving his views in the following manner was probably speaking for all Commanders when he said to us:

"I think that there is little doubt that the necessity to get on with operations for all sorts of reasons, most of which I have already mentioned to you, was an overriding factor in our planning. I think that the necessity to do this was common really to all of us. If I may take the ground forces, we were constantly having to make our calculation about whether we should wait another day and build up more ammunition, more information from our patrols about the enemy before we attacked them or whether we should go now and get on with it. In the end I think that Commanders were always conscious that their decisions must come down in favour of getting on with it once you've got at least sufficient forward. We cut our calculations pretty fine as I think was shown by the last night's battle in which we started with artillery batteries with 350 or 400 rounds a gun, some batteries by the next morning were down to 6. So I think I would say that this urge to get on with things will have contributed to doing things rather with speed than with thoroughness once or twice. I think that the calculation as to whether that is the right thing to do in war or not is always a very difficult one but I suppose we must conclude that in the end we did win. Maybe we would have won more cheaply if we'd taken longer, I very much doubt it."

The Board are in broad agreement with this view and base their major conclusion below on similar grounds.

13. The Abandonment of the LSL's. This subject is covered in detail in Annexes F and G and the only additional discussion on the conclusions reached therein each on the respective Captains view of the importance of their loads. SIR TRISTRAM had 120 tons of ammunition aboard when she was abandoned and all of this was needed for the vital final push on PORT STANLEY; this factor played little part in the decision making process. SIR GALAHAD on the other hand was quick to recognise the importance of getting as many of the Army personnel ashore uninjured as possible; equipment could be replaced but trained soldiers take far longer.

14. The Overall View. Based on the evidence of Annex E and the factors given in paras 10, 11 and 12 above, the Board consider that CTG 317.0 was correct in making a timely and positive decision, in support of CTG 317.1's request, to send SIR GALAHAD to PORT PLEASANT off FITZROY on 8 Jun 82. The consequences of delay could have led to an equal number of, or even more, casualties than occurred in the LSL's at FITZROY due to later enemy action and weather. This decision was one which was weighed carefully on the morning of 7 Jun after the unsuccessful injection of all of the WELSH GUARDS battalion the night before, and when the RAPIER and Field Ambulance units became available to move forward; both were of prime importance to future operations.

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15. Having taken and executed the decision, events turned against its successful attainment due to a number of significant factors, each of which on its own might not have caused a disaster; however acting in concert they added to uncertainty and confusion, both of which played their part in the eventual outcome. However, one of these significant factors was the change of weather which allowed the enemy to positively identify events at FITZROY from an OP on the morning of 8 Jun. This supported their previous intelligence and led to an air strike being specifically tasked against the two LSL's. In planning the support activities at FITZROY, weather had not been considered as a governing factor although the presence of OP's was strongly suspected.

16. A significant factor affecting the number of casualties suffered was the time taken to offload SIR GALAHAD. This was governed by the assets available to offload and the state of the tide at the time of arrival. The offload was confused through the number of people involved in the decision taking but no negligence or slackness in its execution was apparent to the Board. Both ships would have been liable to attack even after the offload of WELSH GUARDS and 16 Field Ambulance.

#### CONCLUSIONS

17. The main conclusions that the Board arrive at are:

- a. CTG 317.0 fully assessed his tasks and priorities before sending SIR GALAHAD to PORT PLEASANT; however in doing so, he took a decision with considerable risk attached to it.
- b. The level of need as presented by CTG 317.1 justified the degree of risk involved.
- c. The decision to abandon SIR GALAHAD at an early stage after the attack was a correct one.
- d. The decision to abandon SIR TRISTRAM completely soon after the attack was unwarranted and errors of judgement are involved.

All remaining conclusions are at Annex B which also provides additional support for the conclusions arrived at above.

#### RECOMMENDATIONS

18. The Board recommends that:

- a. No further action be taken in respect of CTG 317.0 personally nor the Captain, RFA SIR GALAHAD. CTG 317.0 should be instructed to report as required by Annex E13 para 19 on one member of his staff.
- b. The Commander-in-Chief considers whether he wishes to take further action in respect of RFA SIR TRISTRAM (Annex F3).

Complete recommendations are at Annex B.


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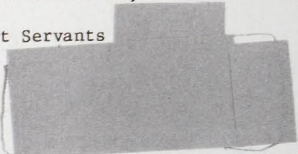
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19. The Board have been very ably supported in this work at both Empress State and Main Buildings by the Office Services Manager, the Audio Typing and Word Processing Pool, DGST(N) Sections 75C and 74A4, who have given excellent support in all that we have required.


20. Similarly the Board are very grateful to all the witnesses who mostly travelled considerable distances whilst on leave to assist. In particular we are most grateful to the witnesses from the Army who all answered our questions with co-operation and help despite the fact that this was a Naval inquiry.


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

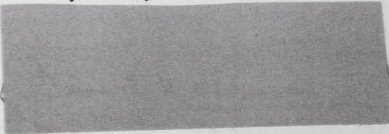
  
Technical Superintendent  
Royal Fleet Auxiliary

  
Surgeon Lieutenant Commander  
Royal Navy

  
Captain  
Royal Fleet Auxiliary

  
Commander  
Royal Navy

  
SEO  
Directorate of Supplies  
& Transport (Navy)  
Secretary

  
Captain  
Royal Navy  
President of the Board

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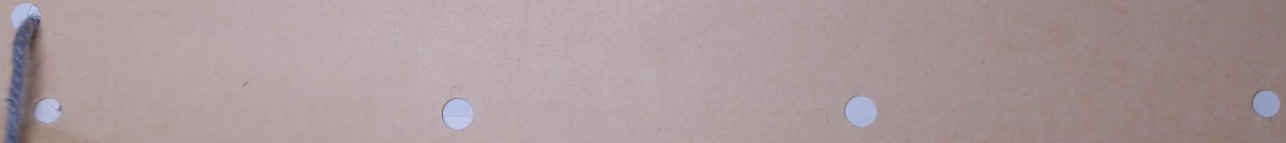
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ANNEXES

- A. Terms of Reference and Composition of Board of Inquiry.
- B. Conclusions and Recommendations.
- C.
  - 1. Map of EAST FALKLAND
  - 2. Map of FITZROY area
- D. List of Witnesses.
- E. Events Leading to the Attack on RFAs SIR TRISTRAM AND SIR GALAHAD.
- F. RFA SIR TRISTRAM.
- G. RFA SIR GALAHAD.
- H. Rescue and Salvage.
- J. Witnesses Statements and Transcripts.

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM &  
SIR GALAHAD  
ANNEX A dated Sep 82  
COMMANDER-IN-CHIEF, FLEET  
NORTHWOOD  
MIDDLESEX  
HA6 3HP  
Northwood 26161 Ext. 7157  
TELEX 23139

00520/B.X

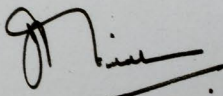
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30 June 82

LOSS OF RFAs SIR TRISTRAM AND SIR GALAHAD - BOARD OF INQUIRY

1. You are to assemble in Room 526, Empress State Building, London SW6, at 1000 on 12 July 1982 as a board of inquiry whereof Captain [redacted] Royal Navy, is to be the President and hold a full and careful investigation into the circumstances leading to and attending the disablement and abandonment of RFA SIR TRISTRAM under the command of Captain G R GREEN RFA and RFA SIR GALAHAD under the command of Captain P J G ROBERTS RFA, on 8 June 1982, calling before you such Service and civilian witnesses as are necessary and reasonably available to enable you to form correct conclusions.
2. Specifically you should ascertain and identify by questioning those involved and other available witnesses the matters listed in Annex A. Although the matters in Annex A are significant, they are not intended to be exhaustive and all other areas of inquiry deemed pertinent should be scrutinized.
3. The preliminary reports of the Masters, RFAs SIR TRISTRAM and SIR GALAHAD are at Annexes B and C respectively.
4. Should any information come to light which the President considers should be communicated urgently to me or to any member of my staff, such information is to be sent by any appropriate manner in anticipation of completion of the inquiry.
5. Lists of those on board the two ships on 8 June 1982 are at Annexes D and E.
6. The inquiry is to be conducted in accordance with the directions contained in QR RN Chapter 23, Appendix 38, and FLAGO 1619.
7. The report of the board is to be accompanied by minutes of evidence, or statements taken, and is to contain an expression of opinion on the degrees of adequacy of personnel, material and procedures.
8. The report is to be signed by each member of the board and is to be forwarded in original and unstapled form. The President is to deliver his report personally and brief me on the principal findings.
9. Shorthand writers and appropriate equipment will be provided by MOD Office Services as coordinated by MOD DGST(N)/DDSF.

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J D E FIELDHOUSE  
Admiral

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Ann<sup>o</sup>s:

- A. Specimen Matters for Investigation.
- B. Master, RFA SIR TRISTRAM's Report dated 18 June 82.
- C. Master, RFA SIR GALAHAD's Report dated 18 June 82.
- D. List of Personnel on board RFA SIR TRISTRAM on 8 June 82.
- E. List of Personnel on board RFA SIR GALAHAD on 8 June 82.

Distribution:

Captain [REDACTED] Royal Navy  
Captain [REDACTED] (Marine Superintendent), Royal Fleet Auxiliary  
Mr [REDACTED] (Technical Superintendent), Royal Fleet Auxiliary  
Commander [REDACTED] Royal Navy  
Surgeon [REDACTED] Royal Fleet Auxiliary

Information:

Chief Marine Superintendent, Royal Fleet Auxiliary Service  
Mr [REDACTED] (DDSF), Secretary to the Board of Inquiry

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SPECIMEN MATTERS FOR INVESTIGATION

Operational

1. The Task Group Commander's assessment of the threat before the attack.
2. The Task Group Commander's intentions and policies in force at the time of the attack.
3. The Task Group communications plan before the attack.
4. The location of ships of the Task Group.
5. Measures taken to protect RFAs SIR TRISTRAM and SIR GALAHAD.
6. The degree of readiness of protecting forces and the ships, before, during, and after the attack.
7. Any major defects in machinery, systems or equipment immediately before the attack.
8. The damage control state and condition immediately before, and at the time of, the attack.
9. The nature and sequence of events before, during and after the attack.
10. Ship's cargo and personnel loading, and its relevance, at time of the attack.

Design/Maintenance

11. The adequacy of the damage control and fire fighting organisation, procedures, equipment and training.
12. Any problems arising from the design and layout of the ship and her machinery and equipment, with particular regard to any hazardous materials.
13. Any shortcomings in machinery operating procedures.
14. The influence, if any, of the material state of the ship on events.

Environmental

15. Any evidence of stress affecting the ship's company before the attack.
16. Any evidence of efficiency being reduced because of shortage of sleep, or length of time closed up at action and defence stations, or any other cause.

Training

17. The adequacy or otherwise of individual training and preparation of personnel.
18. The adequacy or otherwise of whole-ship training and preparation of personnel.

Administrative/Medical

19. Whether those trained in First Aid were adequate in numbers and in expertise.
20. Whether First Aid parties were closed up.
21. Whether access to the Sick Bay and First Aid stations was affected by damage.

22. Whether any casualties were treated.
23. Whether any clinical diagnoses of causes of death were established.
24. Whether man-made fibres rather than cotton were worn by personnel, and whether these fibres contributed to burns.
25. Any evidence of toxic fumes arising from electrical cable insulation, plastics, cushions, etc.

Rescue and Salvage

26. Brief narrative of immediate rescue assistance by other units to SIR TRISTRAM and SIR GALAHAD and their ships' companies and other embarked personnel.
27. Summary of aircraft, stores, equipment, materials, etc salvaged from the ships.

ALL INFORMATION CONTAINED  
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DATE 08-11-2011 BY 60322 UCBAW/STP

Office of  
Commander-in-Chief, Fleet  
Northwood  
Middlesex  
HA6 3HP  
Northwood 26161 Ext. 7157  
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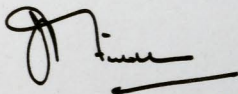
Captain [REDACTED], Royal Navy  
President  
Board of Inquiry

21 July 82

BOARD OF INQUIRY - RFAs SIR TRISTRAM AND SIR GALAHAD

Reference: CINCFLEET's 00520/8.X dated 30 June 82.

Further to the reference, Surgeon Lieutenant Commander [REDACTED] Royal Navy will replace Surgeon [REDACTED] Royal Fleet Auxiliary as a member of the board of inquiry into the disablement and abandonment of RFAs SIR TRISTRAM and SIR GALAHAD with effect from 22 July 82.



J D E FIELDHOUSE  
Admiral

Information:

The Chief Marine Superintendent, Royal Fleet Auxiliary  
Service

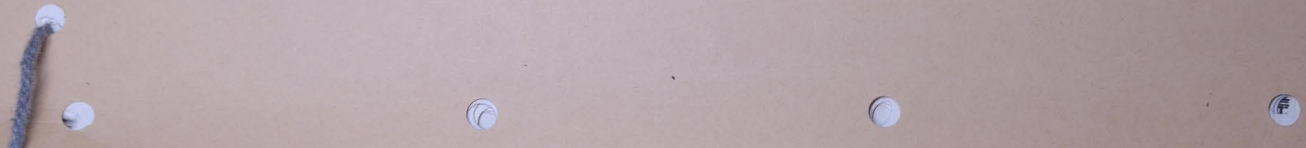
Surgeon [REDACTED] Royal Fleet Auxiliary

Surgeon Lieutenant Commander [REDACTED] Royal Navy

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ANNEX B DATED SEPT 82CONCLUSIONS AND RECOMMENDATIONS

1. The Conclusions of the Board are contained at Appendix 1. After each Conclusion the word or letters in brackets indicate its Annex of origin.
2. The Boards Recommendations are at Appendix 2 with place of origin also shown.

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APPENDIX 1 TO  
ANNEX B  
DATED SEPT 82

CONCLUSIONS

1. CTG 317.0 fully assessed his tasks and priorities before sending SIR GALAHAD at PORT PLEASANT; however, in doing so, he took a decision with considerable risk attached to it. (Main).
2. The level of need as presented to CTG 317.0 justified the degree of risk involved. (Main).
3. The decision to abandon SIR GALAHAD at an early stage after the attack was a correct one. (Main).
4. The decision to abandon SIR TRISTRAM completely soon after the attack was unwarranted and errors of judgement are involved. (Main).

Command and Control

5. The Task Organisation was satisfactory and was operated sufficiently flexibly throughout the operation. (E2).
6. Command by negotiation can work well and was necessary in OPERATION CORPORATE; however it is harder to operate as the pace of operation quickens. (E2).
7. The responsibility for sailing SIR GALAHAD to FITZROY rested with CTG 317.0 on 8 Jun to meet the advised and co-discussed needs of CTG 317.1. (E2).
8. Neither LSL was confused as to whom was its superior commander. (E2).
9. The lack of signalled or written orders can be tolerated in a steadily moving situation but the effects are far more marked in a hot moving situation such as that pertaining through 6/7/8 Jun. (E2).
10. If Commanders and their staffs spend considerable periods of time away from their HQ's then the system of briefing and debriefing both upwards and downwards must be exemplary. (E2).
11. The lack of direction on which doctrine was in force was not of major significance until forces unfamiliar with amphibious operations arrived. Thereafter it gained in importance and added to the difficulties on 8 Jun. (E2).
12. No Initiating Directive was issued by CTF 317. (E2).
13. The principles of command were based on those in ATP 8, ATP 36 and ATP 37, and worked to a satisfactory level during the Assault Phase at SAN CARLOS. (E2).

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14. No Termination signal was made, nor were any further instructions given by CTF 317 as required by the Tactical Doctrine. This resulted in a loose organisation of command once the TA was established. (E2).
15. CTG 317.0 was less clear on his role and authority after the assault phase completed. (E2).
16. The further away from SAN CARLOS that support shipping and land forces moved, the greater became the scope for confusion of responsibilities. (E2).
17. At FITZROY on 8 Jun the position of each officer of authority was not clearly specified by CTG 317.0, CTG 317.1 or CTU 317.1.2. (E2).
18. The Board could not identify a major deficiency of Command and Control by CTG 317.0, CTG 317.1 or CTG 317.8 which led to the events at FITZROY on 8 Jun. (E2).
19. The Board identified a significant deficiency by CTG 317.0 staff with respect of command and control. If more consideration had been given to the address and content of the signal to SIR GALAHAD telling her to sail, then correct preparations for her reception at FITZROY would have been achieved and could possibly have led to the WG disembarking much earlier. (E2).
20. The officer responsible for the deficiency above is considered to be S00/CTG 317.0; he was the most senior officer to whom the matter was referred. (This matter is discussed further in Annex E13 and recommendations made there.) (E2).

THE NEED TO TRANSPORT TROOPS ALONG THE SOUTH COAST

21. The use of shipping for the insertion of troops was justified because:
  - a. A rapid military advance and adverse weather conditions demanded reinforcements at a rate not achievable by marching.
  - b. Airlift by helicopter was not possible due to a basic shortage of assets caused by the loss of ATLANTIC CONVEYOR, the need to supply 3 Cdo, and poor flying conditions.
  - c. A delay in establishing Troops and 5 Bde BMA would reflect directly on the speed of advance on PORT STANLEY. (E3).

THE DEVELOPMENT OF PLANS

22. It was only after examining and attempting other means of moving troops forward that it was seen necessary to use sea transport of men as well as their logistic supplies. (E4).

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23. The first plan to move men by sea was promulgated on 3 Jun 82. (E4).
24. Given that surprise, lowering cloud, and boldness were present, the first plan to go all the way to BLUFF COVE area was a good one. A first light insertion would not give sufficient time for the Argentinians to react so that an air attack from the mainland could intervene. However there was an element of risk and this plan was ruled out for political reasons. (E4).
25. Modification to plans became faster and more complex as time went by. (E4).
26. CTG 317.8 statement concerning SIR TRISTRAM being "left to her own salvation" did not engender a feeling of confidence or safety in the 2 LSLs concerned. (E4).
27. The plan for insertion of LCUs from a stand-off distance in the hours of darkness was the only practical alternative to meet the constraints imposed by CTF 317. (E4).
28. Once units other than infantry and light vehicles required moving urgently to FITZROY area then an LPD was no longer suitable under the prevailing operating conditions; an LSL was the only ship for the task. (E4).
29. The political and military pressures mounted rapidly in the period 3-7 June leading to much hot planning and crisis management; all of these gave rise to the decision to send SIR CALAHAD and for her to be in FITZROY on the same day as SIR TRISTRAM. Risks were not underrated and the military requirement justified the use of 2 LSLs in restricted waters. (E4).

AIR DEFENCE

30. The Board is satisfied that CAP was being operated correctly and consider the action taken in response to the raid in SAN CARLOS to have been justified. (E6).
31. The decision to use FITZROY before deploying Rapier was taken consciously for military reasons and must be accepted as a reasonable risk in war bearing in mind the other priorities for Fire Units at SAN CARLOS and TEAL INLET. (E6).
32. The reliability of Rapier within the first 24 hours of resiting gives cause for concern and effort should be made to rectify this shortcoming. (E6).
33. Commanders lacked an understanding of the capability of Rapier to protect units outside the area enclosed by the Fire Units. (E6).
34. The Board agree with the decision not to use a guardship for the LSLs in view of the doubtful increase in protection and further units placed at risk. (E6).

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35. The failure to understand the operation of LAAWC by the Captain, SIR TRISTRAM and thereby the failure of the Officer of the Watch to respond to an air raid warning may have contributed in a small way to the success of the enemy's attack on the LSLs. (E6).

36. Guidance on the siting of embarked Blowpipe systems should now be included in the LSL Handbook. (E6).

THE LANDING BEACH AND ASSETS AT FITZROY

37. The beach at FITZROY was chosen with considerable care, a limited beach survey was completed but in fact was the only suitable beach in that vicinity. (E7).

38. No one knew before the arrival of the ABU that the beach would not be workable continuously throughout any 24 hour period. (E7).

39. The planned composition of the ABU was satisfactory but in the end the Michigan tractor was unusable due to terrain. (E7).

40. The OIC ABU did not inform anyone outside the FITZROY area of the limitation in beach usage. It was in fact the responsibility of 5 Inf Bde Advanced HQ to do so, but this did not occur. (E7).

41. Commanders at the planning level were unaware that the beach could only be used for the offload of supplies for 16 hours of any 24 hour period. It did not become a major matter of importance however until the WG were to be disembarked from SIR GALAHAD. (E7).

42. A shortage of MHE was more critical to the offload of SIR TRISTRAM than a shortage of craft. However, the BMA was well placed close to the beach. (E7).

43. It was not possible to complete the offload of SIR TRISTRAM on 7 Jun and sail her the night before SIR GALAHAD arrived. (E7).

44. Landing craft assets on 7 Jun were more than adequate for the offload of SIR TRISTRAM. (E7).

45. If 5 Bde Advanced HQ had known that SIR GALAHAD was to arrive on 8 Jun they may well have reconsidered their decision to send F4 to GOOSE GREEN and kept her to assist in the offload of both ships. (E7).

46. More than 1 LCU and Mexeflote were needed to ensure the rapid disembarkation of personnel, stores and equipment from both SIR GALAHAD and SIR TRISTRAM. That this was not so is due to the fact the 5 Inf Bde did not know she was coming; nor what she was carrying. (E7).

47. It is considered that no one individual was to blame for these events; each one, small in its way, added up to a very difficult situation. What was unacceptable was that poor communications from FITZROY to CTG 317.0 and CTG 317.1 prevented an adequate flow of information. (E7).

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48. That looseness of nomenclature (between the names FITZROY and BLUFF COVE) crept in and that the significance of this was not apparent to staff officers and those in relevant command positions was a contributory factor to the WC being on board SIR GALAHAD at the time of the attack.

THE WELSH GUARDS

49. In the opinion of the Board the decision by OCWG not to proceed with his cross country march to DARWIN was reasonable. (E9).

50. Resulting from 49. above, and the lack of helicopter resources, there was a clear necessity to move the WC by sea. (E9).

51. Major SAYLE correctly assumed the duties of OC Troops and carried out the duties associated with this well. (E9).

52. Major SAYLE was not aware on 8 Jun that FITZROY Bridge was passable to infantrymen. (E9).

53. The situation as seen by Major SAYLE at 081205 was very relevant in that his last orders were:

- a. To land at BLUFF COVE.
- b. To allow no separation of his men or equipment;

and that he knew his route from FITZROY by land would entail a 15 mile march. Taking into account that he also believed the landing craft would return relatively quickly then the Board consider his actions to have been justified. (E9).

OFFLOAD OF SIR GALAHAD

54. There was no one major failure at FITZROY which led to the WELSH GUARDS being on board SIR GALAHAD when the attack occurred. The factors listed in paras 55-60 below all contributed to a confused situation. (E10).

55. The weakness in Command and Control from 5 Brigade significantly affected the time for offloading the Welsh Guards, and thereby affected the casualties suffered. (E10).

56. The inability of CTG 317.0 to communicate with the Beach Master compounded this failure if it is accepted that ATP 36 is strictly applied, although no acknowledgement to this document has been given throughout the Inquiry. (E10).

57. The decision not to offload the Welsh Guards is accepted as reasonable in view of the knowledge available at the time. (E10).

58. The lack of a clear understanding of the responsibilities of those ashore controlling the offload had no effect on the situation in the event. (E10).

59. The limited assets and the conditions of the beach rather than a lack of urgency caused the relatively slow offload. (E10).

60. The defect on the LCU ramp equipment had some influence on the proceedings but its overall significance cannot be assessed. The response to this defect was satisfactory. (E10).

#### COMMUNICATIONS

61. Signal traffic load caused an increase in handling time to greater than that used previously for planning purposes. (E12).

62. The ABU cannot be controlled by the Naval Force unless in direct personal contact with a ship with a suitable communications fit. (E12).

63. Communications with the Command ship must not be susceptible to her movements. (E12).

64. The arrangements for promulgating air raid warning throughout all Forces was good. (E12) (but see E6 para 22 for LSL listening).

65. Information derived from insecure VHF circuits used in the control of logistics was a significant contributor to a raid being mounted on the LSLs in FITZROY. (E12).

#### STAFF COMPOSITION, PERFORMANCE AND TRAINING

66. The cohesion of CTG 317.0 staff was reduced by the speed at which it was expanded and the lack of experience of working together before operations started. (E13).

67. Once operations become fast and furious staff officers are naturally kept very busy in their own particular field; cross fertilisation of ideas or plans become more difficult. (E13).

68. There was a lack of amphibious training prior to officers taking up their appointments. Those officers appointed to the staff at short notice only had a limited knowledge of amphibious operations for the most part. (E13).

69. Stress and fatigue affected the performance of [REDACTED] to the extent that by half way through CORPORATE he was exhausted and of little use to the staff thereafter. The degree of competence of this officer is open to question and additionally the Board consider that he made two errors of judgement during the night 7/8 Jun in that:

- a. He did not instruct the Duty Staff Officer to inform CTG 317.0 of SIR GALAHAD's signal DTG 080015.

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b. He did not verify the content of SIR GALAHAD's signal himself nor the adequacy of the draft reply. (E13).

70. The justification for placing [redacted] in a difficult and unprepared position is questionable. (E13).

71. COMAW's staff did well overall to compete with a very wide and demanding range of tasks. (E13).

RFA SIR TRISTRAM

72. In exercises and drills SIR TRISTRAM produced satisfactory results; however a much better standard of confidence and ability in the whole ship would have accrued by regular top management meetings to brief all departments, monitor standards and resolve mutual problems. (F2).

73. The confusion over callsigns and the lack of knowledge of the workings of tactical circuits contributed greatly to the OOW ignoring the information he heard on the AAWC net. However the Board feel that it was extremely naive of [redacted] to believe that an air attack going on only 35 miles away could have no bearing on his own ships safety. (F2).

74. It is the Board's opinion that despite apparent conflicting testimony the Main Engines were on immediate notice and SIR TRISTRAM was in state of readiness consistent with the defence state in force at the time.

75. The precise damage attributed to individual weapons cannot be stated with confidence. The damage was caused by 3x500 lb bombs:

a. One bomb entered 25 Tank Stbd and passed through without detonation.

b. One bomb passed across the Tank Deck entered 25 Tank Port where partial detonation occurred blowing out, a large plate on the port quarter and causing damage to the ford bulkhead.

c. One bomb exploded under 25 and 26 Tanks rupturing the ships hull. It is believed this bomb also contributed to the combined effects of the other 2 bombs. (E3).

76. Fire damage to RFA SIR TRISTRAM could have been avoided had elementary damage control and fire procedures been followed. (F3).

77. The over-riding consideration in the minds of the Captain and Officers was that they had an unexploded bomb on board which might explode at any minute. (F3).

78. The Captain became almost mesmerised by the sight of SIR GALAHAD burning and as a result his ability to react and influence decisions concerning the safety of his own ship were impaired. (F3).

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79. The Captain acted entirely on the information given to him by the [REDACTED] and he acted solely on this advice. (F3).
80. The [REDACTED] carried out a reasonable search aft and discussed his findings with the 2nd Engineer before he reported to the Captain but the assessment he gave the Captain differed in that he stated there was a fire aft when there was no proper evidence to support this. (F3).
81. [The [REDACTED] made an error of judgement in his assessment that there was a fire burning aft. (F3).
82. The decision to move the ships company forward was correct in circumstances but a fire party should have remained to patrol the aft parts regardless of whether a UXB was present or not. (F3).
83. The decision to abandon ship was premature; the Captain might not be faulted for evacuating unnecessary personnel to shore in case of further hazard but he should still have left a party on board to fight fires or deal with other consequences. (F3).
84. The Captain at one time intended to return to the ship at a later stage but this never happened. (F3).
85. The Captain of SIR TRISTRAM did:
- (i) make an error of judgement in sending away his two deck officers from the Bridge soon after the attack, thus seriously reducing his ability to control events.
  - (ii) make a serious error of judgement in abandoning ship completely rather than evacuating it and leaving a small fire attack group behind. (F3)
86. [The [REDACTED] made an error of judgement in that he did not volunteer information he had gleaned below decks, and not giving the Command the benefit of his specialist knowledge. (F3)
87. [The [REDACTED] made an error of judgement in informing the Captain that there was a fire in the steering flat, to which he could not gain access to. (F3).
88. [The [REDACTED] made a further error of judgement in that he decided upon complete evacuation of the after part of the ship rather than leaving a few personnel in that area to monitor events. (F3).
89. The overall performance of the Chinese crew was highly unsatisfactory and their employment in fire and repair parties is hazardous. (F3).

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RFA SIR GALAHAD

90. Whereas there were shortcomings in certain areas, Captain ROBERTS by his policy of involvement of others in the formulation of new plans and organisations, and the ready flow of information that existed via the daily Head of Department meetings produced a well led ships company that acted and thought of themselves as a team. (G1).
91. It is concluded that a greater liaison between the communication departments of SIR GALAHAD and SIR TRISTRAM on arrival at FITZROY would have resulted in both ships listening to the correct frequency. It might also have resolved the mistaken impression SIR TRISTRAM had that she would be given a specific ARW for the FITZROY area, addressed by her own personal callsign, which led the OWW to disregard the ARW Red heard shortly before the attack. (G2).
92. In all other respects SIR GALAHAD was at the correct state of readiness. (G2).
93. RFA SIR GALAHAD was hit by 3 x 500 lb HE bombs starboard side aft; none of these bombs exploded. (G3).
94. The ship was also struck by a short burst of 30mm cannon fire in the vicinity of the Engineers Office and possibly the Troops Cafeteria. (G3).
95. Three types of fire quickly established themselves in the ship:
- (i) A fierce diesel fuel fire in the funnel, funnel uptakes and upper part of the Engine room.
  - (ii) A fireball followed by fire and cordite explosions in the stern trunk of the tank deck.
  - (iii) Miscellaneous small fires started as a result of the effects of (i) and (ii) above. (G2).
96. Deflagration, rather than detonation, of one or more weapons caused the immediate effects of burns and thick smoke. The path of unexploded bombs passing through a ship cannot be accurately assessed after the point when its passage has been positively identified by a witness. Therefore it is not possible to state categorically which weapon was exactly responsible for what damage. (G3).
97. Deflagration was the cause of the damage, fire, burns and injuries on the Tank Deck, and in its immediate vicinity. (G3).
98. The most likely cause of the diesel fuel fire in the funnel was the rupture of the 500 gallon diesel header tank in the port engine uptake at poop deck level; this rupture was probably caused by the passage of weapon 3 in its path through the ship. (G3).

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99. After very considerable deliberation the Board cannot come to firm conclusions as to what caused each individual area of damage described in testimony given by witnesses. (G3).

100. The Captain of SIR GALAHAD assessed the situation rapidly and correctly. (G3).

101. With power gone, an incredibly rapid spread of smoke, and very limited access to BA, no major fire fighting effort could be achieved and the order to abandon ship was correct in the circumstances. (G3).

LSLS GENERAL

102. Furniture and mattresses were of suitable standard compatible with habitability. (G4).

103. Lack of BA external to accommodation hindered search for survivors and any subsequent fire fighting effort in SIR GALAHAD. (G4).

104. Provision of ELSA throughout the ship accessible not only to Engine Room personnel but to all ships company and embarked troops could have contributed in saving further lives. (G4).

105. The present system of launching valise type liferafts is not conducive to the rapid evacuation of the ship in an emergency and is therefore not acceptable. (G4).

106. Communication equipment was outdated in one case and the fit was only just adequate for essential comms with no redundancy to allow for maintenance or repair. (G4).

107. The use of aluminium in construction is acceptable, as alternatives have severe operational penalties. (G4).

108. Partition bulkheads consisting of asbestos filled materials are a hazard and ideally should be replaced in existing ships. This type of material should not be used in new construction. (G4).

109. External wooden doors were adequate but hinges and locking arrangements were weak points. (G4).

110. All cabin doors were liable to jam when subjected to associated weapon damage; alternative methods of escape must be provided. (G4).

111. Existing Roller Shutter fire doors operated effectively and no replacement is required. (G4).

112. Due to operational considerations the AVCAT tank cannot be resited. Remote starting of the resupply pump by flight deck team at the ready use tank is supported. (G4).

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113. The siting of the Alternator fuel header tank gives the Board cause for great concern; although it is clear that this problem is recognised, the Board in the light of experience gained, support a review of the situation. (G4).

114. Foam tubes to assist in fire fighting is essential for compartments such as the steering gear and compartments containing inflammable stores which have only one access. (G4).

115. No evidence supported that breaching of firemain was in any way a problem; desirable enhancement of the system is not considered essential. (G4).

116. The isolation system fitted to LSLs is adequate for the tasks they have to undertake. (G4).

117. The emergency lighting system is comprehensive and effective, no lighting system could have provided visibility in the conditions of smoke that existed in SIR GALAHAD. (G4).

G1441

118. Certain relaxations of peacetime standards and regulations must be acceptable as in the case of tank deck lighting if Military Commanders are to achieve their aims in war. (G4).

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~~CONFIDENTIAL~~~~STAFF IN CONFIDENCE~~APPENDIX 2 TOANNEX BDATED SEPT 82RECOMMENDATIONS

1. No further action be taken in respect of CTG 317.0 personally, nor the Captain, RFA SIR GALAHAD. CTG 317.0 should be instructed to report as required by Annex E13 para 19c on one member of his staff. (Main).
2. The Commander in Chief considers whether he wishes to take further action in respect of RFA SIR TRISTRAM. (Main).
3. Further study of the Command and Control Organisation for OPERATION CORPORATE be undertaken to ensure that all lessons are fully learnt; this Board was not tasked to do this in its entirety. (E2).
4. If the Royal Navy is to be tasked to carry out national amphibious operations of the nature of CORPORATE, then either national doctrine must be developed or the relevant ATP's require review so as to cover the requirements. (E2).
5. The reliability of Rapier on initial installation in a fire position needs further investigation. (E6).
6. Sea and land commanders involved in the planning and execution of amphibious operations be given better guidance in the capability of Rapier to defend both shore and amphibious units. (E6).
7. RFA personnel be better trained in Air Raid Warning procedures and limitations in giving accurate raid warnings. (E6).
8. Guidance on the employment and siting of BLOWPIPE in RFA's be included in the LSL Handbook. (E6).
9. Units given control of amphibious units must be trained to have full knowledge of their capabilities and limitations. (E7).
10. Units given control of forward amphibious units must have compatible and working communications with the amphibious commander. (E7).
11. In future operations of this nature more MHE is required to be available to ABUs. (E7).
12. In future joint operations of this nature much more attention must be paid to the clear definition of support responsibilities both within a Task Group, and between Task Groups. (E10).
13. The failure of relevant information reaching 5 Brigade's BMA at FITZROY should be represented to the Army for further investigation. (E10).

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14. The significance of extended handling times on communications be studied in the overall evaluation of Operation CORPORATE. (E12).
15. The provision of portable secure HF communications to ABUs and Landing Craft be implemented. (E12).
16. Further study be made on the dependence of communications between ship and land forces at HF frequencies. (E12).
17. Portable secure VHF voice communications equipment be provided for the logistic control circuits. (E12).
18. Officers appointed to amphibious warfare appointments should undertake the appropriate courses before joining. (E13).
19. The future requirement for officers generally to be trained in AW be established. (E13).
20. COMAW be invited to comment further on the performance of [REDACTED] (E13).
21. The maintenance of BA in RFA's is a skilled task and should not be undertaken by persons unqualified to do so. All personnel responsible for the maintenance of BA should attend a suitable course to qualify them to undertake competently these responsibilities. (F1)
22. Greater emphasis to be placed on management techniques and leadership training in the preparation of Officers for Command of RFA's or as Heads of Departments. (F1)
23. The Commander-in-Chief consider what action, if any, be taken in respect of the alleged errors of judgement by the Captain, [REDACTED] of RFA SIR TRISTRAM. (F3)
24. Further consideration be given to the advisability of manning RFA vessels in forward operational areas with Chinese crews. (F3)
25. A damage control organisation for RFAs that includes an action stations state should be laid down, and this should be included and exercised during the Basic Operational Sea Training carried out by Flag Officer Sea Training at PORTLAND. (G1).
26. When on exercises Royal Fleet Auxiliaries should go to the action states as dictated by the tactical situation. (G1).
27. The Captain of any RFA should undergo a tactical course at the Maritime Tactical School HMS DRYAD and that designated Captains of LSLs should have a basic knowledge of AW. (G1).
28. Any Officer of the Watch of an RFA should have a basic tactical knowledge and be familiar with the tactical publications. (G1).

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29. All RFA Officers regardless of specialisation should receive first aid training early in their careers. This should comprise a course of at least two days with particular emphasis on practical aspects. This should be reinforced by regular exercises involving dummy casualties. (G1).
30. Training of Chinese crew or indeed any rating designated as first aid party should be undertaken by the ships Medical Officer, who should satisfy himself as to their performance. (G1).
31. The present establishment for LSLs of six Neil Robertson stretchers should be revised to eighteen. At present there are no stretchers readily available for evacuation from the troops accommodation spaces, although these dormitories can sleep more than 300 men. One stretcher should be fitted in A1 and A2 dormitories, and three should be sited in the port and starboard troop alleyways at the top of the ladders leading to the lower dormitories. One should be stowed at each end of the tank deck, and one each side in the crews accommodation alleyways. (G1).
32. Additional BA sets be sited externally on the upper decks of LSLs. (G4).
33. ELSA be carried in sufficient quantity to cover all personnel embarked in LSLs. (G4).
34. A study be carried out into changing the present valise type liferafts in LSLs, and resiting them in positions in the quick release mode. (G5).
35. A review of the communications fit of LSLs be undertaken.
36. Asbestos filled materials should not be used in new construction RFAs, and that existing ships continue the policy of replacement as time on an opportunity basis exists. (G4).
37. External doors in LSLs to have hinges and securing arrangements strengthened. (G4).
38. All LSL cabin doors to be fitted with escape panels. (G4).
39. The feasibility of fitting remote start facility to AVCAT resupply pump from the bulk tank, be progressed in LSLs. (G4).
40. A review into the resiting of the Diesel Alternator fuel header tank in LSLs be undertaken. (G4).
41. Remote foam tube accesses be fitted to the steering flat one either side in way of Fridge Flat handling space and the Bonded Store access lobby. Similar compartments used for the temporary storage of flammable materials, ie. paint store. Should also be considered. (G4).

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX C DATED 23 SEPT 82

MAPS & PLANS

1. The following maps/plans are included for reference:

Annex C.1 Map of East Falkland

Annex C.2 Map of Fitzroy/Bluff Cove

53  
CAP  
STNHMS  
EXETER

Port San Carlos

San Carlos  
WaterEAST  
FALKLANDCantera  
House

Goose Green

Darwin

Swan Inlet House

LAFONIA

+  
INTREPID  
LAUNCH LCU's  
ø6ø43ø JUN



EAST FALKLAND

n Carlos

Teal

Mount Kent

Mount Challenger

Bluff Cove

Fitzroy

Swan Inlet House

BC17

155mm  
HOW ENVELOPE

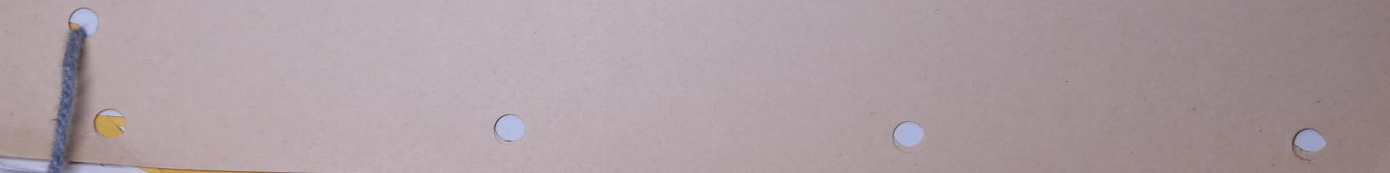
+  
FEARLESS  
LAUNCH LCU's  
070300 JUN

57  
CAP  
STN

EXOCET  
ENVELOPE  
FROM 2 JUN

+  
INTREPID  
LAUNCH LCU's  
060430 JUN

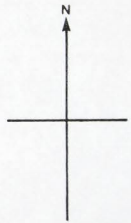
1/4



# PORT FITZROY

WG  
- ASSEMBLY  
AREA

SG  
Bluff Cove  
Settlement  
ASSEMBLY  
AREA



PORT FITZROY

Route to Bluff Cove

33C Rapier +

31A Rapier +

16FA  
proposed  
location

32D Rapier +

Fitzroy Settlement  
5Bde Adv HQ

32A  
Rapier

ABU + Ammunition  
Dump

Entrance  
0.6c wide  
Min Charted  
Depth 14ft

Beach for landing  
pallets

PORT PLEASANT

Direction of  
air attack

Sir  
Tristram

Sir  
Galahad

PLEASANT ISLAND

Route to Fitzroy

Min Depth  
this Channel  
= 12ft

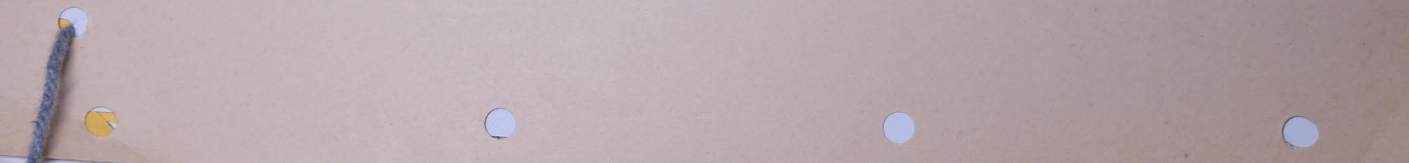
SHIPS OF FRIGATE DRAUGHT AND ABOVE  
CANNOT ENTER PORT PLEASANT

BC17  
+  
060510 JUN



C-3

1/6



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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX D DATED 23 SEPT 82

LIST OF WITNESSES

1. The following attended the Board of Inquiry:

COMMAND AND LAND FORCES

COMAW CDRE M CLAPP [REDACTED]

FOFI [REDACTED]

CLIFF 1 MAJ GEN J J MOORE [REDACTED]

1ST BAT  
WELSH  
GUARDS

MAJ G SAYLE [REDACTED]

FCDT [REDACTED]RAMC [REDACTED]T BATTERY [REDACTED]

5TH INF BRIG M WILSON  
BRIGADE [REDACTED]

LAND  
FORCES [REDACTED]

In addition statements were taken from 110 No Welsh Guards and 13 No 16 Field Ambulance Brigade.


SIR TRISTRAM

CAPT G R GREEN [REDACTED]


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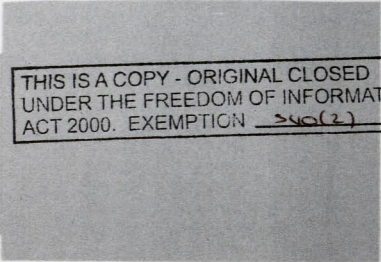
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Gun CrewAir DefenceRCT DetachmentMedicalRadio Ops

In addition statements were taken from 38 Chinese crew.

SIR GALAHADCAPT P J ROBERTS


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Gun CrewRCT DetachmentMedicalRadio OpsAir Defence

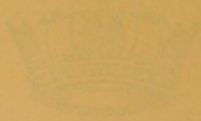
In addition statements were taken from 41 Chinese crew.

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2. The following were called to the Board of Inquiry to give advice:

 NAVAL LAW  
FIRE RESEARCH STATION BOREHAMWOOD  
FIRE RESEARCH STATION BOREHAMWOOD  
DG SHIPS BATH  
ADMIRALTY MARINE TECHNOLOGY  
ESTABLISHMENT DUMFERMLINE

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REPORT TO  
COMMANDER-IN-CHIEF, FLEET  
OF THE BOARD OF INQUIRY  
INTO THE LOSS OF

RFA's SIR TRISTRAM  
& SIR GALAHAD

IN JUNE 1982

ANNEX E

SECRET

1/h

BOARD OF INQUIRY  
LOSS OF AIRCRAFT  
SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E JUNE 23 1982

REPORTS LEADING TO THE LOSS OF AIRCRAFT TRISTRAM AND SIR GALAHAD



Paragraph 21 - Assessment of the situation.  
Paragraph 22 - General conclusions.  
Paragraph 23 - The need to improve training along the Southern Flank.  
Paragraph 24 - The development of plans to reinforce the Southern Flank.  
Paragraph 25 - GENERAL Remarks.  
Paragraph 26 - AIR Cadets.  
Paragraph 27 - Training, Test and Evaluation.  
Paragraph 28 - Summary.  
Paragraph 29 - Training, Test and Evaluation.  
Paragraph 30 - Summary.  
Paragraph 31 - Staff Comments, Recommendations and Training.

**REPORT TO  
COMMANDER-IN-CHIEF, FLEET  
OF THE BOARD OF INQUIRY  
INTO THE LOSS OF**

**RFA's SIR TRISTRAM  
& SIR GALAHAD**

**IN JUNE 1982**

**ANNEX E**

SECRET

SECRET

BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E DATED 23 SEPT 82

EVENTS LEADING TO THE ATTACK ON RFA SIR TRISTRAM AND RFA SIR GALAHAD  
AT FITZROY, FL, ON 8 JUN 82

- Annex E1 Assessment of the threat to FITZROY.
- Annex E2 Command and Control.
- Annex E3 The need to Transport Troops along the Southern Flank.
- Annex E4 The Development of Plans to Reinforce the Southern Flank.
- Annex E5 GENERAL Narrative.
- Annex E6 Air Defence.
- Annex E7 Landing Beach and Landing Craft at FITZROY.
- Annex E8 Destination for the Offload of SIR GALAHAD.
- Annex E9 The 1st Btn WELSH GUARDS.
- Annex E10 Offload of SIR GALAHAD.
- Annex E11 Attack Narrative.
- Annex E12 Communications.
- Annex E13 Staff Composition, Performance and Training.
- Annex E14 Weather, Tidal and Sidereal Data.



SECRET

BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
 ANNEX E1 DATED 23 SEPT 82

INTELLIGENCE - THE ASSESSMENT OF THE THREAT TO FITZROY

1. Introduction. The Board took the view that it needed only to assess the threat in support of forces likely to be sent to FITZROY or actually to the close vicinity of it such as BLUFF COVE or the anchorage in PLEASANT SOUND where the LSL's were situated on 8 Jun.

ARGENTINIAN FORCES

2. Front Line Troops. By 8 Jun the enemy forces around STANLEY were basically holding a position which runs north from LONG ISLAND MOUNT South through MOUNT VERNEY, MOUNT KENT to MOUNT CHALLENGER and then along the high ridge back to STANLEY towards the east. A1077

3. An OP on MT CHALLENGER would on a good day have a clear view of what was happening in BLUFF COVE or FITZROY. The enemy had the ability to have patrols or OPs forward of this on a temporary basis. OPs were considered to have a reporting facility only and to be incapable of forward aircraft control. A1078 A1079 A1086

4. 105mm Howitzers. Enemy artillery was in a position so that they could engage the ground troops just to the east of where the assembly areas for both Guards battalions were placed at BLUFF COVE. FITZROY was out of range.

5. 155mm Howitzers. These were deployed just to the east of the SAPPER HILL area it was thought primarily for anti NGS shipping purposes; they consisted of Argentinian barrels mounted on a French built chassis and had a range of 17,600 metres. Again FITZROY and the sea approach from the SW was out of range. See map at Annex B. A1080 A1081

6. Land Based EXOCET. Between 27 May and before 2 Jun, the enemy had deployed a land based EXOCET system; the exact location was not found but was believed to be roughly in the vicinity of HORSE POINT. It had an assessed range not in excess of 22 miles; this gave it significant coverage to seaward to the S/SW/SE and E. The EXOCET danger area is shown on the map at Annex B. A1082 A1083

7. Aircraft. The types of enemy aircraft capable of striking at targets in the FITZROY area are shown at Appendix 1 to this Annex. It should be noted that the mix of bombs means:

- a. 1 x 2000 lb bomb.
- b. 2 x 1000 lb bomb.
- c. 4 x 500 lb bomb.

~~SECRET~~

Cannon fire was used against HMS PLYMOUTH and RFA SIR GALAHAD in SAN CARLOS water. There is no record of rockets ever being used against ships.

8. Sea Mines. By 7 Jun, the enemy had the capability of laying sea mines in FALKLAND waters.

JMJC

9. ELINT. By 7 Jun it was assessed that the enemy were intercepting UK circuits and were thus able, in some cases, to be aware of future intentions. Logistic circuits were considered to be particularly vulnerable.

JMJC

INTELLIGENCE RECEIVED ON OR SOON AFTER 8 JUN

10. General. The Argentinians had detected night amphibious helo operations 12-15 miles SW of STANLEY on the night 6/7 Jun. The enemy were very sensitive to the likelihood of further UK amphibious operations to the SW of STANLEY before the final push and were alert to some of what was going on. It was on this same night that INTREPID's LCUs were fired on by the enemy and an aircraft flew close to them in the entrance to CHOISEUL SOUND.

A0783

11. Particular Intelligence to the Inquiry. A report from a Secret and sensitive source reveals that the Argentinians were aware of the night operations of 6 and 7 Jun which gave indication that a UK amphibious build up was about to take place in the FITZROY area. By 081400 Jun they knew by visual observation that amphibious

061400

units were unloading at anchor in PORT PLEASANT to FITZROY; as a result an air attack was arranged for later in the afternoon. Jamming of UK radio frequencies formed part of the attack plan.

JMJC

DISCUSSION

12. The discovery of EXOCET ashore caused a radical re-appraisal of naval tactics to the South and East of EAST FALKLAND. No RN ship, and particularly a major unit such as an LPD, was to be risked by allowing it to enter the assessed EXOCET danger envelope. It was generally assessed that from where it was situated at HORSE PT that missiles would not be fired on a track which would take them over land. This made SEAL PT the westerly cut off and hence there was theoretical 'safe' water just to the east of LIVELY Is and ELEPHANT Is and up to FITZROY. (See Annex B). This situation, together with the political directive that a catastrophe at sea with large loss of life was unacceptable led to the situation that LPD's could not go all the way to FITZROY particularly with large numbers of Army Personnel embarked.

A0117

A0119

13. A further factor which limited the deployment of LPD's was that experience had shown that ships caught individually outside the TA and its associated general air defences were very much at risk. COVENTRY was an example of this and indeed it will be recalled PLYMOUTH was attacked outside the TA in daylight hours on 8 Jun suffering considerable damage. LCU F4 was sunk the same day in similar circumstances.

14. All these factors together with an LPD's top speed of 20 knots meant that they could get little further than LIVELY Is from SAN CARLOS, go deep, retract LCU's, come up and return to SAN CARLOS if they sailed and returned in the hours between sunset and sunrise.

15. Intelligence Received after 8 June. The Board investigated whether CTG's inn the FALKLANDS IS could have been informed of an impending attack if the information described in para 11 was known in sufficient time. This investigation showed that by the nature of the source there was inevitably a time delay before it was received in a usable form by CTF 317. Although the information was passed on by CTF 317 soon after it reached him, it was far too late to be of use to alert forces.

16. Captain CAFFOGLIO's Diary. An extract from Captain Caffoglio's (ARA) diary for Mon 7 Jun is attached at Appendix 2. This adds credibility to the intelligence assessment given at para 9 and 10 above.

OF ARG AIR TO GROUND WEAPNS AGAINST BRITISH GROUND FORCES

There is now more information available on the type of weapons likely to be used by Args for attacks on British Ground Forces. The weapons are listed against aircraft types. Weapon mixes and total payload will vary with required range and flight profiles.

SUPER ETENDARD

2. a. 2 x 30 mm DEFA Cannon (each 125 rounds).  
Large calibre means relatively low rate of fire but good weapon penetration.
- b. 6 weapon stations allowing mix of bombs and/or rockets. Ordnance types: 500 lbs/1000 lbs bombs, 2.75/5 inch rockets.

A4 SKYHAWK

3. a. 2 x 20 mm Cannon. High rate of fire and probably very accurate.
- b. 500 lb cluster bombs. Probably now being delivered. important development.
- c. 69 mm or 127 mm rockets.
- d. Mix of 500 lb/1000 lb bombs.

MIRAGE V

4. a. 30 mm DEFA Cannon. Some as Super Etendard.
- b. Mix of 500 lbs/1000 lbs bombs.

AEROMACCHI

5. a. 4 x 1000 lb bomb or 6 x 750 lb bombs.
- b. 6 x rocket launcher (up to 100 mm).
- c. 30 mm cannon.

PUCARA

6. a. 2 x 20 mm cannon (270 rounds per gun).
- b. 3 x 500 lb bombs.

MIRAGE III

7. Args may be able to use Mirage III in ground attack role with similar weapon load to Mirage V.

7 Jun 82

Summary

In San Carlos Water on a clear sunny and milder day, wind NW 15 -20 kts. Anchored to North of Sound after first light. 2 high level aircraft detected mid-day to NW engaged with Seadart. 1 Lear Jet splashed. Sailed at dusk for overnight patrol N Falkland Sound for interdiction of high air threat. No A/C used the FAB today although it is now fully operational.

Duties Ta

AAWC, LAAWC, AIRCS, EW CC-ORD, CHAFF Guard, LINK 10 DNCS, LINK 10 RCS, Air Co-ord, HCU and AAACU.

Narrative

TIME	EVENT
0001	Defence watches 2Y (Modified)
0451 - 0512	Operational programme re-run
0700 - 0800	PSL's
0815	SOC's
0845	GWS 30 defective (SOC'S) right and left hand lanes U/S hang up
1042	GWS 30 fully operational
1044	SHUTTLE report
1114	Anchored SC.
1159	Hostiles closing 100NM
1200	ARW RLD
1201	3 Sweeps J Band 295
1202	Lynx Fly1 on deck
1205	Threat Bearing 295 - 60NM 2 Aircraft
1207	One hostile at 10000 feet - 6237 FWD 909 RH Target AFT 905 LH Target 285 - 40 Gcne low FWD Acquired 6245 ht 39000 feet Sp 380 Engage with Seadart
1210	Dart away, Engage with aft, birds affirm
53 Secs	Dart away AFT Second contact FWD assessed hit, Aircraft dropping sighted
1211	reload
121.	Explosion seen on brt, re-acquired 6245 - 2nd contact
1215	6245 opening

Brigade General Americo DAHER  
RI25 Teniente Coronel Ali BENEYDIN  
RI 8 Teniente Coronel REPOZZI

Appendix 2  
to ANNEX E: 1

10th Brigade General YOFRE  
RI 7 Teniente Coronel GIMENEZ  
RI 4

C / I GCHQ AIR  
S / M FICO MGRM

3rd Brigade General PARADA  
FOX BAY RI 5 Colonel MABRICANA  
RI 4 Lieutenant Colonel COMINI  
DARWIN RI 12 Lieutenant Colonel DI POGGIO

E W PACK NAVY  
*Sutton*

*(Translated by Lt Col J HARRIS RN, Deputy Fleet Supply Officer)*  
MONDAY 7 JUNE

~~Day broke as a clear and lovely morning. All day explosions were heard from explosions and gunfire. MOZZARELLI put me in charge of drawing up the lists of dead and missing in action, which took me all day.~~

~~Towards the evening they took two Exocet missiles to the point near Bay to see if tonight we are lucky enough to attack a frigate. Captain PEREZ is involved with this and is very concerned because of the previous failures, one failed to launch and the other missed due to a faulty connection.~~

~~Lieutenant MOLLINI was unhappy in that being an artillery man and having worked on Exocet MOZZARELLI did not allow him to help with the launchings, since PEREZ was not only a technician and not an operator. He said that MOZZARELLI had told him that he would not talk to the admiral about it because he was intractable (grouchy rude?) They informed that on passing over Broken Island they (the British?) knocked down a Berjet with five passengers, with one missile. As they do not have an ejection system they were all killed, amongst them was Vicecommodore De La Colina.~~

~~Today I was told that they captured some food and some english soldiers from a patrol. By means of radio interceptions it appears that they are disembarking amphibious vehicles on a nearby beach, which could be Fitzroy.~~

~~The 5th Marine Infantry Brigade shot down a Harrier, firstly their Blowpipe failed, and then two hundred soldiers fired at with their automatic rifles, the aircraft started to smoke and crashed.~~

~~Towards evening Captain CRAVERI accused us by saying 'You lot eat a whole bag of bread and therefore it does not get to the front line' He said it in an angry mood and shouting back I indicated to him that I in particular did not eat bread and that at the naval base those recruits that are there eat biscuits. I passed on the order to Lieutenant BLANCH ALTE MOLLINO and he said to me 'its alright sir, but they eat bread 'ALTE MOLLINO CROVEN Y CINE' and they drink all the Vermouth - My God how much more misery!~~

TUESDAY 8

~~The english began to land at ~~Port Pleasant~~ Pleasant Bay (Port Pleasant) opposite Fitzroy. Our aircraft attacked them with the following damage: 1 sunken frigate, two landing ships aground and on fire and another transport with explosives onboard (unexploded bomb?)~~



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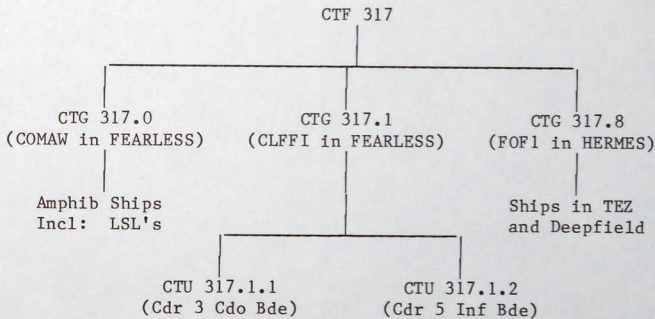
BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX E2 DATED 23 SEPT 82

COMMAND AND CONTROLINTRODUCTION

1. The Board felt it necessary to examine the Command and Control arrangements for OPERATION CORPORATE as far as they affected matters at FITZROY in the events leading up to 8 Jun. As the examination continued it became wider in scope; all that we have attempted to do here in the time available is to look at factors which could have led to a confused situation.

TASK ORGANISATION

2. The Commander in Chief Fleet was Commander Task Force 317 (CTF 317) and thus is overall command of OPERATION CORPORATE. By the time CLFFI was in FEARLESS the task organisation was:



3. CTG 317.0 and CTG 317.1 were both clear that FOF1 was the senior CTG and thus had a large responsibility for all the events in the South Atlantic.

A0013  
 A0014  
 A0925

4. In practice this meant that CTG 317.0 and CTG 317.1 went direct to CTF 317 for main decisions keeping CTG 317.8 informed. With respect to the interchange of ships and assets between the AOA/TA and the TEZ then CTG 317.0 would deal direct with CTG 317.8.

A0017  
 A0058

5. Although there were 50-60 changes to the Task Organisation in 6 weeks, these were of a minor nature and it should be noted that LSL's remained directly under CTG 317.0 throughout.

A0863

E2-1

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TACTICAL DOCTRINE

6. UK Tactical Doctrine for Amphibious Operations is laid down in ATP 8, ATP 36, ATP 37 and ATP 5. To the best of our knowledge these publications were never declared to be in effect for CORPORATE but were generally assumed to be so and CTG 317.0 stated it was to be used when he conducted briefings. RN and RM units regularly employed on Amphibious Operations are reasonably well trained in these publications but Army personnel were not; nevertheless they made some attempt to get to grips with it.

A0020  
A0024  
A0932  
A1693

OPERATION ORDERS

7. There was no specific Operation Order, either written or signalled, for CORPORATE. The Operation was run by signalled instructions, secure voice conversation, by personal visit and discussion. The exception to this was CTG 317.1 signalled Op-Ord 1-82 OPERATION SUTTON for the initiating of EAST FALKLAND by the Land Forces. However, it was only addressed to Brigade Commanders of the Land Forces and in our limited research we found no unit commander in the field who had seen it. OCGW stated he thought he might have been briefed on it before disembarking at SAN CARLOS.

CLFFI  
010415 Jun  
A1642  
A1142  
A1359

8. The use of OPGENs was widespread and effective but they are not normally addressed to or well understood by LSLs, and this needs to be remembered by originators.

A0849  
A0851

9. Whenever possible signalled instructions were used to supplement verbal orders and instructions

A0526

SECURE SPEECH

10. NESTOR and DSSS secure speech circuits were used a great deal to aid policy, planning and the execution of decisions. DSSS conversations were unanimously disliked by all Commanders since rarely was a hard copy kept of the discussion, it was not easy to debrief to all staff officers on the outcome and there was difficulty in being absolutely sure as to whether each party's understanding of the outcome was the same. DSSS had its use for clarifying hard copy signals which, of necessity, had to be kept brief. Whenever possible Staffs limited the number of staff officers who would use DSSS. The reliability of being able to contact the necessary Commander was also suspect at times.

A0854  
A0040  
A0918  
A0919  
A0043  
A1571

COMMANDER AMPHIBIOUS TASK FORCE (CATF)

11. Within the meaning of the term CATF in ATP 8, CTG 317.0 held that duty and was responsible for all events in the AOA established around SAN CARLOS and in FALKLAND SOUND. This situation was satisfactory as long as the AOA was in being but after 1 Jun when it became the TA, CTG 317.0 was not too certain as to where his responsibilities lay. Once the AOA was abolished, boundaries

A0046

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became more blurred; this was not too significant whilst operations were near FALKLAND SOUND but as the land operation moved further east they entered surrounding waters which, up until that time, had largely been the province of CTG 317.8. In the end it became rather a too loose arrangement since CTG 317.0 planned and conducted amphibious support operations to FITZROY and TEAL in waters which up until that time had been the almost exclusive preserve of CTG 317.8. For example, when the two LSL's were sent to FITZROY in 7/8 Jun they were under the OPCON of CTG 317.0 whilst NGS units operating in the same area came under CTG 317.8. Such a situation can lead to a 'Blue on Blue' encounter as nearly occurred on the night of 5/6 Jun when INTREPID's LCUs were on passage from LIVELY ISLAND to BLUFF COVE and then encountered 2 RN escorts; both sides were unaware of the presence of the other and the LCU's were illuminated.

A0049  
A0050

A0059

A0059  
A0783OPCON OF LCU's

12. CTG 317.0 retained the OPCON of all LCUs throughout but chopped TACON to CTU 317.1.1 and CTU 317.1.2 when they were required to direct the actual use of these assets for specific tasks. CTG 317.0 relieved CTU 317.1.2 of TACON after events of 8 Jun which included the loss of F4 in CHOISEUL SOUND. CTU 317.1.2 however was not entirely clear in his mind about who was controlling the landing assets at FITZROY.

A0095  
A0097/8

A0618

A0841

A1576

A0723

T0124

A1620

13. [redacted] at FITZROY and carrying out a recce for the siting of Main HQ when it arrived, understood from the CO of the ABU that he had TACON of all landing craft assets at FITZROY; that seemed to be the only way he discovered.

A1663

14. The CO of the ABU should have been responsible to CTG 317.0 whilst at FITZROY in accordance with the doctrine in ATP 8. However we do not believe he received any instructions as to his responsibility at FITZROY.

15. [redacted] of CTG 317.0's staff was embarked in SIR TRISTRAM on 7 Jun and SIR GALAHAD on 8 Jun. He felt his position was one of a "supervisory capacity" at the LSL end.

A0624

16. [redacted] states he told [redacted] of 5 Bde that he would take over responsibility for offloading SIR TRISTRAM and subsequently SIR GALAHAD. [redacted] does not recollect this arrangement.

A0793

A1168

FAILURE OF COMMAND AND CONTROL BY CTG 317.0

17. CTG 317.0 promulgated his SITREP/INTENTIONS for 7 Jun in his signal 19F 071318 and which included CTU 317.1.2 and SIR TRISTRAM as info addressees (Priority). From this these two units (if they received it in time) should have known that:

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- a. "One Rapier Troop was to be loaded into SIR GALAHAD for onward move to BLUFF COVE."
- b. "Tonight - GALAHAD transport balance of 2WG to BLUFF COVE."
18. In his TA Intentions signal of 071638, CTG 317.0 told GALAHAD to sail for FITZROY; this was not repeated to CTU 317.1.2 or SIR TRISTRAM as it was designed for units in the TA.
19. SIR GALAHAD in his signal DTG 080015 Jun made the following points:
- a. Estimated time of completion of load 080200 Jun.
- b. His intention to remain SAN CARLOS overnight.
- c. He had embarked 2 Coys WG, Rapier fire units, RE Troop and 16 FA.

This signal was sent FLASH precedence to CTG 317.0 and also very correctly FLASH to the information addressees CTG 317.8, CTG 317.1, CTU 317.1.2 and TU 317.8.1. SIR TRISTRAM was not addressed.

20. CTG 317.0 in his reply (FLASH 080052 Jun) and addressed to SIR GALAHAD, CTG 317.1 and CTG 317.8 told SIR GALAHAD to sail and report his NAVTRACK and ETA to CTG 317.8 and CTG 317.0 by FLASH message.
21. CTG 317.0 had thus an opportunity to keep CTU 317.1.2 informed by signal by repeating SIR GALAHAD's list of addressees but this was not done. He also had the opportunity to use his reply as a vehicle for bringing all units concerned with the move up to date on the latest development; neither was this done. This reply was drafted and released by CTG 317.0's Duty Staff Officer (believed to be the SCO). The DSO shook SOO/CTG 317.0 and cleared it with him; CTG 317.0 personally was not called and did not see the relevant signals until next morning.

A0567  
A0289  
A0153

DISCUSSION

22. The Task Organisation was one which rightly allowed Commanders to get on with their particular task without much higher direction from a CTF 8000 miles away. CTF 317's policy was command by negotiation and this worked entirely satisfactorily provided he was aware of all the factors in time. He worked in this manner to vet the planned landing on 6 Jun but however he was unaware of all the relevant facts to have much influence over the events of 7 Jun when the decision to send a second LSL to FITZROY was taken. Decisions were having to be taken at great speed and plans were continually changing at this time and he was unable to effect any advice. Responsibility for the decision on sending SIR GALAHAD to FITZROY

CLF 8

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on 8 Jun therefore rests with CTG 317.0 advised of the requirements by CTG 317.1. CTG 317.8 was similarly unaware of immediate events to be able to influence them under his guise of senior CTG.

23. RFA SIR TRISTRAM and RFA SIR GALAHAD were always fully aware as to their Commander.

24. The way in which CORPORATE was run with so little in the way of written instructions or signalled Op-Orders is very creditable in view of the lack of experience of those taking part and the almost total unfamiliarity of the Army units with Amphibious Doctrine. Commanders generally speaking had little difficulty with the system until such time as the nature of the operations changed or plans changed almost completely. By 6 Jun plans were changing so fast that there was plenty of scope for confusion but by personal visits by staff officers to LSL's this was averted as far as possible. Follow-up signals to a Captain could contain new unbriefed information and lead to confusion or doubt, and thus staff officers needed to be very experienced to provide the right level of signalled instruction when it was used.

A0397

A0526

A0529

A0549

A0562

G0103

G0110

G0111

G0112

25. Mobility of Commanders. Whilst it is accepted practice for Commanders to go into the field leaving the day to day running to their staffs this system must not be taken for granted and it can lead to the slowing of decision taking i.e. waiting for the Commander to get back for an evening brief. The advantage of the system is that decisions can sometimes be transmitted more quickly this way and indeed any intelligence may reach HQs quicker. There is a balance to be struck but in this campaign there is evidence that this factor caused considerable difficulty in the briefing of all those concerned with adequate frequency.

A1594

A1595

26. Mobility of Staff. Evidence was presented to the Board that showed an inability of staff to keep up with the rapid change of events when 'hot-planning' was in progress whilst at the same time they were necessarily away briefing units. As a result the confidence of junior officers can be impaired and their credibility weakened with their customers.

A0549

A1595

27. Tactical Doctrine. The vagueness about the use of ATP's concerned with Amphibious Operations was understandable at the start of the operation but as soon as 5 Inf Bde was assigned to the operation their importance achieved greater significance. HQ staff did study the books and then were amazed to find Amphib Ops were not being conducted very much like the book. Responsibilities of Commanders were never clearly defined therefore as required by an Initiating Directive (ATP 8 Chap 2 Art 200).

A0932

28. Command. The requirements for Command are clearly laid out in ATP 8 Chap 1 Art 108 and many of the principles in Chapter 2 were used and worked generally in a satisfactory manner during the assault phase. Events thereafter are more obscure (see para 29 below).

A0924

A0050

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29. Termination. ATP 8 Chap 1 Art 113 defines the requirements for the termination of amphibious operations and the change to a Transport Area and General Unloading. (ATP 36 Art 419). We can find no evidence that termination was actually declared as required by sub para c of this reference, nor did CTF 317 give his instructions as to how operations were to be conducted thereafter as required by this reference. These factors led to a degradation in the tautness of Command and Control as experienced in SAN CARLOS. CTG 317.0 was less sure of his position when the TA was set up. As the Land Forces moved East and supporting naval units from both CTG 317.0 and CTG 317.8 became essential for operations in the same area, the control became too loose. Attempts were made to resolve this situation by signal and DSSS conversation but no hard and fast new organisation was ever promulgated to all land and sea units concerned. Whilst individual RN ships were able to work satisfactorily in this situation other units found it more difficult to define responsibilities. In effect, whilst the three main Commanders for the Southern area of operations met every day they could discuss and settle points immediately by verbal briefings; to those further away, and indeed to some of those Commanders staffs, the situation became more grey with time and led to the confused situation described in paras 13 to 16 above. Nevertheless there was no major breakdown of command and control.
- A0984  
A0050  
A0353  
A0050  
0051  
A0059  
A0062/3/4
30. DSSS. Without the use of secure voice circuits the tempo of operations would have slackened considerably particularly in the absence of written or signalled orders. DSSS however distracts officers from other business, requires considerable forethought before making a call and can lead to receiving officers making hasty decisions due to lack of notice. It is most important that Commanders and their senior staff officers are all trained and practised in the use of secure voice for decision making.
31. Failure of Command and Control by CTG 317.0. The Board can find no evidence from witnesses that SIR TRISTRAM or 5 Bde forward element knew of SIR GALAHAD's movements as a result of CTG 317.0 intentions signal; this therefore presumes that CTG 317.0's intentions were not received by them; if they had, they would have expected to see SIR GALAHAD turn up at BLUFF COVE on 8 Jun and would then have had to send LCUs there to meet him; this was not done.
32. CTG 317.0 failed to grasp the opportunity to:
- a. Appraise all of the addressees on SIR GALAHAD's intention signal that she was to sail.
  - b. Bring all interested units right up to date as to what was happening in a rapidly changing situation.

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33. S00/CTG 317.0 failed to grasp the significance of what the DSO was telling him and should have instructed the DSO to inform CTG 317.0 of the change of events.

CONCLUSIONS

34. It is concluded that:

- a. the Task Organisation was satisfactory and was operated sufficiently flexibly throughout the operation. (para 22)
- b. Command by negation can work well and was necessary in OPERATION CORPORATE; however it is harder to operate as the pace of operation quickens. (para 22)
- c. The responsibility for sailing SIR GALAHAD to FITZROY rested with CTG 317.0 on 8 Jun to meet the advised and co-discussed needs of CTG 317.1. (para 22)
- d. Neither LSL was confused as to whom was its superior commander. (para 23)
- e. The lack of signalled or written orders can be tolerated in a steadily moving situation but the effects are far more marked in a hot moving situation such as that pertaining through 6/7/8 Jun. (para 24)
- f. If Commanders and their staffs spend considerable periods of time away from their HQ's then the system of briefing and debriefing both upwards and downwards must be exemplary. (paras 26, 27)
- g. The lack of direction on which doctrine was in force was not of major significance until forces unfamiliar with amphibious operations arrived. Thereafter it gained in importance and added to the difficulties on 8 Jun. (para 27)
- h. No Initiating Directive was issued by CTF 317. (para 27)
- j. The principles of command were based on those in ATP 8, ATP 36 and ATP 37, and worked to a satisfactory level during the Assault Phase at SAN CARLOS. (para 28)
- k. No Termination signal was made, nor were any further instructions given by CTF 317 as required by the Tactical Doctrine. This resulted in a loose organisation of command once the TA was established. (para 29)
- l. CTG 317.0 was less clear on his role and authority after the assault phase completed. (para 29)
- m. The further away from SAN CARLOS that support shipping and land forces moved, the greater became the scope for confusion of responsibilities. (para 29)

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n. At FITZROY on 8 Jun the position of each officer of authority was not clearly specified by CTG 317.1, CTG 317.0 or CTU 317.1.2.

(para 29)

o. The Board could not identify a major deficiency of Command and Control by CTG 317.0, CTG 317.1 or CTG 317.8 which led to the events at FITZROY on 8 Jun.

(para 29)

p. The Board identified a significant deficiency by CTG 317.0 staff with respect of command and control. If more consideration had been given to the address and content of the signal to SIR GALAHAD telling her to sail, then correct preparations for her reception at FITZROY would have been achieved and could possibly have led to the WG disembarking much earlier.

(paras 31, 32)

q. The officer responsible for the deficiency above is considered to be SOO/CTG 317.0; he was the most senior officer to whom the matter was referred. (This matter is discussed further in Annex E13 and recommendations made there.

(para 34)

RECOMMENDATIONS

35. It is recommended that:

a. Further study of the Command and Control Organisation for OPERATION CORPORATE be undertaken to ensure that all lessons are fully learnt; this Board was not tasked to do this in its entirety.

b. If the Royal Navy is to be tasked to carry out national amphibious operations of the nature of CORPORATE, then either national doctrine must be developed or the relevant ATP's require review so as to cover the requirements.

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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX E3 DATED 23 SEPT 82

THE NEED TO TRANSPORT TROOPS ALONG SOUTHERN FLANK

TACTICAL SITUATION

1. It was not until British Land Forces were established in any numbers in the FALKLAND ISLANDS that it became completely apparent to the Commander Land Forces (Falkland Islands) (CLF(FI)) and CTG 317.1 that the Argentinian forces on the ground far outnumbered the British forces. Although it was not considered essential to achieve the classic 3:1 majority for offensive operations, it was deemed highly desirable to achieve something approaching numerical equality. A0909  
A0978
2. The initial thrust of the land battle developed early on the northern flank, with the forces of 3 Commando Brigade. Having achieved the approval of the Chiefs of Staff to include 5 Brigade, it was clear to CTG 317.1 that a southern flank would not only increase the pressure on the enemy who believed the main attack on STANLEY would come from the south, but would also provide an option to swing the main thrust between two axes. A0933  
A0934
3. With the realisation of this need there were two aspects to be covered (a) the supply of ammunition and (b) the movement of men. During the early stages this was restricted to considering logistic support as the response of the enemy had not been evaluated. It was not expected that a secondary amphibious landing would be required although it could be achieved using LSLs if essential. A0032
4. At all times during these deliberations the need for speed in the completion of the two phases of the operation was appreciated. From the earliest discussions the limitations on sustaining a force at sea, and an effective capability to provide air cover was stated if not in specific terms, certainly in concept. Further the climate was known to be a very significant factor which could only be tolerated for a limited time. The logistic planning for forward support was one which was exacerbated by the rapidly extending lines of communication into high country to the north and in conditions which were often almost intolerable. A0913  
CTG 317.1  
030100 Jun
5. The need to develop a southern flank was therefore realised even before CLFFI arrived in the FALKLAND ISLANDS. That it should be developed along a southern flank and receive logistic support promptly and continuously was a natural development of this need.

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POSSIBLE METHODS OF EXECUTION

6. From the earliest it was envisaged that logistic support to the forward troops would be via helicopter, LCU, or LSL and that this would be based on the FITZROY/BLUFF COVE area for 5 Brigade on the southern flank. This would be necessary to supply the troops with not only food and survival stores but also the heavy load of ammunition. CTG 317.1  
010415Z Jun
7. The problem of inserting the reinforcement troops could be achieved by one, or a combination of the following; marching, helicopters, or shipping.
8. Marching. 5 Brigade were confident that the advance could be maintained on foot, with some helicopter support to ferry equipment and ammunition forward. In the event this was attempted and found to be slow if not impossible. An early attempt by the Welsh Guards towards Darwin was thwarted by a lack of training, and a lack of either air or ground assets to assist in the move of equipment. A further explanation of this attempt is given in more detail in Annex E9 para 2. CTG 317.1 was concerned that in the event of an advance on foot the troops would not be immediately available for fighting in their optimum condition. A1062  
A1011  
A1062  
A0909
9. The need for a speedy advance of large numbers of troops had been emphasised by several factors:
- a. 3 Commando Brigade moving into MOUNT KENT/CHALLENGER region because of intelligence. A0949
- b. Appalling weather conditions limiting the Commandos endurance.
- c. The unexpected, and rapid advance by 5 Brigade to FITZROY by the 2 Paras. A1565
10. Speed was now an essential commodity, and marching could not achieve the required rate of advance; had the Welsh and Scots Guards started to march immediately on arrival in SAN CARLOS, before their kit was fully unloaded, it is unlikely that they could have got more than half-way to FITZROY by 8 Jun. A0936
11. Airlift. Helicopters had played an essential role in the early planning both for logistic support and the movement of troops. The machines that could best achieve these lifts even in poor weather conditions were the CHINOOKS and three quarters of these assets were lost when the ATLANTIC CONVEYOR was sunk. There was therefore a basic shortage of heavy lift helicopters but of those available, most were committed to supplying food and ammunition to 3 Commando Brigade in the mountains. This activity had in itself been hindered by extremely poor flying conditions during the first week of June. These circumstances combined to make the planned air A1059  
A0106  
A0950  
A0114  
A0999  
A1563

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lift of Scots and Welsh Guards to DARWIN, in case of a need to fight on the southern flank to FITZROY, impossible. It also precluded the planned insertion of these troops directly into the FITZROY area. A1563

12. Shipping. As stated in para 6, it had been realised from a very early stage that the sheer weight of logistic support in terms of ammunition would require a regular LSL supply route. This system had been successfully used at TEAL INLET, and had not been attacked by the enemy although it's existence and purpose was probably known to them. A1597  
A1062  
A0996  
A0967  
A1028

13. It was with this experience behind them that the combined staffs now considered FITZROY as the best position for the HQ of 5 BDE together with the Forward BMA for southern flank. It was known by 2 June that the area was occupied by British troops, and although there was a degree of risk from air attack, air defences would be established at the earliest opportunity (see Annex E6 para 25).

14. In considering how to move the troops forward, together with supplies, shipping provided the only solution and so the plan to use both an LPD and LSL was promulgated. CTG 317.0  
032110 Jun

#### CONSEQUENCES OF DELAY

15. With the rapid advances of the 3 Commando Brigade in the north and 2 Para under 5 Brigade in the south, the need for troops and supplies in the region of FITZROY was paramount. It could be said that this speed of advance had been too fast for logistic support. A1019  
A0115  
A1567

16. In addition to the overall need for a timely completion to the campaign, the specific needs were becoming clear.

a. The weather was causing survival problems for 3 Commando Brigade in the north; Trenchfoot was claiming 20 victims in each Brigade each day, together with troops using stamina and ammunition just to maintain their position. A1061  
A1012  
A1566

b. FITZROY and BLUFF COVE had been taken without battle and there was an urgent requirement to take advantage of the advance and to reinforce troops and to prepare for the next advance. A1017  
A1565  
A1567

c. A Field Ambulance Station was required before any further direct battle could be considered.

d. Logistic support was necessary even to maintain position. A1012

17. Any delay in establishing this support would contribute directly to the delay in advance on PORT STANLEY with reflected adverse effects on the fighting efficiency of 3 Cdo Bde in the mountains to the north. A1068  
A0323

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CONCLUSIONS

18. It is concluded that the use of shipping for the insertion of troops was justified because:

- a. A rapid military advance and adverse weather conditions demanded reinforcements at a rate not achievable by marching. Paras 8, 9, & 10
  
- b. Airlift by helicopter was not possible due to a basic shortage of assets caused by the loss of ATLANTIC CONVEYOR, the need to supply 3 Cdo, and poor flying conditions. Para 11
  
- c. A delay in establishing troops and 5 Bgd BMA would reflect directly on the speed of advance on PORT STANLEY. Paras 16 & 17

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E4 DATED 23 SEPT 82

THE DEVELOPMENT OF PLANS TO REINFORCE THE SOUTHERN FLANK

1. Plan 1. The need to transport men, equipment and supplies to the FITZROY area on or about 6 June is described in Annex E3. The initial plan to satisfy this requirement is fully described in signal ref CTG 317.0, 032110Z Jun (see Appendix 1). In summary, this plan is given below:
  - a. HMS INTREPID to insert 4 LCUs and 2 LCVP off BLUFF COVE area at first light (Position BC17). Assets to contain 1½ Battalions of SCOTS and WELSH GUARDS, and beach equipment. INTREPID to return immediately.
  - b. RFA SIR TRISTRAM to go inshore and unload ½ Battalion WELSH GUARDS.
  - c. 2 Escorts, CAP and support requested.
  
2. This proposal caused comment from CINC Fleet in that the passage to SAN CARLOS would be undertaken in daylight contrary to established policy, with the possibility of sea mines endangering shipping. There have been some indications that a misunderstanding occurred at this point in as much that the intention was to do the insertion of LCUs in darkness and return to SAN CARLOS that night (5/6 June). In the event of inadequate time to make the homeward leg, then HMS INTREPID could sail eastwards into the cover of the Deepfield units.
 

CTF 317  
041637 Jun

A0323  
A0129
  
3. In reply to CTFs signal, CTG 317.0 and CTG 317.1 stated that whilst the dangers were appreciated the sea move offered the best option, and emphasised the need for speed (see Annex E3 para 10).
 

CTG 317.1  
050233  
Jun
  
4. Later the same day CTG 317.8 expressed similar concern to CTF, and suggested that an amphibious operation in that area should be dependent on weather conditions. CTG 317.8 reluctantly agreed to provide the escorts but suggested a re-appraisal of the plan.
 

CTG 317.8  
050956  
Jun
  
5. The plan was finally dropped on instructions from CTF who stated that politically a catastrophe as sea with large loss of life was unacceptable and that in his view, some delay could be accepted. In his acknowledgement to this instruction, CTF 317.0 sought advice on the acceptability of using LSLs as logistic suppliers with a few troops embarked as at TEAL INLET. CTF replied that this decision would have to be made by Commanders in the field.
 

CTF 317  
051225  
Jun

CTF 317  
051825  
Jun
  
6. Meanwhile preparations for the original plan had not been halted; escorts and CAP cover were to be provided for HMS INTREPID. However, CTG 317.8 felt that for an escort to remain with SIR

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TRISTRAM during daylight would be a risk to more ships particularly as he would have to provide a Type 42/22 combo. He went on to state that if essential YARMOUTH could be made available by day and requested CTG 317.0 advice. He also stated that he considered "TRISTRAM best left to own salvation" during daylight on 6 Jun. This was an unfortunate phrase and was read by the LSL's even though not addressed.

CTG 317.8  
051104  
Jun  
A0898

7. PLAN 2. CTG 317.0 and CTG 317.1 now produced a new plan which took greater account of conducting operations under cover of darkness and the EXOCET threat. In summary:

CTG 317.1  
051910  
Jun

a. 5/6 Jun HMS INTREPID to launch 4 LCU with 2nd Battalion, SCOTS GUARDS, in area of LIVELY ISLAND. LPD to return to SAN CARLOS before daylight. LCUs to BLUFF COVE.

b. 6/7 Jun HMS INTREPID to RV with her 4 LCUs in vicinity of LIVELY ISLAND. 1st Btn WELSH GUARDS (less 1 Coy) to transfer to LCU for move to BLUFF COVE. LPD to return to SAN CARLOS as previous night.

c. 1 Coy of WELSH GUARDS by LCU to CANTERA HOUSE, march to DARWIN for move in MV MONSUNEN.

d. 6/7 Jun SIR TRISTRAM to sail to BLUFF COVE and commence logistic unload, remaining by day.

8. This plan satisfied the criticism offered earlier in that a large number of troops would not be exposed by day, however from the statements taken this, in fact, was never intended although the original plan appears to require that. As the possibility of retreat to the Deepfield had been removed the requirement for escort support was dropped.

A0323

CTG 317.0  
051935Z  
Jun

9. Plan 2 Phase 1. The plan was initiated on the night of 5-6 June with HMS INTREPID inserting 4 LCU off LIVELY ISLAND with the SCOTS GUARDS embarked. Details of this journey will be found in Annex 1E para 5, and, with some reservations, the operation was successful.

A0954

10. Plan 2 Phase 2. The second phase commenced during the night 6-7 Jun with HMS FEARLESS attempting to rendezvous with the LCUs used the night before. This was not possible due to weather at FITZROY and in the event only 2 Coy of WELSH GUARDS were sent ashore from the vicinity of ELEPHANT ISLAND. The remainder returned to SAN CARLOS just after daybreak. During the same night RFA SIR TRISTRAM sailed to FITZROY as planned.

A0614  
A0792

11. Plan 2 Phase 3. The following night (7-8 Jun) HMS INTREPID returned to rendezvous with her LCUs and reembarked them before sailing back to SAN CARLOS.

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12. Plan 3. Pressure to provide another vessel was now building up. It had not been thought feasible for HMS INTREPID to take WELSH GUARDS with her instead of recovering her LCUs. This would have required a long delay in loading the LCUs whilst at sea and possibly prevented her returning to SAN CARLOS before daybreak. In addition the requirement for assets to unload the shipping in SAN CARLOS was becoming severe, and another delay of 24 hours was unacceptable. Finally, other elements required transportation which could not have been achieved with the LCUs namely 12th Field Ambulance, and the Rapier Battery now released to provide Air Defence in FITZROY. HMS INTREPID was also becoming concerned that a pattern had developed from which the Argentinians could recognise the amphibious build up in the FITZROY area.
13. This problem was widely discussed on the morning of 7 Jun and the solution was to send SIR GALAHAD overnight 7/8 Jun to do an offload during daylight on 8 Jun. CTG 317.0 was well aware of the dangers involved especially in the light of the response to the original plan. There was a great need to transfer the men and equipment, and the risk did not involve as many men, nor such an important major war vessel. Nevertheless the risk was appreciated. On the evidence received it is apparent that whilst the risk was recognised, the military pressures were mounting (see Annex E3 para 15). In view of the enemy's lack of response at TEAL INLET the chances of success were favourable, providing the weather gave medium to poor visibility. Distant escorts were provided although not dedicated to the protection of SIR GALAHAD.
14. That 2 RFAs were to be together off FITZROY SETTLEMENT was appreciated by CTG 317.0 and his staff; this factor had been taken into account. It was also recognised by CTG 317.0 and by CTG 317.1 that air defence could not be achieved until 8 Jun; whilst such a facility was obviously desirable it was not deemed a prerequisite (see Annex E6 para 12). CTG 317.8 however was not aware that 2 LSLs would be together in this restricted water until late on 7 Jun or early 8 Jun.

A0396

A1071

A0481

A0343

INTREPID

052338

Jun

A0119

A0358

A0343

A1066

A0135

A0464

A0079

A0893

CONCLUSIONS

## 15. It is concluded that:

- a. It was only after examining and attempting other means of moving troops forward that it was seen necessary to use sea transport of men as well as their logistic supplies. (Para 1)
- b. The first plan to move men by sea was promulgated on 3 Jun 82. (Para 1)
- c. Given that surprise, lowering cloud, and boldness were present, the first plan to go all the way to BLUFF COVE area was a good one. A first light insertion would not give sufficient time for the Argentinians to react so that an air

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attack from the mainland could intervene. However there was an element of risk and this plan was ruled out for political reasons.

(Para 5)

d. Modification to plans became faster and more complex as time went by.

(Paras 2,  
3, 4, 5  
& 6)

e. CTG 317.8 statement concerning SIR TRISTRAM being "left to her own salvation" did not engender a feeling of confidence or safety in the 2 LSLs concerned.

(Para 6)

f. The plan for insertion of LCUs from a stand-off distance in the hours of darkness was the only practical alternative to meet the constraints imposed by CTF 317.

(para 7)

g. Once units other than infantry and light vehicles required moving urgently to FITZROY area then an LPD was no longer suitable under the prevailing operating conditions; an LSL was the only ship for the task.

(para 12)

h. The political and military pressures mounted rapidly in the period 3-7 June leading to much hot planning and crisis management; all of these gave rise to the decision to send SIR GALAHAD and for her to be in FITZROY on the same day as SIR TRISTRAM. Risks were not underrated and the military requirement justified the use of 2 LSLs in restricted waters.

(paras  
13, 14)

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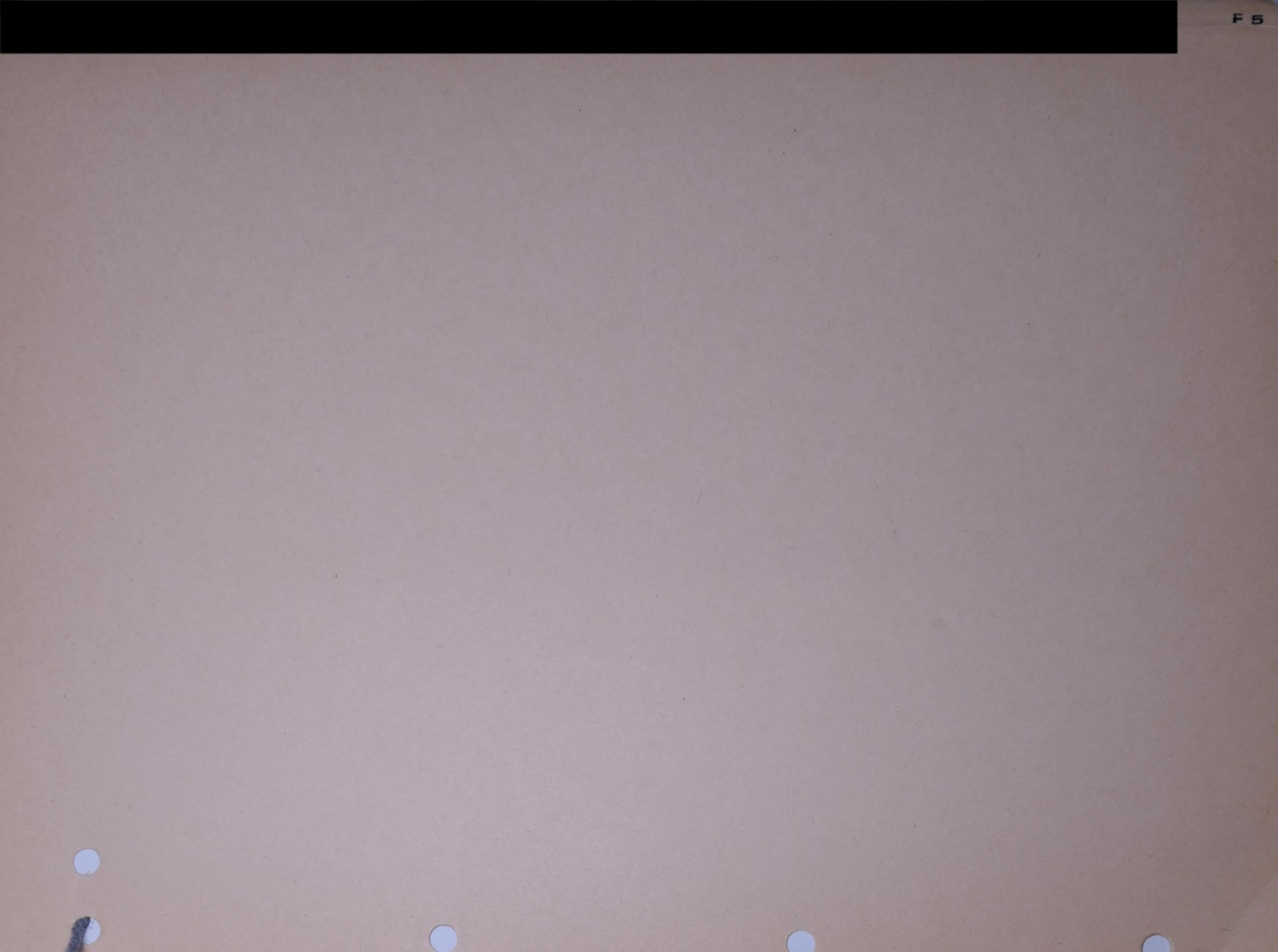
APPENDIX 1 TO  
ANNEX E4SIGNALS RELATING TO DEVELOPMENT OF PLAN

DTG	ORIG	MAIN ADD	CONTENT
032110 JUN	317.0	317.8	WARNING ORDER: INTEND 5 BGD. LAND BLUFF COVE APPROX 061030. INTREPID & LCUS INSERT 1½ BTNS RETURN ANCHORAGE. SIR TRISTRAM COMPLETE OFFLOAD. ESCORT, CAP, MUTUAL SUPPORT.
041637 JUN	317	317.1	PLAN TO LAND IN BLUFF COVE IN DANGER FROM ENEMY ARTLY & SEA MINES. CONSIDER TEAL INLET. COMMENTS.
042349 JUN	317.1.1	317.1	SURVIVAL CONDITIONS IN MOUNTAINS. SHORT OF RATIONS. 5 INF BGDE TO BLUFF COVE. SIR TRISTRAM PROVIDE BMA SUPPLIES.
050029 JUN	317.0	317.8	MILITARY SITUATION DEMANDS SUPPORT BY SEA TO BLUFF COVE. ARRANGEMENTS FOR ESCORTS, AND GUARD SHIP.
050233 JUN	317.1	317	REF 041637 JUN: SEA PROVIDES BEST OPTION TEAL PLAN WOULD LOSE INITIATIVE.
050956	317.8	317	REF 032110. AMPHIB OP. SHOULD BE DEPENDENT ON WEATHER. MORE ROBUST PLAN REQ'D ESCORT AVAILABLE IF ESSENTIAL. RECONSIDER.
051101	317.8	317.0	22/42 COMBO FOR ESCORTS. RELIEF NOT AVAILABLE AS GUARD FOR TRISTRAM.
051104	317.8	317.0 317.1	CONSIDER SIR TRISTRAM BEST LEFT TO OWN SALVATION DURING DAYLIGHT HOURS OTHERWISE ATTRACT MORE ATTENTION. CAP WILL BE PROVIDED.
051225	317	317.1	BLUFF COVE PLAN INVOLVES HIGH RISK IN CLEAR WEATHER. CATASTROPHE AT SEA WITH LARGE LOSS OF LIFE POLITICALLY UNACCEPTABLE. DROP PLAN.

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DTG	ORIG	MAIN ADD	CONTENT
051654	317.0	317	POLITICAL RISK UNDERSTOOD (REF 051225) NEW PLAN IN HAND. PLEASE CONFIRM USE OF LSL FOR STORES. FEW BAYONETS ACCEPTABLE.
051825	317	317.0	REF 051654, NO POLITICAL OBJECTIONS, BALANCE MILITARY RISK. COMMANDERS DISCRETION.
051910	317.1	317.1.1 et al	NEW PROGRAMME. 05/06 JUN. INTREPID INSERT SCOTS GUARDS VIA 4 LCU INTO BLUFF COVE. INTREPID RETURN TO TA. 06/07 JUN. INTREPID WITH WELSH GUARDS (LESS 1 COY) TO RV WITH 4 LCUS FOR INSERTION TO BLUFF COVE. INTREPID RETURN TO TA. 1 COY WELSH GUARDS TO CANTERA HOUSE IN 2 x LCU. SIR TRISTRAM TO BLUFF COVE. COMMENCE LOGISTIC UNLOAD. 07 JUN 1 COY WELSH GUARDS MARCH TO DARWIN FOR ONWARD MOVE IN MV MONSUNEN TO BLUFF COVE. 08/09 JUN SIR TRISTRAM TO TA.
051935	317.0	317.8	NEW PLAN INVOLVES NO LPD BY DAY. ESCORTS NO LONGER REQUIRED.
071638	317.0	317	SIR GALAHAD TO FITZROY. SAIL TA 2100Z.



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ANNEX E5 DATED 23 SEPT 82GENERAL NARRATIVE

1. The plan proposed in Annex E4 was initiated on 5 Jun. The following description covers the events in broad terms up to the time of the attack. Some aspects of the events are discussed in more detail in the accompanying Annexes, and will be referred to in this narrative.

5 JUNE 1982

2. The Captain of SIR TRISTRAM was briefed for the move of half the Welsh Guards to BLUFF COVE in accordance with the earlier plan (Plan 1). During this briefing it became apparent that this plan was not to be executed as briefed, however the Captain left believing that his destination was still to be BLUFF COVE with an, as yet, undefined load. CTG 317.0  
O32110  
Jun
3. During the afternoon the new plan (Plan 2) was completed, but both the Scots and Welsh Guards had commenced loading into HMS INTREPID in accordance with their previous instructions. Amongst considerable confusion the Welsh Guards were eventually off loaded and HMS INTREPID sailed at 2100 around to LIVELY ISLAND in execution of the first phase. The point of launching the LCUs took into account: A0373
- a. The danger zone of the land based EXOCET missile believed at this time to be situated at HORSE POINT (see Annex B). A1082
- b. The furthest point north to which HMS INTREPID could travel and return to SAN CARLOS under cover of darkness. A0368
4. HMS INTREPID sailed with HMS PENELOPE as escort. This was considered to be an important asset to HMS INTREPID not only for the remote possibility of air attack but because of the reported enemy activity on SEA LION ISLAND. During the journey around HMS INTREPID was indeed illuminated by Tiger Cat Fire Control Radar. Apart from that the journey was uneventful, and HMS INTREPID returned to SAN CARLOS safely under cover of darkness. A0373
5. The 4 LCUs, loaded with the Scots Guards, were under the command of [redacted]. The journey, of some 50 miles was extremely difficult because of the weather, and was dangerous. During the night they came under fire from the mainland, as well as being illuminated by star shell from friendly forces. A0784  
A0782  
A0783

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6. In the event the Scots Guards arrived at BLUFF COVE at 0930 on 6 Jun. The men had been cold and wet for 4 hours and on arrival several were suffering from exhaustion and one had a damaged knee and had to be 'casevaced' to SAN CARLOS. The general state of the men was such that the assembly area at BLUFF COVE was altered so that houses in BLUFF COVE SETTLEMENT could be used as a temporary hospital. In short the men were not fit to fight as soon as they disembarked.

A0785

A0952

6 JUNE 1982

7. [REDACTED] returned to SAN CARLOS in order to be briefed for the following night. He was aware that HMS FEARLESS would transport the Welsh Guards to an R/V with his 4 LCUs but he required detailed briefing.

A0787

8. The Captain of SIR TRISTRAM received a brief from [REDACTED] on the modified plan. After some confusion the Captain was clear that his instructions were to proceed to FITZROY. He was concerned about his lack of air-defence and during the course of the day made arrangements with HMS EXETER, the Air Defence Ship for the TA, to receive air raid warnings via LAAWC. In summary, despite a hurried loading plan SIR TRISTRAM sailed at 2300 in accordance with the plan. The weather throughout the transit was calm and clear with a full moon.

A0529

T0090

A0532

A0095

9. HMS FEARLESS, loaded with 1 Battalion The Welsh Guards, sailed for her rendezvous. At the time of sailing the weather was bad with reduced visibility but cleared during the journey. The point planned for this R/V (see Annex B) was considerably further north than HMS INTREPID had achieved. This was due in part to an interpretation of EXOCET's envelope but more significantly HMS FEARLESS was achieving faster speeds, and would still return to the TA under cover of darkness from the new R/V.

A0326

A0326

A0326

10. [REDACTED] had by this time returned to BLUFF COVE at dusk in preparation for the R/V. He found however that the weather locally was atrocious and that the 4 LCUs had sought shelter elsewhere in accordance with his instructions. 2330, his latest time of sailing, came and went, with no let up in the weather and no sign of his 4 LCUs.

A0792

11. HMS FEARLESS waited at the R/V whilst his escorts, HMS AVENGER and PENELOPE went forward to attempt to locate the LCUs. Eventually it was decided that only half the Welsh Guards could be landed in the 2 LCUs carried by HMS FEARLESS. These LCUs were successfully loaded and despatched to BLUFF COVE under the command of [REDACTED]

HMS FEARLESS made best speed for SAN CARLOS and arrived shortly after daybreak.

A0614

A0329

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E5-2

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~~RESTRICTED~~7 JUNE 1982

12. SIR TRISTRAM having completed the transit without event arrived off FITZROY before daybreak, however, because of the brightness of the moon was able to make the difficult navigational passage into FITZROY and anchored by daybreak.

13. The 2 LCUs arrived without incident at BLUFF COVE at 0700 and were unloaded within 1 hour. On completion [redacted] sailed round to FITZROY to find SIR TRISTRAM already unloading with the assistance of the 4 LCUs from HMS INTREPID.

A0622  
A0623

14. The off-load of ammunition from SIR TRISTRAM continued at a satisfactory rate throughout the day although for 2 hours either side of High Water Springs the beach was unworkable using the Mechanical Handling Equipment (MHE). The lack of MHE to back up the offload, and transport the stores to the command BMA also caused some interference (see Annex E7). It was anticipated that the offload of SIR TRISTRAM would take between 36 and 48 hours with the assets provided despite the recall of 4 LCUs to HMS INTREPID at 072000 Jun.

A0681  
A0672  
A0680  
A0546

15. By this time the return to SAN CARLOS of 2 Coys, Welsh Guards and the implications had been appreciated. In order to recover the LCUs for the offloading in SAN CARLOS HMS INTREPID planned another R/V but it was not considered sensible to use this means to transport the remainder of the Welsh Guards. The reasons for this are described fully in Annex E4 para 12. During the morning CTG 317.0, in consultation with CTG 317.1 decided to use SIR GALAHAD to move the Welsh Guards, 16th Field Ambulance, and 4 Rapier Fire Units to the FITZROY area.

A0131  
A0955/6

16. In the afternoon the Captain SIR GALAHAD was briefed by [redacted] as follows:

- a. To deliver 2 Coys Welsh Guards to BLUFF COVE by 080700 Jun.
- b. To sail round to FITZROY to offload Rapier, Field Ambulance.
- c. To sail from FITZROY at 082100 Jun.

STATEMEN  
CAPT, S1  
GALAHAD

17. The loading of SIR GALAHAD was progressed with some difficulty. There appears to have been no loading plan however the Welsh Guards together with some first line stores and the Rapier Units had arrived and were loaded satisfactorily by 2100. The Field Ambulance Unit had not arrived. The delay in this was caused by 2 factors.

G0103

A1297

- a. Late instructions given to the CO 16th Field Ambulance.
- b. Lack of adequate facilities at Blue Beach.

A1103

A1118

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E5-3

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This resulted in the final loads reaching SIR GALAHAD at 2310. Because much of the equipment was not palletised, it was estimated that the earliest sailing time would be 080200. In view of earlier instructions the Captain informed CTG 317.0 that he intended to remain in SAN CARLOS until the following night. This was discussed by the staffs of both Commanders and [redacted] having calculated the transit time advised the Duty Officer that SIR GALAHAD be instructed to sail in accordance with earlier instructions; by this he meant to BLUFF COVE. There appears to have been considerable confusion over the destination of SIR GALAHAD and this is covered in Annex E8. The result, however, was that SIR GALAHAD was instructed to sail to FITZROY. This destination was in accordance with the original plans, and as stated in CTG 317.0's 'Night Intention' signal. This signal does not seem to have been received in SIR GALAHAD. During the night, 4 LCUs were successfully recovered by HMS INTREPID (see para 15). An additional LCU was despatched to DARWIN from FITZROY to collect 5 Inf Bgde stores.

8 JUNE 1982

18. SIR GALAHAD arrived in FITZROY at 1100. That the arrival was unexpected and caused considerable confusion in the use of assets is described in Annex E10 para 3. At the time of SIR GALAHAD's arrival both the assets remaining, namely 1 LCU and 1 66' Mexeflote, were partially loaded with ammunition. The beach at this time was unworkable as High Water Springs occurred at 1107 (See Annex E14 Table 4). The Welsh Guards declined to go ashore on the ammunition at this time because of instructions not to be separated from their equipment and an expectation to go to BLUFF COVE. A full description of the unloading is given in Annex E10. The offload of the Rapier units started immediately. The partially loaded assets proceeded to the shore at approximately 1230 and unloading the ammunition was able to start at approximately 1300. Whilst the unloading of the assets continued a plan was devised to land the Field Ambulance on the Mexeflote, and to transfer the Welsh Guards to BLUFF COVE in two trips using the LCU. The confusion over the destination of the Welsh Guards is covered in Annex E8, and Annex E9 para 5.

19. When the LCU returned to SIR GALAHAD at about 1445, because of the delays, and in the view of the CO 16 Field Ambulance the priority of establishing his unit ashore, an advance element of this unit went ashore next contrary to the initial plan. This was achieved promptly and after a short detour to collect stores the LCU returned to SIR GALAHAD at 1610.

20. The LCU then developed a hydraulic pump defect which prevented the use of her bow ramp and a new plan was devised whereby the Welsh Guards were to be embarked over the side with their equipment being loaded via the aft main hatch of SIR GALAHAD using the crane. It took about 20 minutes to open No 2 Cargo hatch and it was shortly after this that the first load was transferred. The raid occurred at 1710 whilst the second load was being hooked onto the crane in the hold. A description of the attack is given in Annex E11.

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E5-4

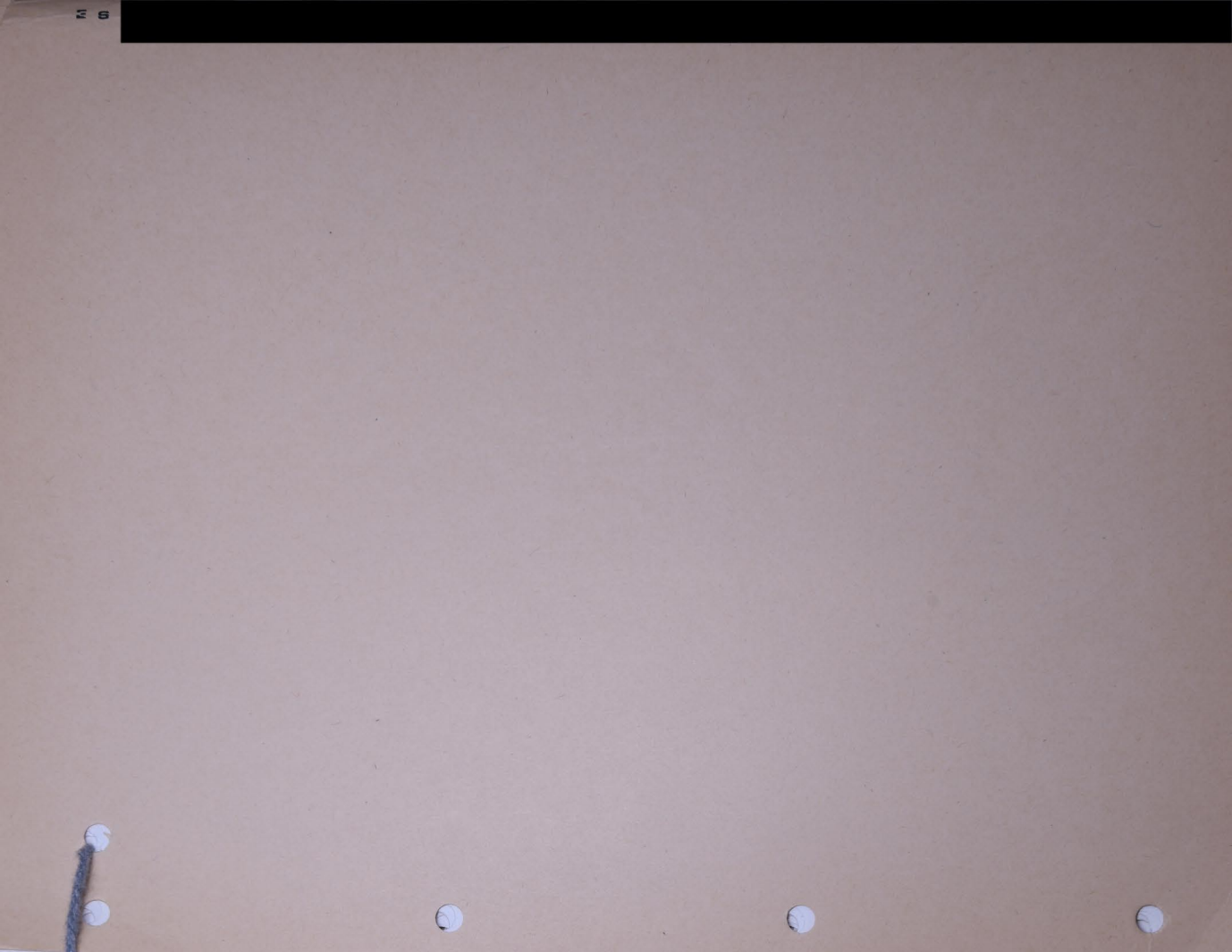
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21. Both LSLs were damaged and this is described in detail in Annexes F3 and G3. The order to abandon ship was given almost immediately in SIR GALAHAD because of the nature of the damage. Helicopters and boats arrived extremely promptly to assist in the evacuation of the survivors. The casualties were taken to the First Aid Station which had been established extremely quickly by the advanced element of the 16 Field Ambulance who had landed at 1515Z.

22. The officers and crew of SIR TRISTRAM abandoned ship at approximately 1800 in the belief that an unexploded bomb was in the ship. A fire developed which was outwardly visible between 3 or 4 hours after the attack. The survivors of both ships were transferred from FITZROY by helicopter by 2200 (see Annex G) to ships in SAN CARLOS.

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LOSS OF SIR TRISTRAM  
AND SIR GALAHAD  
ANNEX E6 DATED 23 SEP 82AIR DEFENCEPOLICYGENERAL ORGANISATION

1. The duty of Force Anti-Air Warfare Commander (FAAWC) was delegated by CTG 317.8 to HMS INVINCIBLE. This ship, in the Carrier Group, operated outside the unfuelled range of the SUPER ETENDARDS from RIO GRANDE ie 460 miles, or 100 miles East of PORT STANLEY. A0866
2. Within the Amphibious Objective Area (AOA) a Local Anti-Air Warfare Commander (LAAWC) was appointed by CTG 317.0. This ship was selected for a capability to control Fighter Aircraft and, at the time under investigation, was HMS EXETER. The LAAWC was usually situated within SAN CARLOS WATER by day but was available for operations at night because of the low probability of enemy air activity. The positioning of the ship reduced the radar performance such that adequate cover could not be achieved against low level aircraft. A0438
3. SHUTTER reports were routed to HMS FEARLESS and usually received by LAAWC and FAAWC. These were not comprehensive but covered between 50% and 75% of all raids. A0876
4. Requests for aircraft cover were co-ordinated in OPGEN CHARLIES from which OPGEN FOXTROTS were produced daily. If Combat Air Patrols (CAPs) were required for specific duties requests had to be forwarded the day before the requirement. In general CTG 317.8 was aware of the intentions for movements and specific requests were not made, the understanding being that the best aircraft cover available would be provided at all times. A0866  
A0868
5. Combat Air Patrols. The policy throughout was to provide 2 to 4 aircraft either at ALERT 5 or airborne during daylight hours with further aircraft to back them up in response to SHUTTER reports. 2 aircraft were being launched every 20 mins, 2 per hour from HMS INVINCIBLE and 4 per hour from HMS HERMES. A0866
6. Standard CAP stations were established as shown in Annex B. Stations were mounted to the north west, and south west of the AOA, and a further station existed to the south of the FITZROY/BLUFF COVE area at this time. The stations were filled by aircraft operating in a race course manner from north west through south west.

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7. In response to SHUTTER signals additional CAP aircraft were launched at a time appropriate for the estimated time of arrival of the enemy aircraft A0453  
A0876
8. Surface Ship Protection. During daylight hours ships remained within SAN CARLOS area under the Rapier cover concentrated within that vicinity. Ships' movements were carried out under cover of darkness, and every attempt was made to provide escorts. Ships outside these policy instructions were under severe risk as exemplified by COVENTRY and PLYMOUTH. A0874
9. The provision of a surface escort for ships in FITZROY was considered but rejected because additional attention would be drawn to their presence with little addition in safety. It was with these considerations in mind that the signal was sent suggesting SIR TRISTRAM would better be "left to her own salvation". The Board investigated the possibility of providing a Frigate in close proximity to the LSLs. Annex C shows that the closest a frigate could approach is approximately 8 Km. A0136  
A0347  
A0898  
CTG 317.8  
051101  
Jun
10. Rapier Disposition. The initial concentration of Rapier Fire Units immediately after the landing were in the vicinity of SAN CARLOS within the boundary known to be protected from counter attack by ground forces. This situation remained static until the arrival of 63 Squadron, RAF when the additional Fire Units allowed some redeployment. There was a staged redistribution and no units from T Battery 12 Defence Regiment were released for deployment outside SAN CARLOS until 3 June. At this time 4 Fire Units were transported by air to TEAL INLET. After further redistribution of units around SAN CARLOS hampered by bad flying conditions, 4 further units were available for loading in SIR GALAHAD on 7 June. No helicopters were available for a lift of this magnitude. A1279  
A1284  
A1296/7
11. Setting up times for a Rapier Unit under ideal conditions were quoted by the Royal School of Artillery as follows:
- a. Optical Surveillance only
    - (1) Without testing 20 mins
    - (2) Full testing 45-50 mins
  - b. Full Blind Fire Capability
    - (1) Without testing 25 mins
    - (2) Full testing 60 mins

Within Operation CORPORATE these times were being achieved, but high equipment failure rates were experienced upto 24 hours after the move. A1294  
A1295

E6-2

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12. The establishment of Rapier at FITZROY was consider by CTG 317.0 and CTG 317.1 to be highly desirable but not a pre-requisite for the operation of LSLs in this area. Every effort was made to establish Rapier units in the area at the earliest opportunity.

A0587  
A0071  
A1053  
A0472  
A0962  
A0965

13. Air Raid Warning. The majority of air raid warnings were provided from SHUTTER reports. Subsequently more detailed warnings came from visual sightings passed either by military nets or by local AAW command nets from ships' sightings. The following naval circuits were employed to broadcast warnings:

- a. HF Force AAW Command net.
- b. HF Local AAW Command net. (This was used by warships and Rapier Battery Command for retransmission).
- c. UHF AAW net (for picture compilation upto 50 miles).
- d. UHF TAC PRI (for RFAs, Merchant shipping).

A0445

When in company with naval warhips TAC PRI was the primary source of air raid warning for non warships. When outside this cover individual arrangements needed to be made either with naval, or military organisations.

A0448

14. Organic Air Defence. LSLs involved in Operation CORPORATE were provided with 1 or 2 Bofors Mk 9, 6 to 8 GPMGs, and 1 Blowpipe Launcher with 10 rounds. These weapons were manned by RN ratings, RM ratings, and other ranks of the Royal Artillery respectively. The siting of the Blowpipe was left to the discretion of the operators. The following sites were assessed:

- a. Vehicle deck.
- b. Monkey Island.
- c. Flight deck.

The flight deck proved to be the most effective site, free from rigging obstructions, and cargo; however, this site was degraded by blind arcs forward caused by the superstructure. At sea the operators found great difficulty in compensating for ships' movement.

#### SITUATION IN FITZROY, 8 JUNE 1982

15. Combat Air Patrol. CAP cover, from 1300 to 1500 had been requested by CTG 317.1 to cover SIR GALAHADs most vulnerable

CTG317.1

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- period. The actual CAP flown during this period is given in Appendix 1 to this Annex, but INVINCIBLE denies receiving a request for specific top cover (see para 1A of Appendix). The standard CAP aircraft had been on station in the vicinity of CAP station 57, to the south east of FITZROY/BLUFF COVE area when a raid developed at the same time on HMS PLYMOUTH in SAN CARLOS. The CAP aircraft were dispatched to this raid before the raid on the LSLs had been sighted. The SHUTTER report, concerning 6 aircraft leaving Argentina was received in the LAAWC ship, HMS EXETER at 081647 with an estimated time of arrival 081650; no destination could be derived from the information. The FAAWC apparently did not receive this report (see Appendix 1) and consequently no strengthening of CAP was attempted; it is doubtful if much could have been achieved in the little time available.
16. Rapier Performance. The 4 Rapier units arrived in SIR GALAHAD and virtually immediately started the off load by SEA KING at approx 1140. By 1500 2 units were fully operational, 2 had system defects to the knowledge of the Detachment Commander
17. The units were deployed as shown in Annex C2. No instructions had been issued to include the ships in the protective cover of the Rapier. If these orders had been issued it is doubted whether any better protection could have been offered by 4 Fire Units. It is generally agreed that to give effective protection the area must be surrounded, with units separated by no more than 3 Km. Units outside this area are offered a degree of protection dependent on range from the Fire Units, and terrain to the threat side of the Unit.
18. Air raid warnings over LAAWC could be received but because of an inability to locate the source of the warning little use was made of it. The Rapier Unit relied upon its own surveillance radar
19. During the first attack on the LSLs at 1710 no missiles were fired. The nearest units, call-signs 32A and 32D, were inoperative, of the remaining 2 units, 31A had a temporary fault and 33C was masked by terrain.
20. In a subsequent attack 6 missiles were fired with 1 hit claimed.
21. It is of interest to note that CTG317.1 understood Rapier to be deployed in the BLUFF COVE area at that time and advised aircraft to remain above 10000 ft in this vicinity. In effect a MEZ was established over FITZROY for 7 Jun and onwards.
22. Air Raid Warning. Arrangement had been made by the Captain, RFA SIR TRISTRAM with HMS EXETER to listen to the LAAWC circuit. Although the air raid warning was heard, the Officer of the Watch expected to be called by their designated call-sign, and therefore disregarded the warning as being irrelevant to the FITZROY area.

080144  
JunHMS EXETER  
WAR DIARY

A1324

A1302  
A1328  
A1580A1302  
A1302

A1326

A1341

CTG317.1  
072045

T0090

T0687

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The naval rating monitoring this circuit persuaded the OOW to inform the Blowpipe Team. Minimal action took place in the ship apart from this weapon team. In RFA SIR GALAHAD although a specific call-sign was not expected there is evidence to suggest that an incorrect frequency was being monitored.

G2736  
G2737

23. Ships' Defence Team. The Defence Team in SIR GALAHAD were taken by complete surprise. No Blowpipe was fired, and although GPMGs were fired, it was done in great haste and no hits claimed. The aircraft had pushed home their attack before any effective screen could be achieved.

24. The results of the Defence Team in SIR TRISTRAM was similar to those of SIR GALAHAD. Although attempts were made to fire Blowpipe the attempt was aborted because of the speed and level of the attack. No GPMG crews claim a hit.

#### DISCUSSION

25. Whilst Rapier was considered an important AD asset by CTG 317.0 and CTG 317.1 a conscious decision was made that it should not be a pre-requisite for the operation at FITZROY. Because of the limited number of units available the delay caused in achieving Fire Units at FITZROY before sending ships in was deemed militarily unacceptable (para 12). The Board is satisfied that every effort was made to install Rapier at the earliest opportunity and that by shipping it in SIR GALAHAD, this was achieved. It would not however be completely reliable in serviceability terms until 9 June (para 13).

26. With no air raid warning, 3 defective Rapier units and the remaining one masked by terrain no shots were achieved. The lack of orders concerning the protection of the shipping, whilst showing a lack of co-ordination between Staffs, is not considered to have been a significant factor in this particular action because of the limitation in disposition and system failures (paras 17 and 19).

27. The SHUTTER report on this occasion gave very little opportunity to strengthen CAP. In the event it was not received by FAAWC and no response was made. It was a correct response for the existing CAP to transit towards the known raid in SAN CARLOS although this denuded FITZROY of cover. (para 15). Although not specifically relevant to this situation there is further evidence of communications failure in that the request for top cover was not recorded (para 15).

28. The misunderstanding over LAWC procedures by SIR TRISTRAM did contribute to the aircraft having a totally unopposed approach and effective delivery. A prompt response could have also warned SIR GALAHAD. It must be remembered however that no indication of direction had been given, and the aircraft approached from the east at very low level thereby surprising even vigilant gun crews.

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(para 22 to 25). Also to deter aircraft attacking SIR TRISTRAM the ship's Defence Crew would have been firing directly towards SIR GALAHAD.

29. The navigational situation precluded the use of a frigate to provide an element of defence sufficiently close to the LSLs to any appreciable degree. This limited defence could only have been afforded if the attack developed in the direction of the frigate to the LSLs. The very presence of this frigate would undoubtedly have provoked earlier enemy attention. (para 9).

30. Blowpipe in this particular situation had some potential effectiveness although in any sea state the use of this weapon as a self defence unit requires further study. Units of the shore based Blowpipe team were not able to cope with the fast crossing targets at the close range of detection which occurred. (para 14).

#### CONCLUSIONS

31. The Board is satisfied that CAP was being operated correctly and consider the action taken in response to the raid in SAN CARLOS to have been justified. (para 27).

32. The decision to use FITZROY before deploying Rapier was taken consciously for military reasons and must be accepted as a reasonable risk in war bearing in mind the other priorities for Fire Units at SAN CARLOS and TEAL INLET. (para 25).

33. The reliability of Rapier within the first 24 hours of resiting gives cause for concern and effort should be made to rectify this shortcoming. (para 26).

34. Commanders lacked an understanding of the capability of Rapier to protect units outside the area enclosed by the Fire Units. (para 26).

35. The Board agree with the decision not to use a guardship for the LSLs in view of the doubtful increase in protection and further units placed at risk. (para 29).

36. The failure to understand the operation of LAAWC by the Captain, SIR TRISTRAM and thereby the failure of the Officer of the Watch to respond to an air raid warning may have contributed in a small way to the success of the enemy's attack on the LSLs. (para 28).

37. Guidance on the siting of embarked Blowpipe systems should now be included in the LSL Handbook. (para 30).

#### RECOMMENDATIONS

38. It is recommended that:

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TO ANNEX E-6

4c

- a. The reliability of Rapier on initial installation in a fire position needs further investigation.
- b. Sea and land commanders involved in the planning and execution of amphibious operations be given better guidance in the capability of Rapier to defend both shore and amphibious units.
- c. RFA personnel be better trained in Air Raid Warning procedures and limitations in giving accurate raid warnings.
- d. Guidance on the employment and siting of BLOWPIPE in RFA's be included in the LSL Handbook.

- 41) NO SPECIFIC REQUEST FOR TOP COVER RECEIVED FROM CTG 317.0 ON 170 317.1. SIGNAL FILES 7 AND 8 JUN HAVE BEEN CHECKED.
- 41X) CAP STATIONS IN USE. CAP FROM INVINCIBLE IN STATION 37 (520817) (5815W19); CAP FROM HERRIS IN STATION 53 (5110517) (5815W10)).
- 42) STATION 57 WAS PRIMARILY IN SUPPORT OF THE ARMY AGAINST A/C FROM THE SOUTH WEST AND A/C ATTEMPTING TO GET IN TO STANLEY AIRFIELD. ADDITIONALLY IT OFFERED DETERRENCE AND

PAGE 2 HQDFSIK 030 C O N F I D E N T I A L

DEFENCE AGAINST AND STRIKE A/C USING SOUTH COAST OF FI AND STANLEY RADAR FOR NAVIGATIONAL ASSISTANCE EN ROUTE TO CVRG. STATION 55 WAS AGAINST A/C CLOSING SAN CARLOS AREA FROM ROUND THE NORTH OF WEST FAULKLAND.

- 43) PLANNED CAP (INVINCIBLE) TIMES ZULU. 2 X SHAR 1230-1345, 1330-1445, 1510-1650, 1630-1745, 1710-1830, 1750-1910, 1950-1950, 1910-2030.

- C. CAP ACHIEVED. 2 X SHAR STATION 57 THROUGHOUT 1220-1355, 1350-1445, 1530-1650, 1620-1750, 1706-1835, 1754-1920 (1X SHAR) 1920-2000, 1905-2030. THRU-2100

- D. PARTICULAR SHOOTER REPORT NOT RECOGNISED BUT ALL REPORTS RECEIVED INVINCIBLE WERE REACTED TO BY PROVIDING CAP TO COVER EXPECTED THREAT WINDUP OVER FAULKLAND. SHOOTER REPORTS RECEIVED FROM CTG 317.0 DATE FOLLOWING LAUNCH TIMES: 061128, 061132, 061200, 061830. 061950 ALL TIMED ZULU
- E. OPERATING RESTRICTIONS. CTG 317.3 (RN 072045) JUN 82 RECOMMENDED THAT HARRISER AVOIDS OVERFLYING FI BELOW 10-000FT UNLESS SPECIFICALLY CLEARED BY CTG 317.1 HQ. IN PARTICULAR A/C WERE TO AVOID SAN CARLOS WAIVER; TEAL INLET SETTLEMENT AND BLUFF COVE BECAUSE OF DEPLOYED RAPIER BATTERIES.

PAGE 3 HQDFSIK 030 C O N F I D E N T I A L

- 44) AT TIME OF ATTACK ON SIR GALAHAD AND SIR TRIESTRAH, INVINCIBLE SHAR

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Appendix 1  
To ANNEX E:6

228A0049 TOR 160054 AUG 82 TI IDB011  
PERISHABLE INFORMATION  
IDB011SIC006 HH  
RR RBDEC  
DE RBDFFSIS 050 2272137  
ZNY CCCCC  
R 15200UZ AUG 82 ZPW N/A  
FM HMS INVINCIBLE  
TO RBDEC/CINCFLEET  
INFO RBDNO/HMS HERMES  
BT

CLASSIFIED

C O N F I D E N T I A L  
SIC 19F/Z5A

FOR PRESIDENT SIR GALAHAD/SIR TRISTRAM B OF I

YOUR 19F/Z5A 131118Z AUG 82 (LOSS OF SHIPS 8 JUN)

1. INVINCIBLE RECORDS COVERING THIS PERIOD NOW HELD BY OEG NORTHWOOD  
FOLLOWING ANSWERS FORMED FROM MEMORY AND DUPLICATE RECORDS  
REMAINING.

A. NO SPECIFIC REQUEST FOR TOP COVER RECEIVED FROM CTG 317.0  
OR CTG 317.1. SIGNAL FILES 7 AND 8 JUN HAVE BEEN CHECKED.

B(1) CAP STATIONS IN USE. CAP FROM INVINCIBLE IN STATION 57  
(5200S(7) 05815W(9)) CAP FROM HERMES IN STATION 53  
(5110S(7) 05915W(0)).

(2) STATION 57 WAS PRIMARILY IN SUPPORT OF THE ARMY AGAINST  
A/C FROM THE SOUTH WEST AND A/C ATTEMPTING TO GET IN TO  
STANLEY AIRFIELD. ADDITIONALLY IT OFFERED DETERRENCE AND

PAGE 2 RBDFFSIS 050 C O N F I D E N T I A L

DEFENCE AGAINST ARG STRIKE A/C USING SOUTH COAST OF FI AND  
STANLEY RADAR FOR NAVIGATIONAL ASSISTANCE EN ROUTE TO CVBG.  
STATION 53 WAS AGAINST A/C CLOSING SAN CARLOS AREA FROM  
ROUND THE NORTH OF WEST FALKLAND.

(3) PLANNED CAP (INVINCIBLE) TIMES ZULU. 2 X SHAR 1230-1345,  
1330-1445, 1530-1650, 1630-1745, 1710-1830, 1750-1910,  
1830-1950, 1910-2030.

C. CAP ACHIEVED. 2 X SHAR STATION 57 THROUGHOUT 1220-1355,  
1330-1445, 1530-1656, 1630-1758, 1706-1835, 1754-1920(1XSHAR)  
1830-2000, 1905-2034, 2000-2120

D. PARTICULAR SHUTTER REPORT NOT RECOGNISED BUT ALL REPORTS RECEIVED  
INVINCIBLE WERE REACTED TO BY PROVIDING CAP TO COVER EXPECTED  
THREAT WINDOW OVER FALKLANDS. SHUTTER REPORTS RECEIVED FROM  
CTG 317.8 GAVE FOLLOWING LAUNCH TIMES: 081128, 081132, 081200,  
081830, 081923 ALL TIMES ZULU

E. OPERATING RESTRICTIONS. CTG 317.1 I9N 072045Z JUN 82 RECOMMENDED  
THAT HARRIERS AVOIDED OVERFLYING FI BELOW 10,000FT UNLESS  
SPECIFICALLY CLEARED BY CTG 317.1 HQ. IN PARTICULAR A/C WERE TO  
AVOID SAN CARLOS WATER, TEAL INLET SETTLEMENT AND BLUFF COVE  
BECAUSE OF DEPLOYED RAPIER BATTERIES.

PAGE 3 RBDFFSIS 050 C O N F I D E N T I A L

2. AT TIME OF ATTACK ON SIR GALAHAD AND SIR TRISTRAM, INVINCIBLE SHAR

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ON CAP, STATION 57, UNDER CONTROL OF EXETER. CAP WERE AT 8000 FT AND ORIENTATED NE/SW ABOVE A LAYER OF ALTO-STRATUS. AFTER 15 MINS ON STATION CAP INFORMED BY EXETER THAT PLYMOUTH WAS UNDER ATTACK AND TOLD TO PROCEED TO FALKLAND SOUND. CAP CLIMBED TO MEDIUM LEVEL AND PROCEEDED WESTWARD INFORMING EXETER THAT THEY WOULD HAVE LITTLE CAP TIME AVAILABLE. CAP WERE TOLD THAT A RADAR PRESENCE WOULD BE DESIRABLE. CAP CONTINUED WEST UNTIL FUEL CONSTRAINTS DICTATED THEIR RETURN TO INVINCIBLE. ON RETURN THEY LEARNED THAT THE 2 LSLS HAD BEEN ATTACKED WHILE THEY HAD BEEN EN ROUTE TO FALKLAND SOUND A FEW MILES TO THE WEST. THIS WAS THE FIRST THEY KNEW OF THE ATTACK. INVINCIBLE DID NOT HEAR ABOUT THE ATTACK UNTIL AFTER THE EVENT. THE CARRIERS WERE WELL TO THE EAST OF THE ISLANDS AND FLYING TIME WAS OF THE ORDER OF 20 MINS SO THAT AN INSTANT RESPONSE TO A THREAT WAS NOT POSSIBLE.

3. FOLLOW UP ATTACK OF 4 X MIRAGE V WERE SUCCESSFULLY INTERCEPTED BY 2 SHAR FROM HERMES ON A LOW LEVEL TRAINING FLIGHT AND 3 SPLASHED, 1 CRASHED. A PAIR OF INVINCIBLE SHAR WERE IN STATION 57 AT THIS TIME AND VECTORED WEST TOWARDS SOME HIGH LEVEL MIRAGES WHICH TURNED AWAY.

PAGE 4 RBDFFSIS 050.C O N F I D E N T I A L

4. CAP POLICY. THE POLICY WAS DECIDED DAILY IN A CONVERSATION BETWEEN CTG 317.8 AND INVINCIBLE WHO WAS AAW COORDINATOR WITH RESPONSIBILITIES 351-362 FROM ATP 1B VOL 1 TABLE 4-3 DELEGATED TO HIM. A RATE OF FLYING CAP WAS ESTABLISHED DAILY. THIS RATE WAS INCREASED TO A RATE OF ONE PAIR OF SHAR LAUNCHED EVERY 20 MINS. FROM ONE OR OTHER CARRIER ON RECEIPT OF A SHUTTER REPORT. THE TIMING OF ARRIVAL OVER THE FALKLANDS OF CAP AT THIS INCREASED DENSITY WAS MADE TO BE JUST IN ADVANCE OF THE CALCULATED ARRIVAL OF THE ARG STRIKE. TRIAL AND ERROR HAD SHOWN BY THIS TIME THAT A 20 MIN CYCLE WAS THE MAXIMUM WHICH WAS SUSTAINABLE OVER A PERIOD OF HIGH THREAT. IT ALLOWED JUST ENOUGH A/C IN HAND TO FLY ADDITIONAL CAP SPECIFICALLY FOR THE CVBG IF IT WAS THREATENED

BT

ACTION \*FOO FLA  
\*\*\*\*\*

\*FLLO \*FOA \*DIO \*RAFA \*SMZ  
FON MGM AOC FNF CFT COS COF FAD FLC

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LOSS OF SIR GALAHAD  
AND SIR TRISTRAM  
ANNEX E7 DATED 23 SEP 82THE LANDING BEACH AND LANDING CRAFT AT FITZROYTHE BEACH

1. The Best Beach. CTG 317.0 had studied the charts several days before 7 Jun and came to the conclusion that a beach just to the east of FITZROY would be best for the support of 5 Bde and a SBS recce was asked for. Subsequently it was found to be the best beach and local people could suggest none better. It is shown on the map at Annex C of the main report. A0635  
A0794  
A6089
2. Beach Reconnaissance. Evidence from several reliable witnesses shows that beach reconnaissance was carried out both at BLUFF COVE and FITZROY; the former was more thorough than the latter. The SBS carried out the survey and showed that the approach to the beach was quite satisfactory for LCUs; it is not known whether they reported on the usable time of the beach each day. The gradient showed the beach to be unsuitable for beaching LSLs. A0087  
A0688  
A0542  
A0636
3. Tides. On 7 Jun it happened to be the highest tide of the year in a Spring Tide which gives a rise and fall of about 6 feet. Thus at high tide the water came right up to where the small 10 foot bank at the back of the beach started to rise. High Tide on 7 Jun was 1029 and 1107 on 8 Jun (Annex E14 Table 4). A0693
4. Beach Access. Two out of three rolls of trackway were used; one across the top of the of the beach for the MHE to move along whilst the other was employed on the access up off the beach. The incline of this access was initially too steep and soldiers from 2 Para were used to smooth it down. The LCU and Mexifloat could not land immediately in front of this access due to an underwater obstruction facing it; instead they had to touch down offset from the access and the Eager Beaver vehicles had to work a zig-zag pattern to reach each pallet - down the access, go slightly along to the right and then land left into the LCU/MEXI. For two hours either side of the HW the landing ramps of the craft were too high up the beach so that the Eager Beaver was unable to manoeuvre onto them; the beach therefore became unworkable for 2 hours either side of HW for palletised loads but there is no reason why fully equipped personnel could not have disembarked either here or at the jetty in FITZROY SETTLEMENT. A0690-3  
A0694  
A0629  
A0738  
A0808
5. The effects of the high tides and an offset discharge position for craft was that the beach was unusable for 8 hours of the day for logistic support items requiring MHE to shift them. Regrettably, A0698

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very few people came to know of this limitation or saw any great significance in it, so it did not reach higher commanders.

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A0089

6. Mechanical Handling Equipment (MHE). The Amphibious Beach Unit (ABU) was a half section of FEARLESS' ABU and took with it on board SIR TRISTRAM one MICHIGAN tractor (needed for laying trackway) and one Eager Beaver tractor. The former become useless not long after laying the track since it was slow, chewed up the beach or dug into the track to the dump. To make up for this, SIR TRISTRAM landed her Eager Beaver to assist. Even so MHE still remained a limiting factor since these two vehicles had to move all the stores to the forward BMA about 50 yards behind the beach.

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7. The offload of SIR TRISTRAM across this beach was estimated to take between 24 and 36 hours after her arrival on 7 Jun when about 900 tons of stores had to be landed. This assessment was made separately by the Beachmaster and the G2 on CTG 317.0 staff. The Beachmaster was given no set time within which SIR TRISTRAM's offload must be complete and the Captain of the ship had no further instructions as to when to sail or as to his next task. Every attempt was made for a quick offload but this urgency was not backed, nor could it have been, during 7 Jun with the knowledge that SIR GALAHAD would arrive next morning.

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A0546T0143/9  
A0681

#### LANDING CRAFT AT FITZROY

8. The landing craft assets at FITZROY for the offload of SIR TRISTRAM were 2 LCUs from FEARLESS (F1 and F4) and one 66' Mexi and these were placed under the Tacon of HQ 5 Inf Bde. This was not immediately clear to all participants and particularly the Captain of SIR TRISTRAM although he came to understand it during 7 Jun.

A0095/6  
A0618T0125  
T0126

9. The INTREPID's LCUs (T1, T2, T3 and T4) all remained under CTG 317.0 Opcon and INTREPID Tacon. They arrived FITZROY at 071100 after landing the Scots Guards the previous day at BLUFF COVE; they began the offload of SIR TRISTRAM and worked through the day with the Mexifloat until 2000 when they had to sail to rejoin INTREPID off LIVELY ISLAND. They were required back at SAN CARLOS to maintain the rate of offload into the BMA. Once again it was not clear to all who was operating these LCUs

A0784

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T0125A0723  
A0841  
A0619

10. During 7 Jun F4 lay up recovering from her overnight trip in from FEARLESS and started work when INTREPID LCUs left at 2000. F1 did some discharge work on this day but also was sent to BLUFF COVE to transfer some troops from one side of the COVE to the other. She then assisted in the offload of SIR TRISTRAM.

11. At 080400 5 Bde sailed F4 to GOOSE GREEN up the CHOISEUL SOUND to collect the communications vehicles of 5 Bde Main HQ. She was due to return the next night but contrary, we understand, to instructions she sailed early and was sunk by aircraft late on

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8 Jun. When she left, 5 Bde Advanced HQ were unaware that SIR GALAHAD would arrive 7 hours later. The decision to use F4 for this task was taken with the full agreement of the ABU, and Major SOUTHEY-TAILYOUR.

A1678  
A0726  
A1677

12. When SIR GALAHAD arrived at 081100 there was only one LCU (F1) and the mexifloat available to carry out her offload of men and equipment.

A1679

13. Poor communications between 5 Inf Bde Fwd, 5 Inf Bde Main HQ AND CTG 317.0/CTG317.1 made a major contribution to the somewhat confused state of affairs at FITZROY. (Communications Annex E12)

A1572-6  
A0787/9CONCLUSIONS

14. It is concluded that:

- a. The beach was chosen with considerable care, a limited beach survey was completed but in fact was the only suitable beach in that vicinity. (para 1 and 2).
- b. No one knew before the arrival of the ABU that the beach would not be workable throughout any 24 hour period. (paras 1, 2 and 4).
- c. The planned composition of the ABU was satisfactory but in the end the Michigan tractor was unusable due to terrain. (paras 4,6).
- d. The OIC ABU did not inform anyone outside the FITZROY area of the limitation in beach usage. It was in fact the responsibility of 5 Inf Bde Advanced HQ to do so but did not occur. (para 5).
- e. Commanders at the planning level were unaware that the beach could only be used for the offload of supplies for 16 hours of any 24 hour period. It did not become a major matter of importance however until the WG were to be disembarked from SIR GALAHAD. (para 4,5).
- f. A shortage of MHE was more critical to the offload of SIR TRISTRAM rather than a shortage of craft. (para 6). However, the BMA was well placed close to the beach.
- g. It was not possible to complete the offload of SIR TRISTRAM on 7 Jun and sail her that night before SIR GALAHAD arrived. (para 7).
- h. Landing craft assets on 7 Jun were more than adequate for the offload of SIR TRISTRAM. (para 9, 10).
- j. If 5 Bde Advanced HQ had known that SIR GALAHAD was to arrive on 8 Jun they may well have reconsidered their decision to send F4 to GOOSE GREEN and kept her to assist in the offload of both ships. (para 11)

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k. More than 1 LCU and 1 Mexifloat were needed to ensure the rapid disembarkation of personnel, stores and equipment from both SIR GALAHAD and SIR TRISTRAM. That this was not so is due to the fact the 5 Inf Bde did not know she was coming; nor what she was carrying. (para 12)

l. It is considered that no one individual was to blame for these events; each one, small in its way, added up to a very difficult situation. What was unacceptable was that poor communications from FITZROY to CTG 317.0 and CTG 317.1 prevented an adequate flow of information.

RECOMMENDATIONS

15. It is recommended that:

a. Units given control of amphibious units must be trained to have full knowledge of their capabilities and limitations.

b. Units given control of forward amphibious units must have compatible and working communications with the amphibious commander.

c. In future operations of this nature more MHE is required to be available to ABUs.

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E8 DATED 23 SEPT 82

DESTINATION FOR OFF LOAD SIR GALAHAD

1. It was apparent during the Inquiry that confusion had existed over the precise destination of SIR GALAHAD, and the differentiation between 'the BLUFF COVE area', BLUFF COVE and FITZROY. The two sites however do pose totally different navigational problems and although only 3½ miles apart involve a sea passage of some 9 miles between them.
2. CTG 317.0 always intended that FITZROY should be the point of disembarkation. The only exception to this was Major G YEOMAN who briefed the Captain, SIR GALAHAD.
 

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A0286  
A0292  
A0563  
A0567
3. CTG 317.1 was in general only concerned that the Welsh Guards should assemble in BLUFF COVE. The point of disembarkation was not of particular interest as it was known that the bridge from FITZROY to BLUFF COVE was passable for foot soldiers. General MOORE understood the point of disembarkation to be FITZROY.
 

A1034  
A1582  
  
A0960
4. 5 BRIGADE were not concerned with the exact location. The soldiers could march from FITZROY to BLUFF COVE if necessary, provided that the heavy equipment was transported. There was very close contact with CTG 317.1's staff and reason to believe that such details were passed, with adequate time to inform those concerned.
 

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A1582  
A1584  
A0149  
A1584  
A0959  
A0147  
A1392  
A1426  
A1432  
A0644
5. The Welsh Guards at all times believed the disembarkation point to be BLUFF COVE.
 

CTG 317.0  
080052Z  
0621287  
CTG 317.1  
0805557  
070030  
A0489  
A0257
6. All signals originated by CTG 317.0 refer to FITZROY, signals originated by CTG 317.1 always refer to BLUFF COVE. It is pertinent however that to some members of CTG 317.0 staff they were interchangeable.

DISCUSSION

7. That there was confusion over the destination is plain. The need to be precise was not appreciated by the Land forces (paras 3 to 5) nor some of CTG 317.0's staff.
8. If the Welsh Guards had been made aware that they would be taken to FITZROY at an earlier stage than 081130 measures could have been taken to modify their instructions and consequently to have landed the Guardsmen within half an hour of arrival at FITZROY.

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~~RESTRICTED~~CONCLUSIONS

9. That looseness of nomenclature crept in and that the significance of this was not apparent to staff officers and those in relevant command positions was a contributory factor to the WG being on board SIR GALAHAD at the time of the attack.

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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX E9 DATED 23 SEPT 82

1ST BATTALION WELSH GUARDS

1. The 1st Battalion Welsh Guards were landed in SAN CARLOS on 2 Jun from CANBERRA having transferred from QE II in SOUTH GEORGIA. They were required to move on foot to an assembly area some 6 Km from the landing point. The Guards were required to take with them a quantity of heavy equipment, namely mortars, 0.5" Machine Guns and ammunition. Although Land Rovers had also been landed, these proved to be unusable in the boggy terrain. During this initial march, the Commanding Officer estimated a sustainable speed of advance of 1 Km/hr, for a duration of 2 days. A1361  
A1369  
A1364  
A1366/7
2. To assist in the support of the southern flank, a plan was proposed to march the Battalion over the SUSSEX MOUNTAINS to the DARWIN/GOOSE GREEN area. To support this move in the transportation of the heavier equipment, Snocat vehicles were to be provided; helicopters were not available. The need to preserve the fighting capability of these troops was emphasised in that the move was to be the prelude to possible fighting. In the event petrol was not available for the Snocats and the civilian tractors became bogged down. After a march of 7 Km it became apparent to the Commanding Officer that any advance, even by leaving the heavier kit for later transportation, would leave his force unbalanced. The aim of the move to DARWIN was only a stage in the move to BLUFF COVE and thence, if required into battle. They returned to SAN CARLOS. A1011  
A1369  
A1372  
A1372
3. On the morning of 5 Jun instructions were received to split the Battalion, one half to embark in SIR TRISTRAM and the other in HMS INTREPID. This was in accordance with Plan 1. During the loading this order was rescinded. The following night the whole Battalion embarked in HMS FEARLESS and sailed for a rendezvous with 4 INTREPID LCUs off ELEPHANT ISLAND. When the LCUs failed to appear the decision was made, in conjunction with CTG 317.1, to split the Guards; 2 Coys to proceed with the Commanding Officer, the remainder to return in the ship to SAN CARLOS. CTG 317.0  
0321104  
Jun
4. Instructions were issued by OCGW to Major G SAYLE now in charge of the troops returning to SAN CARLOS
- a. to keep his force and equipment together; A1432
  - b. to be landed the following night at BLUFF COVE;
  - c. endeavour to obtain a considerable list of stores. A1387
- The instructions about separating troops and kit were emphasised because of earlier experience in the FALKLANDS. A1389
5. The first 2 Coys reached BLUFF COVE and the remaining Companies were embarked in SIR GALAHAD at 071500. During the briefing providing the instructions to embark, Major SAYLE understood that a similar

operation would be mounted to the night before, viz 2 LCUs would R/V with SIR GALAHAD and transport the men to BLUFF COVE. This was not however the understanding of [redacted] who gave the briefing. In addition Major SAYLE was informed that the stores requested by the Commanding Officer, Welsh Guards would be provided.

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A1066

6. The troops embarked in SIR GALAHAD consisted of:

Prince of Wales' Coy	120 men
No 3 Coy	120 men
1 Mortar Platoon	35 men
'A' Echelon of the Battalion	45 men
Engineers Troop	40 men

The equipment included:

300 Mortar ammunition (HE and smoke)
66mm rockets
Mineclearing equipment
10 cases Hexamine
Electrical generator

7. On arrival Major SAYLE became OC Troops and commenced the normal duties undertaken by embarked troops in an LSL. The equipment was stowed by the troops under the direction of the Chief Officer, SIR GALAHAD. [redacted] agreed later that he would not assume the duties of OC Troops; this was correct and in accordance with the LSL Handbook.

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8. The sailing time was delayed as described in Annex E5 para 17. The ship finally anchored off FITZROY settlement at 081100 Jun. That no preparations had been made to offload the LSL is covered in Annex E10 para 3. At approximately 1200 a partially loaded Mexeflote and LCU arrived at SIR GALAHAD and Major SAYLE was invited to load his men on top of the ammunition in both craft and go ashore in FITZROY leaving his equipment to follow on. This instruction was in direct conflict with his instructions from his Commanding Officer (see para 4). In addition, from an intelligence briefing on 4 Jun both Major SAYLE and his Commanding Officer believed the bridge at FITZROY to be impassable for troops or vehicles. It was thought therefore that the march from FITZROY to BLUFF COVE was some 15-18 miles rather than 6 miles. Major SAYLE sought advice from 5 Brigade's Forward HQ at FITZROY. This had to be done via the Beach Unit comms net, which in turn took a message ½ mile up the road to FITZROY SETTLEMENT. A plan was proposed to land the 16 Field Ambulance by Mexeflote and the Welsh Guards were to be taken by LCU in two trips to BLUFF COVE. The details of the offload are given in Annex E10. At no time was a direct order to disembark given to Major SAYLE by a superior officer. [redacted] in his evidence to the Board stated that he gave a direct order, however this is denied by Major SAYLE and no other corroborative evidence could be found. [redacted] who accompanied Major SAYLE for most of the time on board, also states that no direct orders were issued.

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A0709

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9. After further delay, due to the conditions of the beach, and the landing of the advance elements of 16 Field Ambulance the Welsh Guards commenced loading into an LCU at 1630. The attack occurred at 1710.

#### DISCUSSION

10. Fitness. During the course of the Inquiry implied criticism of the fitness of the Welsh Guards was noted. Whilst it is agreed that their standard of fitness was not as high as that of the Commandos or 2 Para, the added task of taking a relatively heavy support load with them without the aid of helicopter or vehicle support, must be considered. Additionally this move was to be preparatory to battle and fresh troops were necessary. Bearing these factors in mind, the need to transport troops by sea was not demanded by inadequate fitness of the troops. The statement that the Welsh Guards were not as fit as 3 Cmdo Brigade is not intended to imply unfitness.

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A0937

A0999

A1011

A0941

A1062

11. Disembarkation. Major SAYLE received instructions to disembark at FITZROY by the [REDACTED] which were in direct conflict to the instructions given him by his Commanding Officer (paras 4 & 8).

12. There had been confusion over the intended destination, and up-to-date information concerning the route from FITZROY to BLUFF COVE was not made available (para 8).

13. No direct access to higher authority to clarify instructions or receive new intelligence was available (para 8).

14. Major SAYLE had no previous experience of amphibious warfare; he was unaware of the delay imposed by the limitations of working the beach.

A1472

15. The ABU Commander and [REDACTED] of CTG 317.0 staff were unprepared for the arrival of SIR GALAHAD and the Welsh Guards (para 8). A plan was eventually proposed which satisfied all the people concerned; however, this only evolved after the assets had departed SIR GALAHAD for the shore and the situation was irretrievable for several hours.

16. The only alternative, at the time the decision was required, was to go ashore without kit and await transfer by some means to BLUFF COVE. This alternative is only attractive with hindsight with knowledge of the delay, the state of the bridge, and of the air attack; the actual events must be considered as the facts presented themselves to Major SAYLE.

#### CONCLUSIONS

17. In the opinion of the Board the decision by OCGW not to proceed with his cross country march to DARWIN was reasonable (para 1 and 10).

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18. Resulting from 17. above, and the lack of helicopter resources, there was a clear necessity to move the WG by sea (para 10).

19. Major SAYLE correctly assumed the duties of OC Troops and carried out the duties associated with this well (para 7).

20. Major SAYLE was not aware on 8 Jun that FITZROY Bridge was passable to infantrymen (para 8).

21. The situation as seen by Major SAYLE at 081205 is very relevant in that his last orders were:

- a. To land at BLUFF COVE;
- b. to allow no separation of his men or equipment;

and that he knew his route from FITZROY by land would entail a 15 mile march. Taking into account that he also believed the landing craft would return relatively quickly then the Board consider his actions to have been justified (paras 4,8,11,14,15,16).

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E10 DATED 23 SEPT 82

OFF LOAD OF RFA SIR GALAHAD AT FITZROY, 8 JUNE 1982

1. RFA SIR GALAHAD arrived off FITZROY SETTLEMENT at 081115 Jun approximately with 2 Coys The Welsh Guards, 16 Field Ambulance Unit, and 4 Fire Units of Rapier embarked, with associated equipments and one SEAKING Helo.
2. The Amphibious Beach Unit [redacted] and the representative of 5 Brigade's Forward Brigade Maintenance Area (BMA) [redacted] 2 PARA, were ignorant of any plans to offload SIR GALAHAD at FITZROY. [redacted] A0686 A1674
- [redacted] was embarked in SIR TRISTRAM but had not been warned of the arrival of this ship, nor of the nature of her cargo. At the time of arrival however he had just read the signal instructing SIR GALAHAD to sail with the Welsh Guards and 16 Field Ambulance. The signal was in SIR TRISTRAM's signal file. A0638
3. Because of the lack of warning, no preparation had been made for the timely off-load of the new arrival. Indeed 1 asset, LCU F4, had been despatched earlier that morning at 080400 to collect equipment for the 5 Brigade BMA on the premise that adequate assets would remain at FITZROY to offload SIR TRISTRAM. The LCUs were at this time under the Tacon of 5 Brigade and [redacted] believed 5 Brigade to be in charge of the offload. It has been indicated by witnesses that adequate time and means were available by which to inform 5 Brigade's Forward BMA (see Annexes E8 & E11). HF communications were established at this time. A0707 A0723 A1650
4. High water occurred at 1107 (see Annex E14); the beach therefore was not workable with Mechanical Handling Equipment until 1315 (see Annex E7 para 6). Both the LCU and Mexeflote were loaded with ammunition ready for the beach to be reworked. There was room on these assets to accommodate at least 100 men, without their support equipment, although this would have necessitated sitting on ammunition pallets. A0808 A0644 A0740 A0741
5. Offloading the Rapier Units commenced without delay using the embarked SEAKING.
6. The LCU carrying the Captain SIR TRISTRAM, [redacted] went across to SIR GALAHAD at 1200 within an hour of her arrival to investigate her requirements for off-loading. On arrival [redacted] advised the OC Troops, Welsh Guards (Major SAYLE) to get his Troops on board the partially loaded assets to take them ashore at FITZROY. The advice was rejected because the Welsh Guards expected to be landed at BLUFF COVE, and had received specific instructions not to be separated from their kit. (See Annex E9). Advice from the forward BMA was then requested via the VHF link with the [redacted] A0644 A1444 A1450

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7. A plan was evolved by discussion between the [REDACTED] which proposed to:
- a. unload the assets of their current load;
  - b. use the Mexeflote to land the Ambulance Unit and its vehicles;
  - c. use the LCU to ferry the Welsh Guards to BLUFF COVE in 2 trips.

A0644  
A1450

The Mexeflote and LCUs proceeded inshore at 1230. [REDACTED]

[REDACTED] was most eager to get his men ashore and set up his unit. He believed his unit and function to warrant the highest priority amongst those present. The time taken to land the advance party was also short compared with the delay imposed by taking Welsh Guards round to BLUFF COVE. Conflicting evidence was received by the Board on the ensuing arguments.

A1131

- a. [REDACTED] claims that approval was given by 5 Brigade BMA to change the priorities in his favour and land an advance element of the Field Ambulance in the first asset to return to SIR GALAHAD. This claim is denied by [REDACTED]
- b. [REDACTED] also claims that an amicable agreement had been reached between himself and Major SAYLE. This does not agree with the evidence of Major SAYLE.

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A1680

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8. There was a delay of some 2½ hours during which time both assets were ashore being unloaded. Although the need for some urgency in the unload was appreciated by the men ashore (because of the obvious vulnerability of the LSLs) no special measures were taken to accelerate the offload. The embarked troops were unaware of the reason for the delay. The LCU returned to the ship at 1500.

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A0735

9. As a result of this delay, tension between the various elements competing for landing assets increased. A confrontation took place publically on the stern gate when the LCU eventually arrived.

[REDACTED] stated that the original plan was modified with agreement from 5 Brigade For'd HQ and that he was to go ashore with a small contingent of the Field Ambulance. This altercation ended when [REDACTED]

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as OC Troops. Major SAYLE

10. As a result of this argument the advance elements of 16 Field Ambulance embarked in the LCU for passage ashore. [REDACTED] undertook to arrange possible helicopter transport for the Welsh Guards.

A1131

A1132

11. When the Field Ambulance elements had disembarked at 1530 the LCU was instructed to proceed to the jetty in FITZROY to collect

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fuel and rations. This was known to be in short supply at BLUFF COVE and the opportunity to take the stores as well as troops influenced the original concept of the unloading plan. This caused a further delay in the eventual embarkation of the Welsh Guards. The LCU arrived back at SIR GALAHAD at 1610.

A0645

12. During his return to SIR GALAHAD, the coxswain of the LCU experienced failure of his hydraulic ramp lowering equipment. The standby pump had gone defective some time earlier in SAN CARLOS. This fault meant that the ramp could be lowered by gravity once only and could not be subsequently closed. When this information reached SIR GALAHAD arrangements were made to revise the offload plan and use the No 2 cargo hatch, just for'd of the Bridge superstructure to load equipment over the side. This meant re-positioning the stores from the stern trunking in the Tank Deck to below the hatch. Personal equipment in the 'Bergens' was removed for loading over the side. Meanwhile the Coxswain was trying to effect a repair to the hydraulic pump, and ship's officers were trying to find a new seal.

A0823/4

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A1453

A0825

13. The first net full of Bergens was loaded into the LCU by crane at about 1640. The men were mustering on the shade deck, port side and commenced to step over the rails of SIR GALAHAD onto the bows of the LCU. Ammunition was being assembled beneath the hatch ready for loading. Major SAYLE detailed a gunner to man his machine gun to give the LCU some protection. The attack was launched by 4 Skyhawk aircraft at approximately 1710Z.

A1455

#### DISCUSSION

14. The lack of advanced warning to those responsible for the offload indicates a failure in the Command and Control organisation of both CTG 317.1.2 and CTG 317.0.

a. 5 Brigade Main HQ at DARWIN were aware that SIR GALAHAD was due at FITZROY on the night of 7/8 June. No information reached [REDACTED] (para 2).

b. as the TACON of the LCU had been chopped to 5 Brigade, CTG 317.0 believed 5 Brigade to be responsible for the offload.

A0157

c. the ABU had no direct communications with CTG 317.0 although messages could be passed via SIR TRISTRAM. This was not done although under ATP 36 Art 150 the ABU remains under the control of the Naval Force at all time.

A0709

d. [REDACTED] of CTG 317.0s staff was in SIR TRISTRAM and read the night intention signal. He had no formal responsibility in this position and his presence was fortuitous in that he had navigated 2 LCUs into BLUFF COVE on the night before (Annex 1E para 11).

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15. The lack of information led to the assets being depleted by sending LCU F4 to GOOSE GREEN, and to the existing assets being loaded in preparation for the re-opening of the beach for working (para 3).

16. There was a general lack of assets available at the beach to unload ships in the shortest time under exposed conditions.

17. There was a lack of appreciation on the beach of the responsibilities for unloading the vessel; [redacted] believed [redacted] to have overall responsibility, while [redacted] considered it was his responsibility to direct the positioning of the stores about the BMA after unloading. This failing does not appear to have caused delay or contention.

18. No particular sense of urgency accompanied the unloading of the Welsh Guards or 16 Field Ambulance. This was partially engendered from the lack of air attack in preceding days. However, given the severe limitation of assets, and the state of the tide and beach little more could have been done with the exception of para 19 (paras 2 & 8).

19. The Board has investigated the possibility of landing the Welsh Guards on the Mexeflote and believe that the troops could have been landed within 1 hour of arrival. This would have meant leaving the equipment onboard until later. The option was not taken by the Welsh Guards because:

- a. misunderstanding over destination (Annex E8);
- b. contradiction in instructions concerning equipment (Annex E9 para 4);
- c. lack of awareness of time delay likely to ensue (Annex E9 para 14);
- d. stale intelligence over the state of the bridge (Annex E9 para 12).

20. Major SAYLE as OC Troops was placed in an invidious position by the conduct of [redacted]. The latter's disregard for the authority of OC Troops added to the tension and confusion onboard and undermined the control of offload exercised by the officers ashore (para 9 & 10).

21. The decisions made by [redacted] were based on sound argument and in considering the subsequent events in hindsight, were most fortuitous.

22. The Board considered the implication of the hydraulic failure in the LCU. The failure can be attributed to working conditions and lack of opportunity to repair the redundant hydraulic pump. The implication of the failure is that:

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- a. the stern gate was closed;
- b. cargo hatch No 2 was opened;
- c. slower loading of the troops.

It is thought possible that if a normal stern load had occurred 1 Coy could have left the ship at the time of the raid and therefore be exposed at sea during the passage to BLUFF COVE. The change in disposition of troops, equipment, and venting conditions within the ship cannot be assessed with any confidence with respect to the resultant casualties which would have occurred in the event of an attack (para 12, 13). It is considered that no alternative response to the defect was possible; the lowering of the ramp could well have rendered the LCU unusable for SIR TRISTRAM's later offload, and made the subsequent recovery of assets extremely difficult.

#### CONCLUSIONS

23. It is concluded that:

- a. There was no one major failure at FITZROY which led to the WELSH GUARDS being on board SIR GALAHAD when the attack occurred. The factors listed in b-g below all contributed to a confused situation.
- b. The weakness in Command and Control from 5 Brigade significantly affected the time for offloading the Welsh Guards, and thereby affected the casualties suffered. (para 14)
- c. The inability of CTG 317.0 to communicate with the Beach Master compounded this failure if it is accepted that ATP 36 is strictly applied, although no acknowledgement to this document has been given throughout the Inquiry. (para 14)
- d. The decision not to offload the Welsh Guards is accepted as reasonable in view of the knowledge available at the time (Annex E9 Conclusion 5).
- e. The lack of a clear understanding of the responsibilities of those ashore controlling the offload had no effect on the situation in the event. (para 17)
- f. The limited assets and the conditions of the beach rather than a lack of urgency caused the relatively slow offload. (paras 15, 16 and 17)
- g. The defect on the LCU ramp equipment had some influence on the proceedings but its overall significance cannot be assessed. The response to this defect was satisfactory. (para 22)

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~~RESTRICTED~~RECOMMENDATIONS

24. In future joint operations of this nature much more attention must be paid to the clear definition of support responsibilities both within Task Groups, and between Task Groups.

25. The failure of relevant information reaching 5 Brigade's BMA at FITZROY should be represented to the Army for further investigation.

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LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX E11 DATED 23 SEPT 82AIR ATTACK NARRATIVE

1. At about 1710 on 8 Jun RFA's SIR GALAHAD and SIR TRISTRAM were attacked by four Argentine aircraft believed to be A4 Skyhawks. Both ships were at anchor in Fitzroy Creek. SIR GALAHAD being about 300 metres offshore and SIR TRISTRAM about 600 metres to the North West of her (see Appendix 1). Both ships were pointing North but were swinging about their anchors from the effects of wind and tide, and at the time of the attack both were facing North West.

2. It was a clear sunny afternoon with  $\frac{2}{8}$  cloud cover. The LCU Foxtrot 1 [redacted] was alongside Sir Galahad embarking troops of Prince of Wales Company, 1st Bn Welsh Guards, from the port shade deck. Their front-line stores were being loaded into the LCU from the tank deck by the after crane. The mexiflote was just completing its offload of ammunition at the beach.

3. Warning of the air attack at SAN CARLOS was received by the Officer of the Watch of SIR TRISTRAM but not by his counterpart on SIR GALAHAD. Troops manning the Rapier batteries ashore heard aircraft flying up Bluff Cove valley a few minutes before the attack but were unable to see the aircraft.

T0700  
G0589

A1333-4

4. On SIR TRISTRAM the ship's defence teams were scanning the sky over the port side of the ship. Having heard that attacking aircraft had just approached SAN CARLOS from the South they presumed that aircraft might also attack Fitzroy from the South. In fact the four Skyhawks approached from the opposite direction. It is thought that they overflowed BLUFF COVE, rounded North East Point and flew due West along PORT PLEASANT at about 500 feet above sea level (see App: 1). They were hidden from view from the ships by the high tussock grass of PLEASANT ISLAND. Sweeping round the Eastern tip of PLEASANT ISLAND they dropped to an altitude of about one hundred feet, the leader being slightly higher. They flew in line ahead at an estimated 400 knots. As the first aircraft approached SIR GALAHAD's beam it began to bank to port and it released four bombs while banking over the bridge superstructure of SIR GALAHAD (see App 2). The leader continued to bank, passed over the flight deck of SIR TRISTRAM and then climbed away to the South. Because the aircraft was banking when it released its bombs they tended to diverge. Two landed in the water between the ships off SIR TRISTRAM's starboard bow. Two passed over the foc's'le of SIR TRISTRAM and hit the water off her port bow. One of these ricocheted on the water and exploded on the land mass called PLEASANT POINT, South West of the ships. The three bombs that landed in the water failed to explode.

T3613

5. The second aircraft followed about 200 metres behind the leader, and the third was 100 metres behind it. These aircraft did not bank until they had overflowed both ships. They approached the starboard beam of SIR GALAHAD in level flight at about 100 feet altitude.

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They both released their bombs (4) simultaneously, the second while passing over SIR GALAHAD midships. The four bombs from this aircraft remained in a tight cluster and travelled towards the stern of SIR TRISTRAM as the aircraft followed the flight path of the leader and climbed away to the South. Two of the bombs penetrated the stern of Sir Tristram, one fell in the water of her starboard quarter, while the fourth is thought to have exploded in the water underneath the transom. Of the two bombs that entered the ship one passed across the tank deck, entered No 25 Port Ballast Tank where partial detonation occurred. The second bomb also passed through 25 Stbd Ballast Tank into the sea without exploding (Annex F3).

Damage  
Report -  
Mr BURT  
STS

Damage  
Report  
Mr BURT  
STS

6. The <sup>irc</sup> third aircraft released a clutch of four bombs little more than 100 metres from the starboard beam of SIR GALAHAD. Three of these bombs entered the after accommodation areas on the starboard side of the ship at poop and upper deck level. One transitted the ship and made an exit on the port side of the poop deck in the region of the stewards' mess. The other two failed to explode but major fires accompanied by thick black smoke developed almost immediately. The fate of the fourth bomb is unknown. After making its attack the third aircraft overflew the two ships banked to starboard and climbed away to the North. The Blowpipe gunner on the flight deck of SIR TRISTRAM attempted to engage this aircraft as it flew into the distance, but he was knocked off his feet by the slipstream of the fourth Skyhawk.

T3614

7. It is believed that the last aircraft attacked the ships with cannon fire only. It flew lower than the first three but trailed them by about 300 metres. No bombs were seen to detach from it, but the Blowpipe gunners on SIR TRISTRAM observed cannon fire strafe their position on the flight deck. Evidence of cannon damage on the screen of the Second Engineer's cabin on SIR GALAHAD is visible on still pictures taken from video film of the ship shortly after the attack. The fourth aircraft climbed and banked to starboard after flying over the flight deck of SIR TRISTRAM and followed the third to the South.

T3744

8. It is considered that the weapons used in the attack were 500 pound bombs and cannon. There is no evidence to suggest that rockets, incendiary bombs or napalm were deployed.

T3616

The basis for this narrative is the testimony of [REDACTED] who saw the whole attack from a position ashore 300 metres from SIR GALAHAD.

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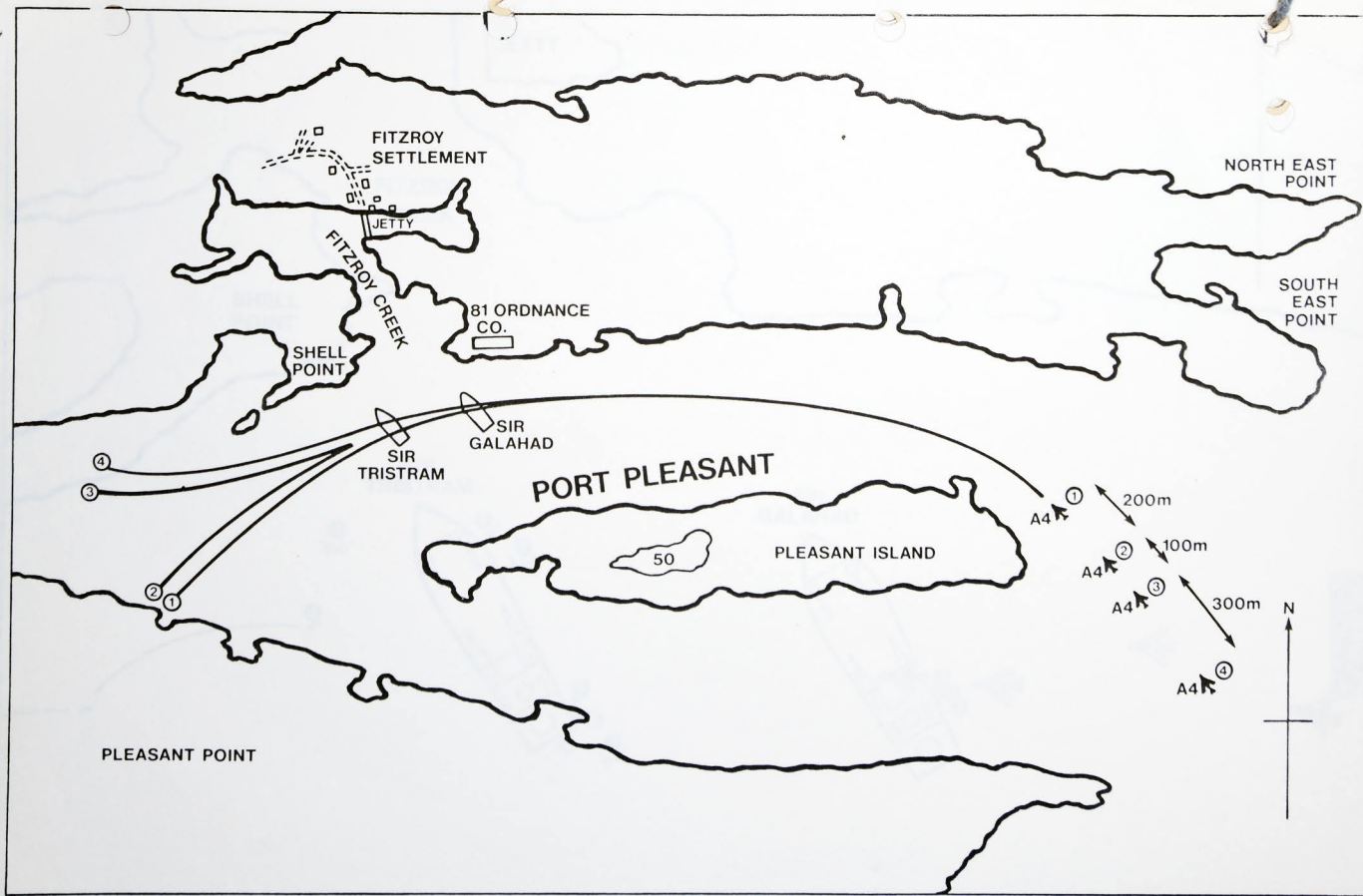


FIGURE ILLUSTRATING FLIGHT PATH OF AIRCRAFT ATTACKING SIR GALAHAD AND SIR TRISTRAM

E 11-4

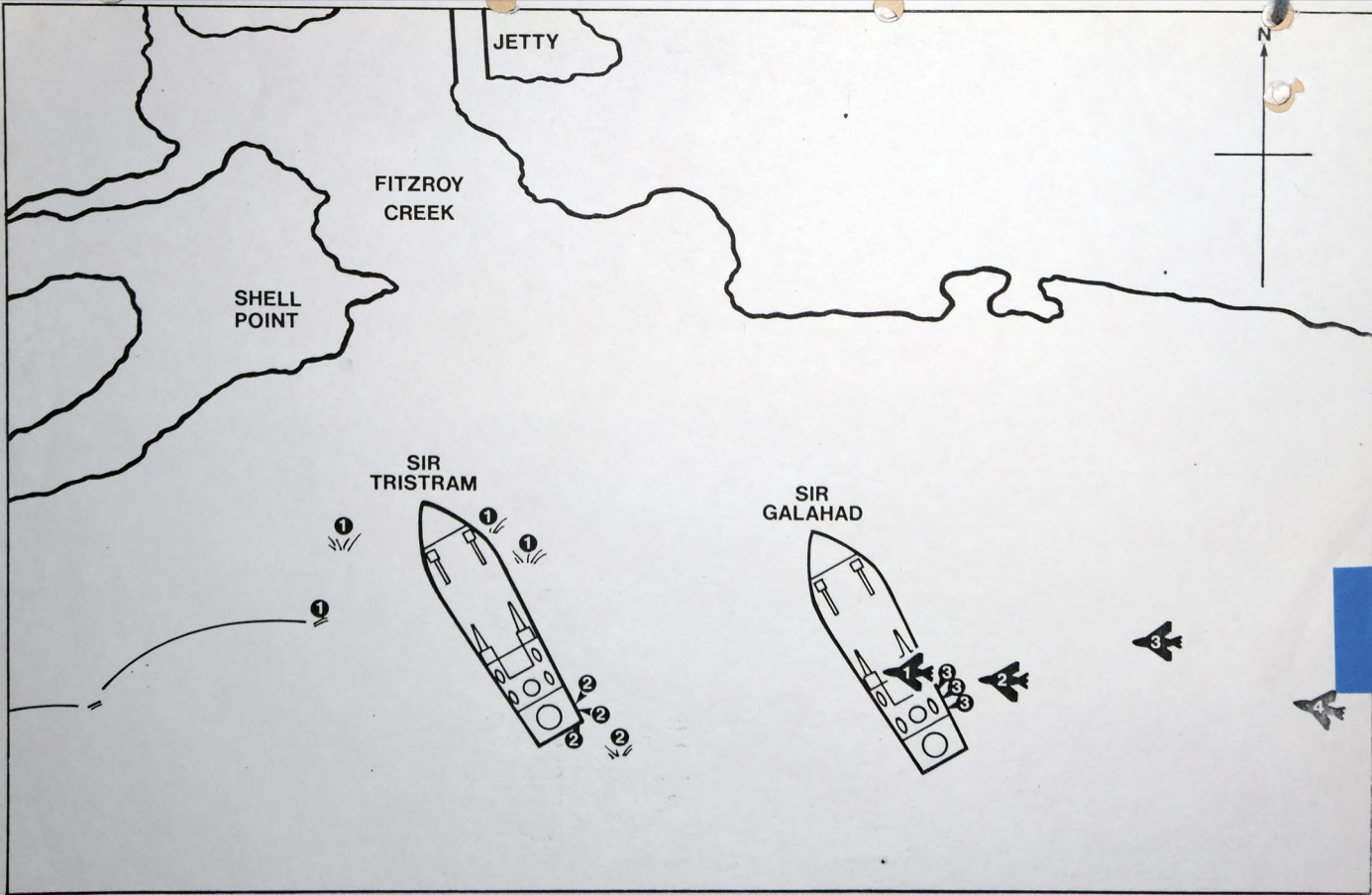


FIGURE ILLUSTRATING ATTACK PLAN OF ARGENTINE AIRCRAFT ON SIR GALAHAD AND SIR TRISTRAM

Position of aircraft indicate probable release points for bombs, and ringed numbers indicate final destinations of bombs. (Not to scale.)



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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
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ANNEX E12 DATED 23 SEPT 82

COMMUNICATIONS

1. Introduction. The Board did not carry out any investigation on the overall communication facilities available to Land and Sea Forces in the FALKLAND ISLANDS. It became apparent however that communications contributed to the problems experienced in transferring information to those most involved with the FITZROY situation. This Annex contains statements only on methods and circuits that were identified directly in the evidence.

COMMAND COMMUNICATIONS

2. At the highest level, with the exception of CTG 317.8 much of the transfer of tactical information was done between the Commanders concerned. This was a daily process, and in the case of CTG 317.0, and 317.1 the Staffs were co-located at this time, with regular twice daily briefings. Communications with CTF 317 and CTG 317.8 were by secure SATCOMS, (DSSS, NESTOR) and HF. The problems encountered with the secure speech systems are covered in Annex E2 para 10. A0928  
A0483
3. The traffic between CTGs rose to 1300 signals per day during the period under discussion. It was estimated that FLASH signals were taking approximately 1½ hours to get through, with OPERATIONAL IMMEDIATES taking some 6 hours. Communications at this time between HMS HERMES (CTG 317.8) and CTGs 317.0 and 317.1 were proving intermittently difficult. There is evidence to suggest signals were lost (Annex E6 para 15). A0903  
0904  
A0904
4. Communication between CTG 317.0 and the LSLs at FITZROY was through the RATT HF broadcast. The ships had been allocated temporary call signs and had set watch on LAAWC. Urgent messages to advise the ABU of the destination of SIR GALAHAD on 7/8 Jun could have been passed by either of these means (Annex E10 para 14c).
5. Communications between CTG 317.1 HMS FEARLESS and CTU 317.1.2 at DARWIN were satisfactory by day using an HF circuit but became unreliable at night. On some occasions the link broke completely when HMS FEARLESS left SAN CARLOS. At the ranges involved the ground wave element of the HF transmission were utilised; a mobile receiving terminal became masked by terrain phenomena. HMS FEARLESS sailed for TEAL INLET at 072235 however CTG 317.1 was confident that CTU 317.1.2 knew of the intentions of SIR GALAHAD. CTU 317.1.2 knew of these intentions but expected the ship to arrive under cover of darkness. The source of his information is not known but may well have been at a personal briefing. Some evidence suggests that radio communications were actually causing problems at this particular time. In an attempt to improve the communications across the Sussex Mountains a relay station was to be repaired on the night 5 Jun, however the Signal Squadron Commander and his Foreman of Signals were killed in a 'Blue-on Blue' helicopter engagement before this could be achieved. A1571  
A1571  
A0352  
A0959  
A1584  
A0348  
A1064  
A1064

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COMMUNICATIONS AT FITZROY

6. Naval Units: The only external communication facilities available to the naval units, including the Amphibious Beach Unit were in SIR TRISTRAM (see para 4 above). The VHF equipments used to establish control of the LCUs are not included in the statement as the command executive units were outside this limited range. A0709  
A0652
7. 5 Infantry Brigade Forward HQ: Initially any communication to and from this unit was via 2 Parachute Regt elements already established in FITZROY SETTLEMENT. A portable HF facility was available and adequate. Much of the information was passed during personal visits from the Brigadier. A1635  
- SUPP 2  
A1650
8. On the 7 Jun, 2 vehicles were brought in on MV MONSUNEN and provided the HF link by 080100. This link proved to be unreliable during the night: messages could still only be passed to DARWIN by relaying through the 2 Scots Guards at BLUFF COVE. Direct HF communications were established at 080900, VHF communications at 081045. Both these circuits were insecure; secure communications were achieved by 081300. Secure communications with SAN CARLOS could only be achieved through DARWIN. A1635  
- SUPP 2
9. There were no teleprinter facilities on 8 Jun and so no hard copy signals. Signal logs are very sparse, although records do confirm that messages to DARWIN had to be passed via the Scots Guards. Officers report that other messages were passed between the BMA and HQ. There is no record to indicate that any information was received via the HF link concerning the arrival of SIR GALAHAD. A1635  
SUPP 1

AIR RAID WARNING COMMUNICATIONS

10. The naval system for Air Raid Warnings are described in Annex E6 para 13.
11. The warnings were passed to the Rapier Fire Units by a retransmission from the LAWC circuit monitored by 'T' Battery 12th Defence Regiment. The Fire Units could also feed back any raid information for onward transmission to LAWC thereby providing a co-ordinated Naval and Land Force network. On this particular occasion an air raid warning was received on the HF link in BMA HQ but too near to the attack to allow the ground troops to prepare. A1280  
A1326  
A1685  
A1686

SECURITY

12. There was a real awareness by all Staffs of the need for security discipline on all circuits. Where breaches had been identified the matter was publicised; signals reminding units of the need for vigilance were sent. A0167  
A0967  
A1084
13. The Board received evidence to suggest that those operators using VHF radios for logistic circuits and control of assets did not consider that this provided a useful source of information to the enemy. Although the presence of Observation Posts (OPs) was

common knowledge the popular conception was that VHF transmissions were masked by the terrain around SAN CARLOS, and/or were of insufficient power to be monitored. The evidence indicates however that these transmissions were monitored and eventually gave the enemy intelligence that amphibious operations were being conducted at FITZROY (See Annex E1 para 11).

#### DISCUSSION

14. The traffic load encountered at the peak of the operation appeared to extend handling times to an unacceptable degree. The significance of this, and means by which the load might be reduced should be included in the overall analysis of Operation CORPORATE (para 3).
15. Although evidence is very limited there is a suggestion that some signals were lost (Annex E6 para 15), both signals involve the control of CAP and although by chance cannot be accounted as contributors in this case, the need for confidence in the reception of signals must be of paramount importance in the control of fast moving naval and military campaigns. (para 3)
16. The control of the ABU by CTG 317.0 was, when detached from the main concentration at SAN CARLOS at best tenuous, relying upon vessels in the area being in direct personal contact. If the Unit is to remain under the control of the Naval Force (Annex E10 para 14c) then the only means of achieving control is through continuous, secure communications. In the event of an LSL sailing before the arrival of the next ship, control of the ABU would have to rely on the communications of the support group in the area, if any (para 6).
17. The problems experienced by CTU 317.1.2 in attempting to contact his Commander when HMS FEARLESS put to sea is one unfamiliar in Naval communications. The effect on the control of ground troops could well be crucial. Further study of the subject is required. (para 5)
18. The difficulty in communicating between Main HQ in SAN CARLOS and DARWIN was appreciated within 5 Infantry Brigade and attempts were made early on to correct this situation. (para 5)
19. Taking account of the preparatory nature of the task of Major ROLFE-SMITH at FITZROY his communications appear to have been adequate for his requirements. (para 7)
20. The arrangement for promulgating air raid warnings was good, however on this occasion the SHUTTER report was only received about 10 minutes before the attack in the LAAWC ship. By the time this was retransmitted on the Battery Net the ground troops had no time to pass the warning and prepare for the attack. (para 11)
21. The lack of awareness by some officers operating VHF portable sets that useful information could be extracted from their

conversations causes some concern although obviously the subject has been considered but rejected on spurious grounds. It is believed by the Board that in any voice communications required in fast moving situations useful information will be extracted where the enemy is at such close quarters with our own forces. Evidence indicates that one of the reasons that the attack at FITZROY was initiated was because information was intercepted at an enemy OP from circuits involved in the off load of the LSLs (Annex E1 para 11) (para 13). This situation once again emphasises the need for secure voice communications equipment at a portable level.

#### CONCLUSIONS

22. It is concluded that:

- a. signal traffic load caused an increase in handling time to greater than that used previously for planning purposes.
- b. the ABU cannot be controlled by the Naval Force unless in direct personal contact with a ship with a suitable communications fit.
- c. communications with the Command ship must not be susceptible to her movements.
- d. the arrangements for promulgating air raid warning throughout all Forces was good. (But see E6 para 22 for LSL listening)
- e. information derived from insecure VHF circuits used in the control of logistics was a significant contributor to a raid being mounted on the LSLs in FITZROY.

#### RECOMMENDATIONS

23. It is recommended that:

- a. the significance of extended handling times on communication be studied in the overall evaluation of Operation CORPORATE.
- b. The provision of portable secure HF communications to ABUs and Landing Craft be implemented.
- c. Further study be made on the dependence of communications between ship and land forces at HF frequencies.
- d. Portable secure VHF voice communications equipment be provided for the of logistic control circuits.



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ANNEX E13 DATED 23 SEPT 82STAFF COMPOSITION, PERFORMANCE AND TRAININGINTRODUCTION

1. In exploring all avenues that might have had a bearing on the actions leading up to the eventS, of 8 Jun, the Board needed to look at the size, composition and background of the Staff provided to CTG 317.0 (COMAW). This could not be an in depth study but rather just sufficient questioning to answer our concern and to consider the effects of stress and fatigue on a staff with regard to their capability as decision makers. What we found could be described as barely satisfactory and we felt that this might well be a case for a subsequent deeper study; such a study may also be initiated by COMAW's: own Report of Proceedings and a paper he has put in hand to be written.
2. COMAW's staff is normally about 5 strong consisting of RN, RM and RCT officers and they are engaged in the regular planning for, and execution of, national and NATO amphibious exercises. On this occasion, for an immediate and unexpected operation, they were rapidly expanded to a number near 20.

STAFF COMPOSITION AND PERFORMANCE

3. The expanded staff was complete by the time FEARLESS reached ASCENSION. For the flying operations there were 3 Lt Cdr Taskers which was reasonably satisfactory. An ex-helo Squadron pilot of Cdrs rank was available to go around the 4 or 5 Squadrons and there was a further AEO Cdr. For the LSL liaison and tasking COMAW was fortunate to be able to keep the experienced Major YEOMAN RCT (G2 AW) who was in the process of being received by Major TODD. COMAW felt a third RCT officer to work a proper watchkeeping system would have reduced the strain and fatigue on YEOMAN and TODD. A0166
4. The proper Staff Plans Officer (SPO) is a USN officer and therefore was not allowed to go on CORPORATE; he was not replaced and COMAW felt that what was actually required was a RN Cdr with seagoing command experience to assist SOO. A1066
5. The Staff Officer Operations has only just joined the staff at very short notice on 5 April. His predecessor had some compassionate reason for not going South. He had been due to join FEARLESS on 6 April as the Executive officer. For either job he had no previous training in amphibious warfare (except classroom instruction on Long 'N' course); he did not do the Amphibious Warfare Planning Course (AWPC) before joining. He became extremely tired and prone to "nodding off for a second or two" A0186  
A0187  
A0188  
A0314
6. Two Staff Warfare Officers (SWO) also joined and were Air Defence specialists but in fact were also used for general warfare duties. One was excellent, the other barely satisfactory; this second officer eventually left this staff to join INVINCIBLE. When A0166  
A0311

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this happened the very proficient and able remaining SWO became overloaded.

A0313

7. The Flag Captain also acts as Chief of Staff (COS) but in view of the frequency of air attacks and being involved in both day and night operations he was not as fully committed in this Staff aspect of his job as much as either he or COMAW would have liked.

A0166

STAFF TRAINING

8. The Board were somewhat surprised at the lack of previous amphibious training by the Staff. COMAW and [redacted] had been involved in the Spring amphibious exercise just preceding CORPORATE as had the GS01 and G2(AW). However neither COMAW or [redacted] had done the AWPC before taking up their appointments. [redacted] should have done it even if taking up the appointment of [redacted] since he would require a close knowledge of amphibious operations if he was to act as [redacted]. The new G2(AW) did the AWPC in Dec 81.

A0007

A0187

A0591

STAFF FATIGUE

9. CTG 317.0 staff undoubtedly became fatigued even by the time of the SAN CARLOS landings. The effects were very variable, some individuals suffering more than others. Although there is no evidence of major errors of judgement or ill-considered decisions occurring as a result of fatigue, performance did deteriorate generally and some officers were obliged to assume an extra burden to relieve their colleagues. Fatigue was often unnoticed by some Staff Officers and became manifest only as reduced mental activity in processing the data constantly arising from a fast moving situation. This became particularly apparent when newly arrived officers impressed with their relative speed and clarity of thought.

A0168

A0314

A0495/6

A0354

A0170

A0495

DISCUSSION

10. With regard to staff composition, the Board believe that with one exception the staff worked remarkably well. To consider the short notice most of them received of the job, and that very few of them had any amphibious training, the result was very creditable. In their questioning the Board felt that one of the less satisfactory aspects was that many of the staff 'did their own thing' and not being totally aware or practised in the whole amphibious scene were not able to work into the horizontal matrix of the staff and look out for each other more. This would lead to added strain and fatigue for some.

A0356

11. A further difficulty arose with respect to [redacted] who had had no previous amphibious training (para 5) and who had to try and catch up on his knowledge as well as conduct the staff during the passage to the TEZ. By the time the landings in SAN CARLOS were complete he was "absolutely exhausted" and of little further use. This meant additional work for COS, [redacted] for part of the time and as COS for most the time.

A0166

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12. [redacted] was also involved in the decision to send SIR GALAHAD to FITZROY in the night 7/8 June based on SIR GALAHAD's signal stating that she intended to remain at SAN CARLOS overnight. (Annex E2 paras 34 and 35q). On that occasion he was the most Senior Staff Officer involved in the decision making process and firstly does not seem to have grasped the full import of what was going on and secondly made an error of judgement in not advising the Duty Staff Officer to call the Commodore.

13. When interviewing [redacted] the Board were unimpressed by his responses to questions which were for the most part superficial and were of little use; his memory of events appeared vague and confused.

14. The Board consider that COMAW himself was very much aware of the difficulties within his staff and, together with COS, made constant and continuing efforts to ensure the smooth continuity of operations.

15. Training. The more that we have withdrawn from amphibious operations in the past years the greater has become the lack of expertise in general by warfare officers. To have served at SUEZ for example an officer must now be at least 44 years of age. Keeping the art alive and keeping a reasonable nucleus of officers trained, and with experience, is an essential for the future.

16. Fatigue. With the exception of [redacted] fatigue played only a very minor part in any of the events we have covered. Staff officers were certainly tired and at times, very tired, but we have only identified one occasion when this had a significant effect.

17. General. The Board wish to record that they believe that CTG 317.0 staff did a first class job under very difficult and fast moving conditions. They didn't always get it right nor did they do to the degree that many outsiders might have liked, but such people rarely understand the difficulties of a staff.

#### CONCLUSIONS

18. It is concluded that:

a. The cohesiveness of the staff was reduced by the speed at which it was expanded and the lack of experience of working together before operations started. (para 10)

b. Once operations become fast and furious staff officers are naturally kept very busy in their own particular field; cross fertilisation of ideas or plans become more difficult. (para 10)

c. There was a lack of amphibious training prior to officers taking up their appointments. Those officers appointed to the staff at short notice only had a limited knowledge of amphibious operations for the most part. (para 15)

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d. Stress and fatigue affected the performance of [REDACTED] to the extent that by half way through CORPORATE he was exhausted and of little use to the staff thereafter. The degree of competence of this officer is open to question and additionally the Board consider that he made two errors of judgement during the night 7/8 June in that: (para 11-13)

(i) He did not instruct the Duty Staff Officer to inform CTG 317.0 of SIR GALAHAD's signal DTG 080015.

(ii) He did not verify the content of SIR GALAHAD's signal himself not the adequacy of the draft reply.

e. The justification for placing [REDACTED] in a difficult and unprepared position is questionable. (para 5)

f. COMAW's Staff did well overall to compete with a very wide and demanding range of tasks. (para 17)

#### RECOMMENDATIONS

19. It is recommended that:

- a. Officers appointed to amphibious warfare appointments should undertake the appropriate courses before joining.
- b. The future requirement for officers generally to be trained in AW be established.
- c. COMAW be invited to comment further on the performance of [REDACTED]

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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
 ANNEX E14 DATED 23 SEPT 82

TABLE 1. INFORMATION FORECAST ISSUED BY CINCFLEETWOC  
TO MODUK NAVY FOR FALKLAND ISLANDS 01-08 JUNE '82

010800Z TO 01200Z	<p><u>WIND</u> W or SW 4 or 5 occnl 6 at first decreasing 3 in NW later.</p> <p><u>WX</u> Heavy snow shwrs bec isolated by end of period.</p> <p><u>VIZ</u> Good outside showers.</p>
012000Z TO 020800Z	<p><u>WIND</u> W to NW 4 or 5</p> <p><u>WX</u> Cloudy mist/fog patches to N and W</p> <p><u>VIZ</u> Good but mod/poor in mist/fog</p> <p><u>CLOUD</u> 4/8 - 6/8 Sc base 1500-2000' increasing to become 6/8 - 8/8 St/Sc base 200-400'</p>
020800Z TO 022000Z	<p><u>WIND</u> NW 4 or 5 veering N increasing 6</p> <p><u>WX</u> Occnl drizzle later in period</p> <p><u>VIZ</u> Good bec mod with fog patches</p> <p><u>CLOUD</u> 6/8 - 8/8 Sc 2000' with 3/8 St 1000'</p> <p><u>INDRIZZLE</u> 8/8 Sc 1000 to 1500'          6/8 St 800'          4/8 St 400''</p>
022000Z TO 030800Z	<p><u>WIND</u> NE 4 or 5 backing W 4 or 5</p> <p><u>WX</u> Cloudy with occasional rain or drizzle and fog patches</p> <p><u>VIZ</u> Good reducing to poor in drizzle</p> <p><u>CLOUD</u> 6/8 - 8/8 Sc base 2000'          4/8 - 6/8 St base 400' in rain</p>
030800Z TO 032000Z	<p><u>WIND</u> N to NW 4</p> <p><u>WX</u> Cloudy with rain at times</p> <p><u>VIZ</u> Mainly moderate</p> <p><u>CLOUD</u> 5/8 - 7/8 Sc base 1200'-1500'</p>

PERIOD	FORECAST
032000Z TO 040800Z	<p><u>WIND</u> Vrb mainly NW 3 or 4 increasing 5 later</p> <p><u>WX</u> Overcast with occasional drizzle</p> <p><u>VIZ</u> Moderate or poor with fog patches</p> <p><u>CLOUD</u> 5/8 St surface to 400'</p>
040800Z TO 042000Z	<p><u>WIND</u> N 4 increasing 6 or 7 later from the West</p> <p><u>WX</u> Occasional rain spreading from the west later</p> <p><u>VIZ</u> Moderate or poor with extensive mist or fog improving moderate or good for a short time</p> <p><u>CLOUD</u> 6/8 - 8/8 Sc 800-1000' but with 6/8 to 8/8 St Base 100-300' persisting on windward slopes</p>
042000Z TO 050800Z	<p><u>WIND</u> N or NE 4 backing NW and increasing 6 occnly in the west</p> <p><u>WX</u> Rain or drizzle at times</p> <p><u>VIZ</u> Moderate or poor with fog patches. Becoming mainly moderate</p> <p><u>CLOUD</u> 3/8 St Surface becoming 3/8 St 600' 6/8 St 200'                      8/8 Sc 1000 to 2000' 8/8 St 400'</p>
050800Z TO 052000Z	<p><u>WIND</u> NE or N 6 to gale 8 bec cyclonic variable from the SW then bec NW or W 5 or 6</p> <p><u>WX</u> Overcast with occasional rain or drizzle becoming showery later</p> <p><u>VIZ</u> Moderate, locally poor becoming good outside showers in precipitation at first Becoming broken Cu base 1500' with occasional CUNIM base 1000' later</p>
052000Z TO 060800Z	<p><u>WIND</u> W veering NW to N 5 or 6</p> <p><u>WX</u> Rain spreading from west</p> <p><u>VIZ</u> Moderate becoming poor in fog</p> <p><u>CLOUD</u> 6/8 - 8/8 Sc base 1500 to 2000' lowering to 800 to 1000' 8/8 St base 200 to 400'</p>

PERIOD	FORECAST
060800Z TO 062000Z	<p><u>WIND</u> NW 4 or 5 bec N 6 or 7 temporary gale 8 ahead of fronts and becoming cyclonic variable in SW quadrant</p> <p><u>WX</u> Overcast with rain/drizzle spreading East, fog patches breaking to cloudy in west later</p> <p><u>VIZ</u> Moderate or poor</p> <p><u>CLOUD</u> 6/8 to 8/8 Sc base 1200'. Extensive low St at/near surface in precipitation. Lifting and breaking in west later</p>
070800Z TO 072000Z	<p><u>WIND</u> N 7 to gale 8 backing W decreasing 6</p> <p><u>WX</u> Rain at times</p> <p><u>VIZ</u> Moderate, locally poor in rain</p> <p><u>CLOUD</u> 8/8 St 200 to 400'. Lifting to 800 to 1000' at times</p>
070800Z TO 072000Z	<p><u>WIND</u> S4 to 5 briefly becoming light then NW 6 to 7</p> <p><u>WX</u> Occasional showers</p> <p><u>VIZ</u> Over 10NM reducing to 1NM in showers</p> <p><u>CLOUD</u> 3/8 Sc base 2500'</p> <p><u>IN SHOWERS</u> 7/8 Cu base 1500' 4/8 St base 400'</p>
072000Z TO 080800Z	<p><u>WIND</u> NW 6 or 7 locally 8 in extreme east at first</p> <p><u>WX</u> Occnl rain in extreme east at first otherwise showers</p> <p><u>VIZ</u> Good but locally moderate in east at first and in showers</p> <p><u>CLOUD</u> 4/8 to 6/8 Cu base 1500' with isolated CUNIM base 1000'</p> <p><u>IN EAST AT FIRST</u> 6/8 - 8/8 Sc base 1200' 4/8 - 6/8 St base 500' - 1000'</p>

PERIOD	FORECAST
080800Z TO 082000Z	<p><u>WIND</u> NW 5 or 6 bec W 6 or 7</p> <p><u>WX</u> Scattered showers</p> <p><u>VIZ</u> 8 to 10NM but 1 to 2NM in showers</p> <p><u>CLOUD</u> 4/8 Cu base 1500' becoming 7/8 Cu base 1000' in showers with 4/8 St base 400'</p>
082000Z TO 090800Z	<p><u>WIND</u> NW to W 5 or 6</p> <p><u>WX</u> Showers becoming wintry</p> <p><u>VIZ</u> Moderate or good outside precipitation</p> <p><u>CLOUD</u> 3/8 to 5/8 Cu base 1500'</p> <p><u>OCCASIONALLY</u> 6/8 to 8/8 CUNIM base 1000' 3/8 to 5/8 St base 500'</p>

TABLE 2. WEATHER OBSERVATIONS FOR FALKLAND ISLANDS 1-8 JUNE 1982

	00	06	12	18
DATE <u>1/6/82</u>	WIND 290° 18 kt WX NIL VIS 11-27 nml CLOUD 1/8 Sc 1800'	280° 18 kt NIL 11-27 nml 1/8 Cu 1500'	290° 15 kt NIL 5.5-11 nml 7/8 Sc 1800'	320° 14 kt NIL 11-27 nml 7/8 Sc 1800'
DATE <u>2/6/82</u>	WIND 340° 20 kt WX RAIN VIS 2.2-5.5 nml CLOUD 8/8 Sc 1800' 6/8 St 900'	340° 18 kt NIL 11-27 nml 7/8 Sc 1800'	030° 22 kt RAIN 1,100 <del>X</del> -2,200 <del>X</del> 8/8 St 200'	350° 02 kt PAST FOG 5.5-11 nml 7/8 Sc 2500' 2/8 St 100'
DATE <u>3/6/82</u>	WIND 320° 04 kt WX NIL VIS 5.5-11 nml CLOUD 3/8 Sc 2200'	290° 12 kt FOG/PAST RAIN 500 <del>X</del> -1,100 <del>X</del> SKY NOT DESIRABLE	170° 05 kt HAZE 2.2-5.5 nml 8/8 St 700' 2/8 St 300'	VAR 03 kt HAZE 2.2-5.5 nml 7/8 St 800' 5/8 St 200'
DATE <u>4/6/82</u>	WIND 060° 15 kt WX FOG VIS 5.5-200 <del>X</del> CLOUD 8/8 St 1000' 5/8 St 300'	020° 20 kt MIST/PAST FOG 2.2-5.5 nml 8/8 St 600'		030° 32 kt RAIN 1,100 <del>X</del> -2,200 <del>X</del> 8/8 St 700' 4/8 St 200'
DATE <u>5/6/82</u>	WIND 010° 24 kt WX RAIN/PAST FOG VIS 550 <del>X</del> -1,100 <del>X</del> CLOUD 8/8 St 500'	280° 18 kt PAST FOG & RAIN 2.2-5.5 nml 3/8 Sc 3000'	300° 22 kt NIL 2.2-5.5 nml 6/8 Sc 2000'	250° 15 kt NIL 2.2-5.5 nml 5/8 Sc 2000'
DATE <u>6/6/82</u>	WIND WX VIS CLOUD	070° 14 kt HAZE/PAST FOG 2,200 <del>X</del> - 2.2 nml 5/8 St 500'	020° 35 kt RAIN 1,100 <del>X</del> -2,200 <del>X</del> 8/8 St 800'	020° 35 kt RAIN 1,100 <del>X</del> -2,200 <del>X</del> 6/8 St 400'
DATE <u>7/6/82</u>	WIND 010° 17 kt WX NIL VIS 5.5-11 nml CLOUD 2/8 Sc 1800'	320° 25 kt RAIN 5.5-11 nml 3/8 Sc 2000'	340° 15 kt HAZE 2.2-5.5 nml 1/8 Sc 2200'	340° 28 kt HAZE 2,200 <del>X</del> -2.2 nml 8/8 Sc 1800' 6/8 St 300'
DATE <u>8/6/82</u>	WIND 290° 18 kt WX PAST RAIN VIS 2.2-5.5 nml CLOUD 4/8 Ac 9000' 2/8 Sc 1800'	290° 33 kt HAZE 5.5-11 nml 1/8 Sc 2000'	300° 25 kt NIL 5.5-11 nml 3/8 Ci 18000' 2/8 Ci 1500'	300° 23 kt NIL 2.2-5.5 nml 7/8 Ci 18000' 4/8 Sc 1800' 3/8 Cu 1500'

NB. From evidence received it is apparent that local conditions can vary greatly.

TABLE 3.

SIDEREAL DATA, FALKLAND ISLANDS 6-8 JUN 82

ALL TIMES ARE ZULU

OCCURRENCE	6 JUNE	7 JUNE	8 JUNE
NAUTICAL TWILIGHT	1029	1030	1031
SUNRISE	1153	1154	1155
SUNSET	1948	1948	1947
NAUTICAL TWILIGHT	2111	2111	2110
MOONRISE	2007	2043 (FULL MOON)	2127
MOONSET	1130	1232	1329

TABLE 4.

TIDE DATA, PORT STANLEY

ALL TIMES ARE ZULU

OCCURRENCE	6 JUNE		7 JUNE		8 JUNE	
HIGH WATER	0951	2125	1029	2158	1107	2232
HT ABOVE CHART DATUM	1.4	1.7	1.4	1.7	1.4	1.6
LOW WATER	-	1505	0353	1541	0403	1618
HT ABOVE CHART DATUM	-	0.7	0.3	0.7	0.3	0.7

DEPTH IN METRES

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**REPORT TO  
COMMANDER-IN-CHIEF FLEET  
OF THE BOARD OF INQUIRY  
INTO THE LOSS OF  
RFAs SIR TRISTRAM  
& SIR GALAHAD**

**IN JUNE 1982**

**ANNEX F·J**

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX F DATED 23 SEPT 82

SIR TRISTRAM

Annex F1 Material Readiness & Training State of RFA SIR TRISTRAM  
prior to FITZROY

Annex F2 SIR TRISTRAM State of Time of Attack

Annex F3 Attack by Argentine Aircraft on SIR TRISTRAM at FITZROY

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX F1 DATED 23 SEPT 82

MATERIAL READINESS AND TRAINING STATE  
OF RFA SIR TRISTRAM PRIOR TO FITZROY

MATERIAL STATE

1. Damage Control The state of Breathing Apparatus (BA) at ASCENSION IS gave the Board some cause for concern; it was stated by Chief Officer ROACH that an NBCD team from Portland visited the ship there, and some faults were discovered. The Fleet Clearance Diving Team (FCDT) joined at ASCENSION IS for passage to SAN CARLOS, it was agreed with the Chief Officer that they would do a complete check of the DC equipment. The FCDT found numerous defects and deficiencies on the BA which were reported to the Chief Officer. The Board consider that the Chief Officer should have called the Officer responsible for BA to task and kept a much firmer control of this Officers duties. It must be stated by the Board that on arrival in the Total Exclusion Zone (TEZ) all defects to the BA had been rectified by the FCDT. The FCDT had reservations as to the state of the Fire shutter doors, however a subsequent survey of Sir Tristram has shown all Fire doors had activated and were in the closed position. The FCDT also stated that the tank deck hatch into No 2 Hold could not be secured down because the swivel lugs were seized solid and in their opinion was kept shut by the weight of the hatch alone. Whilst the Board acknowledged that the Chief Officer was an extremely busy Officer with many demands on his time it was felt that he rather dismissed the FCDT findings. This is particularly so in the case of BA in which the FCDT must be considered expert in their use and maintenance of this equipment, where he ignored their findings in favour of verbal assurance by his own Third Officer.
2. Machinery. There were no major defects or OPDEFS outstanding which is substantiated by DGST(N) 75A. It is further substantiated by the current survey list supplied by LLOYDS Registrar of Shipping showing items due for survey within the next 6 months were still in date. Some evidence existed that planned maintenance schedules were not being met due to operational commitments, this however did not appear to have any significant effect on the performance of the ships machinery. Defects were occurring that were being rectified by ships staff on an opportunity basis as the Operational situation allowed. The FCDT have stated that concern was expressed to the Chief Officer about the lack of Emergency lighting in the main Port and Starboard Troops alleyways. This is not substantiated by the Chief Officer, and indeed does not appear to have been known by the Engineering Staff. It is clear however

T 0028  
T 0365

A 1241  
T 0356

A 1242  
BURT RPT

A 1247

A 4099

T 0271  
Appendix I

Appendix II  
T 1405

T 1406

T 1241  
T 4101

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that some discussion took place between the Chief Officer and the FCPT, and it would appear to the Board that a misunderstanding existed between the aforementioned parties. Under normal operating conditions emergency lighting is supplied from the mains supply through an interconnector to the emergency switchboard, thus should the mains fail, the emergency generator starts automatically, comes on line and supplies these lights. When carrying out maintenance on the emergency lighting system the interconnector is disconnected and the Emergency generator in a manual start position thus the lights will be out. It is felt this is where a misunderstanding of the system occurred. It is the opinion of the Board that should a permanent fault have existed in the emergency lighting system, not only the Chief Officer and Electrical officer on their rounds would have noticed this fault but that the Ships Warrant Officer whose responsibility it is to report defects in the Military accommodation to the appropriate Head of Department most certainly would have.

3. Medical. Drug stocks and equipment levels were very low when the Medical Officer and LMA joined the ship at ASCENSION IS on the 17 and 19 of Apr respectively. However they were able to obtain the stores they required and when Sir Tristram arrived at SAN CARLOS there were no material deficiencies.

T 2510  
T 3771  
T 3777

#### READINESS STATE

4. Damage Control During the passage south drills and exercises carried out, produced satisfactory results; however, the board had reservations as to the ships ability to deal with a major incident. (See Training State).

T 0025  
T 0358

5. Machinery. All machinery was in working order and good state of readiness. Provision had been made within the organisation to provide for extra generator capacity during daylight hours. In addition the firemain was pressurized from one hour before first light until one hour after darkness. Standing orders were that the spray curtain pump was placed on line on receipt of an Air Raid Warning.

T 1405  
T 1420  
T 1412  
T 1413

6. Medical The first aid organization was well planned and executed. Two first aid parties were formed and these were sited in the hospital and in A5 dormitory forward. They comprised the Medical Officer and the LMA, supplemented by Chinese stretcher bearers trained to a very basic level, the language barrier being the major difficulty. During the passage to SAN CARLOS, five Marines and eight Gunners from the embarked force were trained in first aid by the LMA and these were incorporated into the first aid parties. These personnel left the ship at SAN CARLOS, and the first aid organisation reverted to its former state. Exercises involving casualty evacuation were performed and Neil Robertson stretchers and first aid bags were distributed in key areas around the ship. Most of the modifications to the medical department and preparations for war were made by the LMA with the approval of the Medical Officer. Morale amongst the European Officers was good,

T 3778  
T 3783  
T 3782

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but the majority of the Chinese crew were bewildered, and in many cases reluctant to carry out their duties. There was no evidence of impairment of operational efficiency as a result of fatigue or anxiety and no abuse of alcohol.

2525

TRAINING

7. In looking at the evidence presented to the Board on the state of preparation and training for war, or indeed any major marine mishap, we believe that SIR TRISTRAM had achieved a satisfactory state by the time the ship arrived in the TEZ. Nevertheless, by the very nature of this type of questioning, witnesses are bound to be cautious and reticent in this area if they feel there could be shortcomings and their loyalties are strained. After interviewing both ships and embarked personnel, the board felt a positive indication of a not totally responsible attitude towards the events that might lie ahead. It is therefore the opinion of the Board that the standards applied were not monitored or supervised adequately and that the lead from top management was not sufficiently robust to ensure the integration of the ship as a whole, nor its entire reliability when faced with a stressful situation. Our view is taken across the whole enquiry and gained only by the overall impression that was imparted to Board members during interviewing.

Para 1 &amp; 4

8. Comments in Annex G1 para 8 and 9 apply equally to Sir Tristram.

CONCLUSION

9. It is concluded that in exercises and drills SIR TRISTRAM produced satisfactory results, a much better standard of confidence and ability in the whole ship would have accrued by regular top management meetings to brief all departments, monitor standards and resolve mutual problems.

Para 7

RECOMMENDATIONS

10. It is recommended that:

a. The maintenance of BA is a skilled task and should not be undertaken by persons unqualified to do so. All personnel responsible for the maintenance of BA should attend a suitable course to qualify them to undertake competently these responsibilities.

Para 1

b. Medical see RFA GALAHAD Annex F1 para 11e and f.

c. Greater emphasis to be placed on management techniques and leadership training in the preparation of Officers for Command or as Heads of Departments.

Para 7

d. Recommendations in Annex F1 para 11a, b, c and d apply to Sir Tristram.

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# Lloyd's Register of Shipping

Telephone 01-70

Telex 888379

Cables Committee, London EC3

LR. NO

SHIP'S NAME

SIR TRISTRAM

6704

71 Fenchurch Street, London, EC3M 4BS  
Quarterly Notice

GROSS TONS

4473

DATE OF BUILD

09-67

(00547)

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UNITED KINGDOM

APPE  
To AN

YOUR ATTENTION IS DRAWN TO ANY OVERDUE SURVEY(S), UNLESS YOU HAVE ALREADY DONE SO OR THE VESSEL HAS RECENTLY BEEN UNDER SURVEY FOR THE INSPECTION(S) IN QUESTION. LOCAL SURVEYORS IN YOUR AREA OR HEAD OFFICE LONDON OF THE PROPOSED ARRANGEMENTS AS SOON AS POSSIBLE (SEE NOTES AT FOOT OF PAGE).

## EXPIRY DATE OF STATUTORY CERTIFICATES

LOADLINE 30/04/84  
SAFCON 30/04/84

MINISTRY OF DEFENCE (NAVY)  
DIRECTOR OF SUPPLIES & TRANSPORT (NAVY)  
SECTION FMV75A  
ROOM 626  
EMPRESS STATE BUILDING  
LONDON SW6 1TR

ML/NO	ANNUL CLASSIFICATION	ASSIGNED DATE	DUE DATE	POSTPONEMENT NEW DATE	DUE NEXT 6 MON
	*** OVERDUE MAIN SURVEYS ***	11-06-81	30-04-82		

## OTHER MAIN SURVEYS

	CONTINUOUS SURVEY HULL	04-79	04-83		
	CONTINUOUS SURVEY MACHINERY	06-79	06-84		
	PERIODICAL LOADLINE INSPECTION	11-06-81	04-06-82		YES
	DICKING SURVEY	06-81	06-83		
1957	PORT TAILSHAFT SURVEY	06-79	06-84		
2007	STARBOARD TAILSHAFT SURVEY	06-80	06-85		
2071	FORWARD DOMESTIC PACKAGE BOILER (OTHER THAN MAIN W.T.)	06-81	06-82		YES
	PARTLY HELD				

** ITEMS NOT SEEN ***					
2088	INT. EXAM. INCL. FIT OF DOORS				
2096	EXT. EXAM. INCL. FIRE SIDE AND SECURING ARRANGEMENTS				
2102	STEAM STOP VALVES				
2110	SAFETY VALVES AND MOUNTINGS, EXCEPT STEAM STOP VALVES				
2135	AFT DOMESTIC PACKAGE BOILER (OTHER THAN MAIN W.T.)	06-81	06-82		YES
	PARTLY HELD				

** ITEMS NOT SEEN ***					
2143	INT. EXAM. INCL. FIT OF DOORS				
2176	EXT. EXAM. INCL. FIRE SIDE AND SECURING ARRANGEMENTS				
2176	STEAM STOP VALVES				
2176	SAFETY VALVES AND MOUNTINGS, EXCEPT STEAM STOP VALVES				

ML/NO	*** OVERDUE HULL ITEMS ***	ASSIGNED DATE	DUE DATE	POSTPONEMENT NEW DATE	DUE NEXT 6 MON
2377	3RD SECTION UPPER DECK SUPERSTRUCTURES	05-78	05-82		
2385	BOAT DECK SUPERSTRUCTURES	05-78	05-82		
2440	3RD SECTION POOP TWEEN DECK SPACE	05-78	05-82		
2457	UPPER POOP TWEEN DECK SPACE	05-78	05-82		
2481	3RD SECTION UPPER TWEEN DECK SPACE	05-78	05-82		

NOTE: The data shown in this notice is the latest recorded at the date of printing and does not include surveys held but not yet reported.

## NOTICE OF SURVEYS

It is the responsibility of Owners to ensure that all surveys necessary for the maintenance of class are carried out at the proper time under the supervision of the Society's Surveyors. The Society will give timely notice to Owners about forthcoming surveys by means of a letter or a Quarterly Computer print-out. Such notice does not absolve Owners from their responsibility to comply with survey requirements for the maintenance of class. Non-compliance with Classification requirements may jeopardize the validity of certain statutory certificates and ultimately result in withdrawal by the Govern

CONTIN



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Telephone 01-709 9166      Telex 888379      Cables Committee, London EC3  
 LR. NO.      SHIP'S NAME

6704373

SIR TRISTRAM

71 Fenchurch Street, London, EC3M 4BS  
 Quaterly Notice

GROSS TONS  
4473

DATE OF BUILD  
09-67

( 00547 )  
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YOUR ATTENTION IS DRAWN TO ANY OVERDUE SURVEY(S). UNLESS YOU HAVE ALREADY DONE SO OR THE VESSEL HAS RECENTLY BEEN UNDER SURVEY FOR THE INSPECTION(S) IN QUESTION AS PROPOSED ARRANGEMENTS AS SOON AS POSSIBLE (SEE NOTES AT FOOT OF PAGE).

ML/NO	ASSIGNED DATE	DUE DATE	POSTPONEMENT NEW DATE
*** OVERDUE HULL ITEMS ***			
2512		05-78	05-82
2520		05-78	05-82
2578		05-78	05-82
2586		05-78	05-82
2625		05-78	05-82
2833		05-78	05-82
3121		05-78	05-82
3187		05-78	05-82
321		05-78	05-82
3242		05-78	05-82
3363		05-78	05-82
3371		05-78	05-82
3773		05-78	05-82
3804		05-78	05-82
3861		05-78	05-82
3894		05-78	05-82
3925		05-78	05-82
3958		05-78	05-82
3982		05-78	05-82
4077		05-78	05-82
4108		05-78	05-82
4141		05-78	05-82
4261		05-78	05-82
4278		05-78	05-82

\*\*\* OVERDUE MACHINERY ITEMS \*\*\*

\*\*\* OVERDUE CONDITIONS OF CLASS \*\*\*

OTHER CONDITIONS OF CLASS

01 1281 BOTTOM SHELL PLATING IN NO.13 D.B. TK (P) TEMPY REPD \* BY 06/82

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## ENTRIES TO BE NOTED

99 SCREWSHAFTS TO BE CRACK DETECTED AT EACH TAILSHAFT SURVEY

## HULL ITEMS DUE IN NEXT 12 MONTHS

ML/NO	DESCRIPTION	DUE DATE	*	ML/NO
2272	THICKNESS DETERMINATION	04-83	*	

## HULL ITEMS CREDITED SINCE LAST LIST

## MACHINERY ITEMS DUE IN NEXT 6 MONTHS

## MACHINERY ITEMS CREDITED SINCE LAST LIST

## MACHINERY ITEMS TO BE NOTED

ML/NO	DESCRIPTION	DUE DATE	*
	SEA CONNECTIONS		*
1856	PORT SIDE SUCTIONS	06-83	*
1864	PORT SIDE DISCHARGES	06-83	*
1872	STBD SIDE SUCTIONS	06-84	*
1880	STBD SIDE DISCHARGES	06-84	*

END

NOTE: The data shown in this notice is the latest recorded at the date of printing and does not include surveys held but not yet reported.

### NOTICE OF SURVEYS

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OPDEBS  
FEA SIR TRISTRAM

OPDEB NO.	ITY OF OPDEB SIGNAL	BRIEF DETAILS OF SYSTEM/EQUIPMENT AND LEFEX	OPERATIONAL LIMITATIONS	DATE RECTIFIED	RFA 5 SER.NO.	REMARKS
ME181	081717Z FEB	Main Engine Jacket Water System unable to obtain engine temperatures when stationary		221430Z Feb		
ME2-81	101340Z Feb	Bow Doors Stbd Bow Doors		221430Z Feb		Repair Commenced at Husbandø
ME3-81	171745Z Apr 81	Port M/E No 9 unit piston cracked		191615Z Apr		

OPDEF'S  
RFA SIR TRISTRAM

OPDEF NO.	DTG OF OPDEF SIGNAL	BRIEF DETAILS OF SYSTEM/EQUIPMENT AND DEFECT	OPERATIONAL LIMITATIONS	DATE RECTIFIED	RFA 5 SER.NO.	REMARKS
HUJ-82	111052Z JAN	PORT ANCHOR SHANK - DISTORTED		201130Z JAN 82		
HUJ-82	251510Z JAN 82	20 TON CRANE - HOIST WIRE		281535 JAN		Commercially S/S TEMP
WE-82	231245Z JULY	NO VHF COMMUNICATIONS		251535Z AUG		





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CARGO AND PERSONNEL

7. No craft were alongside at the time of the attack. Unloading of cargo had been progressing since the morning of 7 Jun and approximately 102 tons of ammunition remained on board in the tank deck, some of which had been streamed into the after trunk ready for loading into the next craft to arrive. Breakdown of ammunition was as follows:

81 mm mortar	20 tons
0.5 in machine gun rounds	4 tons
Rapier missiles	8 tons
.762mm rounds	20 tons
Pyrotechnics	20 tons
105mm artillery rounds	30 tons

In addition there were 200 Jerricans of kerosene and 200 of diesel fuel stowed on the tank deck.

8. Personnel were spread throughout the ship carrying out routine tasks consistent with defence stations, that being the state of readiness in force.

DISCUSSION

9. Shortly before the actual attack the OOW heard on the AAWC net that an air raid was taking place at SAN CARLOS. He heard that a ship had been hit and a second wave of aircraft was expected in SAN CARLOS. As these warnings were not addressed specifically to TRISTRAM and made no mention of FITZROY or BLUFF COVE he took no action. By chance the NCO in charge of the Blowpipe detachment happened to be on the bridge and was told of the raid at SAN CARLOS, on his own initiative he alerted the air defence teams but almost immediately afterwards the attack took place.

T0696  
T3534

T3611

10. The conflicting testimony of the [REDACTED] is disturbing but it is felt that it may have been a misunderstanding in terminology, whereas the Command and [REDACTED] were positive about the main engines being on immediate notice. The actual organisation was the same as ten minutes notice in peacetime.

CONCLUSION

11. It is concluded that the confusion over callsigns and the lack of knowledge of the workings of tactical circuits contributed greatly to the OOW ignoring the information he heard on the AAWC net. However the Board feel that it was extremely naive of [REDACTED] to believe that an air attack going on only 35 miles away could have no bearing on his own ship's safety. It is the Board's opinion that despite the apparent conflicting testimony the Main Engines were on immediate notice and SIR TRISTRAM was in state of readiness consistent with the defence state in force at the time.

Para 8

T3539

Para 6



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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
 ANNEX F3 dated 23 Sep 82

ATTACK BY ARGENTINE AIRCRAFT ON SIR TRISTRAM AT FITZROY

ATTACK NARRATIVE

1. At approximately 1710 on 8 June 82, RFA SIR TRISTRAM was attacked by Argentine jet aircraft while lying at anchor off FITZROY CREEK. SIR GALAHAD was anchored about three cables to the East, and both ships were facing North about three hundred metres from shore. It was a clear, bright afternoon with 2/8 cloud cover.

2. Four aircraft, believed to be A4 Skyhawks took part in the attack. They approached SIR TRISTRAM and SIR GALAHAD from the East, flying in line ahead down PORT PLEASANT at about one hundred feet above sea-level. There is some variation in the accounts of the attack given by witnesses, but it is probable that the most objective statements came from an observer standing on shore only three hundred metres from SIR GALAHAD.

T3614-20  
 T3705-44  
 T3650-91  
 T3786-800  
 T3146-160  
 T0702-29  
 A1697-1737

3. The leading aircraft released four bombs as it passed over the midships of SIR GALAHAD, and flew level over the flight deck of SIR TRISTRAM before climbing and banking to port. The bombs missed SIR TRISTRAM but straddled her bows. Two fell in the water off the starboard bow, one off the port bow, and the fourth bounced on the water beyond the port bow and landed on PLEASANT POINT where it exploded.

4. The second aircraft, about 200 metres behind the first, released four bombs a few metres from the starboard side of SIR GALAHAD. It followed the same flight path over SIR TRISTRAM before banking to port. Two of its bombs struck the starboard quarter of SIR TRISTRAM; one entered the ship at deck level of the starboard aft machinery starter room forward of the chain locker (see plate 1/3), pierced the deck and entered number 25 starboard tank. The second bomb entered the stern door starboard chain locker near the vertical stern door compression bar (see plate 5/2); passed through the tank deck bulkhead plating of the chain locker at deck level (plate 1/1) passed across the tank deck and entered 25 port tank through the port tank deck capstan stool (plate 1/2). In view of the limited extent of damage sustained it is likely that partial detonation took place. The third and fourth bombs missed the ship but the third exploded under the transom in way of 25 and 26 tanks and caused holing of the ship's bottom plating. The combined effect of one partial detonation in 25 tank together with complete detonation below the transom caused damage to the steering gear compartment, tank deck bulkhead and accommodation structure; a fire did not develop in the steering gear compartment. It is not known what happened to the bomb in 25 tank starboard.

Appendix  
 II

Appendix  
 III

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5. The third aircraft attacked SIR GALAHAD and was flying in very close proximity to the second. The fourth was about 150 metres behind and followed the same flight path as the others but did not release any bombs. It did however strafe the flight deck of SIR TRISTRAM with cannon fire. The Blowpipe detachment attempted

T3690  
 T3744  
 T3620-2  
 T3614

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unsuccessfully to engage the third aircraft. The G.P.M.C gunners located on the bridge wings and monkey island fired at the aircraft but the Bofors guns remained silent.

T0727  
T3163

6. [redacted] first realised the ship was under attack when he heard an aircraft pass overhead as he walked onto the starboard bridge wing. He looked up and saw the underbelly of the first aircraft, with a second aircraft visible passing over SIR GALAHAD and releasing its bombs. He ran onto the bridge, flung himself onto the deck and rang the alarm bells. As he did so he felt the ship shudder violently. Other witnesses reported two separate thumps a few seconds apart, each followed by a lateral and vertical shuddering of the ship. The noise came from the stern of the vessel, but there are no reports of sufficient noise or blast to suggest an explosion. The vertical whip of the ship lifted men in the bows off their feet, and in one case threw a sailor from the vehicle deck onto the foc'sle. A heavy lifting frame was also thrown up onto the foc'sle while the hatch cover forward of number one hatch was lifted clear of the coaming and landed askew.

T0702

T0166  
T0429  
T0620  
T3875  
T3201  
T0426

7. Within five seconds of the bombs striking, the Captain arrived on the bridge. He was joined by the [redacted]

[redacted] who received a situation report and handover from [redacted] then left the bridge to move to his emergency station in the troops' recreation room. He shut fire doors behind him and noticed minor damage to those by the Purser's office and at the bottom of the stairs by the Military Office which he attributed to vibration. He also noted a smell of cordite in the air, and in the troops' recreation room there was asbestos dust and fragments of formica on the deck, but no structural damage.

T0732-3

T0735

8. On the bridge the Captain's initial reaction was one of horror at the spectacle of SIR GALAHAD which was already burning furiously. Without waiting for a damage report from [redacted] he ordered two lifeboats to be launched to help to rescue men from SIR GALAHAD.

T0179

T0182

9. [redacted] had made his way to the troops' cafeteria, his emergency station. On arriving there he found that no sailors had yet mustered, he was alone. He heard a pipe that the ship had been hit starboard side aft, and without reporting his movements to the bridge he set off for the starboard accommodation alleyway to search for personnel and damage.

T0429

10. [redacted] assumed responsibility for receiving and collating information coming to the bridge, and he made the pipe about the attack on the ship. In fact there was little information coming to the bridge and [redacted] whose task it was to record all reports in a log, made no entries until after the lifeboats had been sent to SIR GALAHAD, between three and five minutes after the attack. There were no reports from fire parties and no closing-up reports from any departments except the hospital. It seems that

T0633

T0301

T2374

T2379

T2378

this was the only entry in the log within the first ten to fifteen minutes after the attack.

11. In view of the absence of information on the bridge [redacted] left to go to the MCR. On the way he passed through the tank deck where he noted explosive fumes but no damage. In the MCR he was informed by [redacted] that the evaporator and fridge machinery controls were displaced and that the after end of the tank deck was buckled and the bulkhead cracked. He was also given a report of a possible unexploded bomb. He returned to the bridge with this information. T0305 T1479 T0309
12. On the bridge at this time, about ten minutes after the attack, was the Captain, [redacted] passed messages between the bridge and the radio room, but there were no other senior ship's officers present. The Captain had detailed [redacted] to leave the bridge and launch two of the lifeboats, and they did so between three and five minutes after the attack. [redacted] took charge of Number Three lifeboat with a capacity for 112 persons, while [redacted] Royal Corps of Transport volunteered to take Number Four, a 104 person boat. This left only two lifeboats, each with a capacity for 50 persons remaining on SIR TRISTRAM. T2901 T3507 T0635 T0637 T3936
13. In the MCR the officers on watch at the time of the attack were [redacted]. They heard a loud noise followed by vibration, and the junior watchkeeper started the spray curtain pumps. He then left the engine room and proceeded to his emergency station on the tank deck. [redacted] who reported that the fire main pumps had been stopped by the shock and that fire main pressure had disappeared. He re-started the pumps again and fire main pressure was restored. [redacted] were joined by [redacted] in the MCR. [redacted] noted two earths on the warning panel and removed these by isolating the fridge fans and pulling the galley breaker. On his way through the engine room to the MCR [redacted] noticed that the domestic fridge compressors had been displaced and that there was a furrow in the bulkhead behind them. He reported at the MCR and then received a request from the tank deck firefighting party for sets of breathing apparatus (BA) to be brought up from the MCR. On reaching the tank deck with the BA he found a moderately dense white smoke and he was asked to clear this by re-starting the tank deck fans in reverse. He also noted that the door between the port main engine room and the overhaul space on the port side of the tank deck was buckled. Having re-started the tank deck fans he returned to the MCR from where he started to walk around the engine room to inspect for damage. He shut down the main boiler and saw that the feed pipe to the evaporators was damaged and was spraying salt water, so he shut off the salt water supply. He received instructions to leave the engine room in order to start the engine of number three lifeboat, and he then joined [redacted] in helping to rescue survivors from SIR GALAHAD. T1581 T1588 T2054 T1438 T2269 T2166 T2192 T2198

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14. Meanwhile [redacted] had left the MCR to assess the damage sustained to the ship and to receive reports from the engine room fire parties who had mustered on the tank deck. He found that the stern trunking of the tank deck was filled with smoke and dust, and that debris, paint chippings and pallets of ammunition were scattered over the deck. Walking aft he found that the watertight door to the fridge space and steering gear compartment was badly buckled. None of the Chinese sailors had mustered to man the engine room fire parties which now consisted only of officers. [redacted] returned to the MCR to report these facts to the bridge, and there he was informed by [redacted] that some Chinese were crouching, bewildered and confused between the generators, or were lying on the engine room deck plating. They were ordered to get up and man their emergency stations, and although they ran out of the engine room they never complied with the latter part of the order. T1450 T1463
15. About nine minutes after the attack [redacted] received a damage report from one of the engine room fire party. [redacted] had penetrated aft in the tank deck wearing BA and had seen a vertical split in the Arcus Room and Capstan Starters Room, and holes in the port and starboard sides of the stern trunking at deck level. Metal around the port side hole was splayed out suggesting it was an exit hole. [redacted] appeared briefly and was given a situation report by [redacted] before returning to the bridge. Communications between the bridge and the MCR appear to have been poor with little flow of information in either direction. T1795 T1978 T1802 T1816 T1465 T1605
16. At this time there was a meeting of deck and engineer officers on the tank deck. [redacted] The three deck officers had met earlier in the troops' cafeteria and [redacted] had each taken BA sets and proceeded to inspect the ship for damage, with [redacted] acting as BA controller. The Chinese members of the fire party had made no attempt to don firesuits even when instructed to do so, and they appeared to be dazed and bewildered. A muster had revealed that two sailors were missing, one of whom was the Bosun. [redacted] had remained in the cafeteria with the Chinese, while the BA team had made their way aft. T0751
17. [redacted] had proceeded from the poop deck into the Petty Officers' accommodation flat on the starboard side, leaving [redacted] on the poop deck with the BA control board. [redacted] had seen no signs of damage but there was a fine white dust and debris on the deck. He had then noticed the body of a Chinese sailor lying by the starboard side of the winch. [redacted] had been summoned and had pronounced the man dead. He had sustained a major head injury and had probably been thrown against the winch when the ship was bombed. T1271 T2579
18. In the starboard accommodation alleyway, [redacted] had found chaos and devastation. Deckheads were damaged and the partitions between cabins had been flattened. There was no way down to the fridge flat as the entrance door was T0436 T0446 T0447

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blocked. Two holes in the ship's side could be seen from the PO's accommodation, but there was no sign of fire, and no more casualties had been seen. At this stage [redacted] had attributed the damage to the passage of an unexploded bomb, having been given descriptions of the havoc wrought by one in SIR LANCELOT. He had then proceeded with [redacted] to the troops' cafeteria to make a report to the bridge, and thence to the tank deck to meet the engine room fire party.

T0448

T0449

19. In the tank deck there was dense acrid smoke, black forward and grey aft, and it was necessary to wear BA. It was stated by [redacted] that the fridge flat was wrecked and two holes in the ship's starboard side were clearly visible. The deck in the stern trunking was domed upwards and the bulkhead aft of the fridge door was bellied inwards. Although there were no visible signs of fire, the tank deck over the steering flat felt warm suggesting there might be a fire in this compartment. The fridge spaces could not be reached from the tank deck because the door between the two areas was buckled and immovable. The steering flat was thus inaccessible.

T0426

T1490

T0467

T1504

T1491

20. [redacted] then discussed the situation in the presence of the other officers on the tank deck. It was felt that the ship had been hit twice, but nobody had heard an explosion, and only one exit hole had been found on the port side. There was some evidence of damage and possible fire in the steering flat, but access to this compartment was impossible. At this stage, some twenty minutes after the attack, the consensus of opinion was that an unexploded bomb was in the steering flat, and that all personnel should be moved forward. [redacted] decided not to start the tank deck spray curtain in the absence of a definite fire in the tank deck or steering flat for fear of wetting the ammunition there, but thought that the tank deck fire hoses had been run out. In [redacted] opinion the after tank deck spray valves in the PO's alleyway had been destroyed as he had been unable to find them. He was also of the opinion that the fire main was inoperative, having been told so by [redacted]. This was in fact incorrect.

T0467

T1506

T0467

T1506

T1507

T1508

T1490

T0481

T0486-7

T1470

21. Between them [redacted] agreed that there was considerable danger of the bomb in the steering flat detonating; only [redacted] considered there to be a fire in this compartment. There was also the added danger of the ammunition scattered about the tank deck igniting or detonating. They decided to move all personnel and BA forward to relative safety and there to reappraise the situation. The plan was to return later to deal with any fire that might be found.

T0478

T1506

T1508

T0499

22. [redacted] returned to the troops' cafeteria while [redacted] proceeded to the MCR to organize the evacuation forward. He also shut down two of the diesel generators, leaving one to supply power for fire-fighting. He isolated the emergency generator to prevent it cutting in automatically and depleting its fuel supply in the event of main generator failure.

T1509

T1515

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F3-5  
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23. [redacted] moved to the bridge to make a report and recommendations to the Captain. On the way he entered the troop's cafeteria and instructed [redacted] to move all personnel forward and to muster them on the vehicle deck near the foc'sle. As the Chinese moved onto the vehicle deck, [redacted] made a pipe from the bridge to the effect that the air raid warning had reverted from red to yellow on completion of the attack. This pipe was misinterpreted by the ship's company who anticipated a second air attack. The evacuation forward was temporarily halted as the Chinese ran back into the troop's cafeteria to take cover. T3571  
T0797  
T1506  
T0797
24. On the bridge [redacted] found the Captain, [redacted] and two Radio Officers. He reported to the Captain the extent of the damage and the possibility of an unexploded bomb in the steering flat. He advised the Captain to move personnel forward, although he had in fact already initiated this move himself. His advice was duly accepted and a pipe was made. At this stage the Captain described to the Board that "I don't recall exactly what reports came in or what reports reached me at this stage, in fact my mind is really a blank as to what exactly came through to me at this stage". He went on to say that he spent a lot of time "looking in horror at GALAHAD". He felt fully controlled in himself but that "everything that happened on each occasion, as it happened, was new, completely new to me". He felt that this might have influenced or inhibited his reactions. [redacted] received one sitrep from the MCR through the Captain about 5 minutes after the attack but thereafter there was a lack of information coming to the Bridge so he left and went down to the MCR to try and find out what was happening; he then returned to the Bridge but did not express his opinion as to whether there had been an explosion or not. Furthermore, he gave no advice to the Captain as to whether the ship should be abandoned or not, nor did he take any further part in subsequent events. T5053  
T0193  
T0194  
T0197  
T0197  
T0290  
T0301  
T0302  
T0321  
T0507
25. A repeat muster on the vehicle deck revealed that the Bosun was missing, the only other loss being the dead sailor on the poop deck. It was noticed that smoke was issuing from the small forward hatch, the cover of which had been dislodged during the attack. While liferafts were being prepared this smoke became denser and blacker. Initially [redacted] had thought that this was due to venting of the tank deck smoke he had encountered earlier, but as it became denser he worried that there might be a fire forward. He knew that 36 rapier missiles and stocks of diesel and kerosene had been stored in the forward end of the tank deck. A team of RCT troops led by [redacted] had earlier inserted a hose through this hatch and had played water onto the tank deck below. [redacted] descended to the tank deck but could see no evidence of a fire, only thick black smoke. He decided to start the forward curtain spray but this had only a minor effect on curbing the smoke. By this time the Captain, in consultation with [redacted] had taken the decision to abandon ship. He had concluded that preservation of life was paramount, investigation of the situation in the after end of the ship being of secondary importance. He gave the order to abandon ship from the foc'sle, but some of the Chinese crew were manning the life-rafts already at this stage. T5013  
T3932  
T1534  
T0516  
T0208  
T0211

26. The evacuation from the ship proceeded smoothly and in an orderly fashion. Although many of the Chinese were dazed and shaken there was no panic. The ship was abandoned approximately forty minutes after the attack. T0217  
T0519  
T1191
27. On their journey ashore those in the life-rafts were able to see a hole in the starboard quarter of SIR TRISTRAM near the waterline. Flickering flames were observed in the ship through this hole from which some fine smoke was emanating. These flames had in fact been seen by officers manning the boats going across to SIR GALAHAD nearly thirty minutes before. During this time the flames and smoke had intensified. T1198  
T0640  
T0976  
T0988
28. Approximately ninety minutes after the first attack about four enemy aircraft passed over the two ships and the Fitzroy area, but no weapons were seen to be released by them. However, at the time of the second raid the after end of SIR TRISTRAM was seen to be burning furiously. Until this time the intention of the Captain had been to return to SIR TRISTRAM when the bomb had been defused, but when he saw the extent of the fire from shore he abandoned this plan and made no attempt to board his ship. T1912  
A1738-9  
T0227  
T2794-9  
T2009  
T1909  
T2201  
T0227

#### DISCUSSION

29. The most controversial aspect of this episode was the Captain's decision to abandon ship, since if the basic elements of fire fighting and damage control had been applied, then the damage incurred would have been little more than was sustained within the first few minutes of attack; as it was, fire developed to a small degree about 10-15 minutes after the attack but did not reach significant proportions for more than an hour. T0640  
T0976  
T1912
30. Before considering this however, the Board had to examine the Captain's motives and thinking in sending away all the Deck Officers on his Bridge to assist in lifesaving at SIR GALAHAD. Although he knew his own ship to have been hit, Captain GREEN was astounded, horrified and mesmerised by what he saw on board SIR GALAHAD to the extent that he considered he must provide immediate assistance. He did not have a full damage report on his own ship when he sent away the deck officers but he considered that his ship was nowhere near as badly damaged and that he could do without them. There were RCT personnel he might have sent instead but they were not immediately available and time was all important if substantial assistance was to be made to SIR GALAHAD. T2901  
T0194  
para 24
31. Once the two Deck Officers left the Bridge, the only officers remaining were the [redacted] (Incident Board Operator) and a Radio Officer; both of these have little or no training in Damage Control and the latter was busy between the Bridge and Radio Office. Thus, when the Captain realised there was a dearth of information concerning the damage to his own ship, there was no one of experience remaining who could provide essential assistance, the Captain was thus left in a somewhat isolated position without the means of trained personnel immediately to hand to assist him. The consequence of this was that he had largely lost control of the situation from the Bridge. T3507  
T2901

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32. [redacted] as the Ship's Damage Control Officer, had also found there was a dearth of information reaching the Bridge and so he left with the intention of obtaining a full sitrep for the Captain and himself. This took time, and when he returned to the Bridge, the Captain had just agreed [redacted] recommendation to evacuate all personnel forward. [redacted] however had not seen [redacted] between decks since he had been unable to go aft without a breathing apparatus and so had gone instead to the MCR for his information. The one thing [redacted] did notice however was the smell of cordite which he identified from his previous experience in Armaments as coming from an explosion. If, on returning to the Bridge, he had told the Captain of his opinion that a bomb had actually exploded on board, then the course of events might have been very different and a more thorough examination of the ship instigated.
33. The Board considered therefore that once the Captain had taken the decision to send away his two Deck Officers then a train of events was set in motion which led to incomplete, or only partially correct information reaching the Captain. From this, the Board concluded that the Captain made an error of judgement in sending away his two Deck Officers prematurely.
34. Turning back to the decision to abandon ship, the Board had to consider the situation as Captain GREEN understood it to be and upon which he based his decision to abandon ship:
- a. There was a report of an unexploded bomb in the Steering Compartment.
  - b. There was the report of a fire in the Steering Compartment.
  - c. There was no means of access to the Steering Compartment and thus no means of verification or counter attack.
  - d. Palletised ammunition above the Steering Compartment could be exploded either by the UXB or the fire.
  - e. There was a further danger from kerosene and diesel fuel stowed on the Tank Deck.
35. Captain GREEN considered that since the fire was inaccessible there was little more that could be done to prevent a further explosion aft and which might possibly spread rapidly through the ship; he also clearly considered here the precedents set by SIR LANCELOT and SIR GALAHAD when they were struck by UXB in SAN CARLOS. His motives therefore were governed entirely by the need to preserve life and this view had been most graphically re-inforced by what he had seen in SIR GALAHAD. There is evidence that whilst he was on the Bridge awaiting damage reports, his mind was numbed to a certain extent by the events which had taken place on his own ship and to a horrifying degree on SIR GALAHAD. Although he does not seem to have given very serious consideration to leaving a fire attack group behind, he intended to return to the ship when it was safe to do so.

T0301

T0321

Para 23/2

T0301

T0302

Para 31

T0501

T0198

T0202

Para 24

Para 34

T0208

T0664

T0227

T0227

T0499

36. The Board did investigate the [REDACTED]

Para 35  
T0195-7

[REDACTED] However, the behaviour of Captain GREEN before and after the attack was described by [REDACTED] as absolutely normal and rational, while [REDACTED] stated that he was fully aware of the situation around him.

T0193

T2658  
T0538

37. In considering the decision Captain GREEN took on the foc'sle to abandon ship, the Board considered that Captain GREEN placed too great an emphasis on the safety of life alone rather than the safety of life together with the safety of a ship with an operational task. That his mind was overbalanced in one direction by the events is indisputable but the Board also considered that he should have given much greater weight to the consideration of leaving a fire attack party behind to maintain a continuous patrol and watch over the ship; had he done so, the Board believes that the fire damage to SIR TRISTRAM could have been far less, if not negligible.

38. [REDACTED]

[REDACTED] However, the Board also had to take into account Captain GREEN's qualifications as a Merchant Navy officer where safety of life is paramount. Additionally, as an RFA Officer his training and experience did not give him the same priorities and full understanding of his task in war when compared with an RN Officer.

39. It is considered that the conflagration which eventually engulfed and destroyed the superstructure started as a small localised fire in the starboard aft machinery room, possibly due to ignition of hydraulic fluid from the Arkas pump. This fire, apparent to those making the journey from SIR TRISTRAM to SIR GALAHAD, between 5 and 10 minutes after the attack, should have been found and dealt with by fire parties. In fact a survey of SIR TRISTRAM on the day after the attack revealed: "that throughout the ship there was only one hose run which was on the tank deck. There was no evidence anywhere else in the ship of attempts at fire-fighting with hoses or portable equipment, as they were all still in their correct stowages".

T0640  
T0976

Appendix  
IV

40. [REDACTED]

T0507

T0321

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41. [redacted] concerned with the lack of reports reaching the bridge, took it upon himself to leave his position and go in search of information. However there is no evidence to suggest that any SITREP was made to the Command on his return to the Bridge. It is apparent that [redacted] had been unwell for a day before the attack with symptoms of 'FLU', and he was not feeling well on the morning of the attack. He had also been receiving treatment for TINNITUS from the Medical Officer for the previous three weeks, the drugs prescribed might have led to mild drowsiness, particularly if taken in conjunction with alcohol. However, he had been instructed to take the medication at night and it is unlikely to have impaired his judgement on the afternoon of the attack. T0301 T0321 T1551 T2620
42. It is the opinion of the Board that the medical factors outlined in para 41 are insufficient to have affected his performance after the attack. The Board further consider that [redacted] made an error of judgement in not volunteering the information he had gleaned below decks, and not giving the Command the benefit of his specialist knowledge.
43. The testimony given by the [redacted] was assessed by the Board and certain shortcomings became apparent. He stated that when he inspected the POs accommodation on the starboard side with [redacted] he could see two holes in the ships side through the deck. Not only was this observation not corroborated by [redacted] but a subsequent survey showed that what he was describing was impossible to observe. Furthermore, he described that he was able to walk from the tank deck into the fridge flat which he said was wrecked. [redacted] testimony state that the door from the tank deck to the fridge spaces was welded shut from the blast and there was no way of gaining access to this compartment. Their observations were further supported by the subsequent damage survey T0448 T1122-3 Appendix II T0458 T1138 T1499
44. [redacted] was invited to return to the Board in an attempt to explain these discrepancies. Although confronted with the facts he was unable to offer an explanation and unwilling to modify his previous testimony. T4127
45. [redacted] testimony contained some inaccuracies and errors which called into question his reliability and competence as a witness (Paras 43/44). The evidence is that he drew incorrect conclusions from what he stated that he had seen and that in informing the Captain there was a fire burning, he was in error. This information was based solely on the fact that there was smoke present on the tank deck, and that the actual deck above the steering flat in the way of the doming felt warm to touch. No other officer on board at this time considered the presence of fire. The Board therefore believe [redacted] made an error of judgement at this point and that his SITREP to the Captain was not totally correct. The Board consider [redacted] had to decide between complete evacuation aft or leaving a few personnel to monitor events in that part of the ship, in choosing the former he made another error. Whereas the Board believe that it was a prudent measure to move non essential personnel to the forward end of the ship, it was unfortunate that T0508 T0198 T0501 T0198 T0501

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[redacted] did not advise Captain GREEN to retain fire parties on board at the time of the abandonment to prevent spread of fire and subsequent damage to SIR TRISTRAM.

T0508

46. The Board has grave misgivings about the performance of the Chinese crew after the attack. With some notable exceptions they became apathetic and sat around looking dazed and bewildered. They were slow to muster to their emergency stations and in several cases disobeyed direct orders to don firesuits or man fire attack groups. There was however no panic although there is evidence that they made their way to the life-rafts before the Captain actually gave the order to abandon ship.

T0209

T0750

T0753

T1463

T0211

#### CONCLUSION

47. It is concluded that:

a. The precise damage attributed to individual weapons cannot be stated with confidence. The damage was caused by 3 x 500lb bombs:-

(i) one bomb entered 25 Tank Stbd and passed through without detonation.

(ii) one bomb passed across the Tank Deck entered 25 Tank port where partial detonation occurred blowing out a large plate on the port quarter and causing damage to the for'd bulkhead.

(iii) one bomb exploded under 25 and 26 Tanks rupturing the ships hull. It is believed this bomb also contributed to the combined effects of the other 2 bombs.

b. Fire damage to RFA SIR TRISTRAM could have been avoided had basic damage control and fire procedures been followed

(Para 28)

c. The over-riding consideration in the minds of the Captain and Officers was that they had an unexploded bomb on board which might explode at any minute.

(para 28)

d. [redacted]

(para 30)

e. The Captain acted entirely on the information given to him by [redacted] and he acted solely on this advice.

(para 32)

f. [redacted] carried out a reasonable search aft and discussed his findings with the 2nd Engineer before he reported to the Captain but the assessment he gave the Captain differed in that he stated there was a fire aft when there was no proper evidence to support this.

(para 45)

- g. [REDACTED] made an error of judgement in his assessment that there was a fire burning aft. (para 45)
- h. The decision to move the Ships Company forward was correct in the circumstances but a fire party should have remained to patrol the aft part regardless of whether a UXB was present or not. (para 28 and 45)
- j. The decision to abandon ship was premature; the Captain might not be faulted for evacuating unnecessary personnel to shore in case of further hazard but he should still have left a party on board to fight fires or deal with other consequences. (para 28, 29, 30)
- k. The Captain at one time intended to return to the ship at a safer stage but this never happened; (para 29)
- l. [REDACTED] (para 33)
- [REDACTED] (para 38)
- m. [REDACTED] made an error of judgement in that he did not volunteer information he had gleaned below decks, and not giving the Command the benefit of his specialist knowledge. (para 42)
- n. [REDACTED] made an error of judgement in informing the Captain that there was a fire in the steering flat, to which he could not gain access. (para 36)
- o. [REDACTED] made a further error of judgement in that he decided upon complete evacuation of the after part of the ship rather than leaving a few personnel in that area to monitor events. (para 45)
- p. The overall performance of the Chinese crew was highly unsatisfactory and their employment in fire and repair parties is hazardous. (para 46)

#### RECOMMENDATIONS

41. It is recommended that:

- a. The Commander in Chief consider what action, if any, be taken in respect of the alleged errors of judgement by of the Captain, [REDACTED] of RFA SIR TRISTRAM
- b. Further consideration be given to the advisability of manning RFA vessels in forward operational areas with Chinese crews.

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APPENDIX 1 TO  
ANNEX F3DAMAGE SUSTAINED BY RFA SIR TRISTRAM

1. From evidence and expert testimony the Board concluded that SIR TRISTRAM sustained damage caused by three 5001b bombs.
2. Bomb 1 entered the stern door chain locker (starboard) in close proximity to the vertical stern seal compression bar creating a hole approximately 14 inches in diameter. The bomb passed through the chain locker inner bulkhead approximately two feet above the tank deck level, passed across the tank deck, piercing through the port capstan stool entering No 25 port tank. This bomb is believed to have partially detonated. The following damage was sustained to No 25 tank port; shell plate from the forward bulkhead to aft and an area of approximately 40 square feet blown out; rupture and deflection of the forward bulk head, this rupture was in two places from the ships side to 6 feet inboard, and from the centre line bulkhead outboard approximately 6 feet.
 

Photo 5/2  
Photo 1/1  
  
Photo 1/2  
Photo 4/11  
  
Appendix  
II photo  
5/6  
Photo 1/4
3. Bomb 2 entered the ships side at deck level in way of starboard machinery starter room, piercing the deck and passing into No 25 tank starboard. This bomb is believed to have passed through the tank without exploding. Damage sustained to No 25 tank starboard was Bottom shell plate holed and erupted inwards, floors badly distorted between the centre link bulkhead and longitudinal girder 7 feet 6 inches outboard. Forward bulkhead ruptured from the centre line bulkhead to the longitudinal girder.
 

Photo 5/8  
  
Appendix  
II
4. Expert testimony concludes that the damage to No 25 tanks was consistent with deflagration or partial detonation of one of these weapons.
 

Enclo-  
sures
5. Bomb 3 entered the water and completely detonated under the transom causing the following damage No 26 tank bottom plating holed either side of the centre link bulkhead. The deck head of the tank between the aft end of the steering gear and the forward bulkhead of No 25 tank ruptured and blown up approximately 13 ft transversely and 3 ft longitudinally.
 

Ref AMT  
Report  
Photo 5/10  
Appendix  
II
6. The combined effect of the partial detonation or deflagration of a bomb in No 25 tank together with complete detonation of the bomb below the transom caused damage in the following areas:
  - a. Steering Gear Flat Shell plate ruptured and deflected outboard by approx 90 degrees. Deck head of steering flat bulged upward, this form's the tank deck, deck.
 

Ref Appen-  
dix II  
Photo 4/11  
Ref Photo  
2/1
  - b. Domestic Fresh Water tank which forms the forward bulkhead of the steering slightly distorted and pierced approximately three sq feet in are

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c. Arkas Pumproom forward bulkhead which also contains the entrance door was blown off in its entirety. The after bulkhead is bulged approximately 6 inches and is detached from the longitudinal bulkheads. Photo 1/8  
Photo 1/7  
and 1/5

d. Domestic refrigeration spaces and lobby  
The ladder screen bulkhead together with entrance door the steering gear completely blown off. Bulkhead between the potato room and lobby blown outboard. 4ft the transverse bulkhead which contains the entrance to the handling room rippled. The dairy, deep freeze, meat room, vegetable room and potato room are now a common space, all insulated partition bulkheads totally disintegrated. Aft bulkhead of refrigeration machinery space and refrigeration room bowed forward. Tank deck and refrigeration lobby bulkhead bulged out towards the tank deck space and plating ruptured in way of attachment of each step to bulkhead. Photo 2/5  
Photo 1/11  
Photo 2/4  
ref T2164  
Photo 1/7  
Photo 1/6

e. As a result of a survey conducted by divers, damage was also found to the port rudder blade aft of the stock which is indented over an area of approximately 3 ft by 2 ft and fractured for approximately 2 ft in length. All damage is on the inboard plating. The starboard rudder plating inboard is fractured longitudinally the Total width of the blade 2 ft down from blades upper edge. The Starboard propeller has a fracture 2 ft in length stemming from the tip of a blade down toward the boss. Appendix  
II

7. The displacement of the forward hatch and the effect on personnel forward it attributed to whip reaction caused by the underwater detonation of Bomb 3 under the transom. Appendix  
II

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F3/2

R.F.A. SIR TRISTRAM

REPORT ON SURVEY OF DAMAGE SUSTAINED WHILST THE VESSEL WAS ENGAGED IN THE FALKLAND ISLAND LANDINGS.

1. General Overall Damage

All accommodation, offices, wheelhouse, radio room, galley, domestic refrigeration space completely destroyed aft of bridge front.

All aluminium superstructure from the poop deck upwards almost totally destroyed by fire. Nos 25 and 26 ballast tanks severely damaged by bomb entry and resulting blast.

Rudder blades fractured.

2. Remaining Serviceability in General.

Upper and lower dormitories port and starboard in total fwd of the bridge front.

Heat and light available from ships plant to all habitable accommodation.

Firemain available from ships plant to spaces fwd of bridge front.

All deck machinery at focus.

Fwd cranes and aft 20 ton crane. The latter on temporary supply cable.

Ballast and deballast facilities.

Engine room auxiliary machinery with the exception of some electric motors damaged by sea water ingress.

Ships bottom reported by divers to be intact fwd of propellers.

3. Known Details of Damage Aft in Way Nos 25 and 26 tanks and Steering Flat.

It would appear that the ship was hit by at least two bombs.

Bomb A entered the stern door stbd chain locker creating a hole approx 14" dia at H strake in close proximity to vertical stern door compression bar and exited through the tank deck bulkhead plating of the chain locker at tank deck level. The bomb then passed over the tank deck and entered No 25 tank (P) through the port tank deck capstan stool and made its exit through the shipside of the tank at sea level.

Bomb B entered the shipside strake H frame K at the deck level of the stbd aft machinery starter room just fwd of the chain locker. It pierced the starter room deck entering No 25 stbd tank.

It is possible that a third bomb entered at No 25 tank under the steering flat to cause the damage in that tank.

At 25 tank (P).

Shell plate from fwd bulkhead frame C to frame E, strakes H and G, approx 40 sq ft of 0.35 AH2 plateruptured and deflected outward approx 90deg, including frames. Fwd bulkhead and stiffeners ruptured and deflected fwd a distance of 6ft from shipside and a similar distance inboard from centre line bulkhead toward outboard.

The floors at frames B, E, and F are badly distorted the whole breadth of the tank.

At 25 tank (S)

Bottom shell plating holed and plate bent in toward tank from frames E to G at strakes F and A.

Floors frames D to H badly distorted between centre line bulkhead and longitudinal girder 7'-6" from centre line.

Fwd bulkhead ruptured from centre line bulkhead to longitudinal girder 7'-6" from centre line.

At No 26 tank under steering flat.

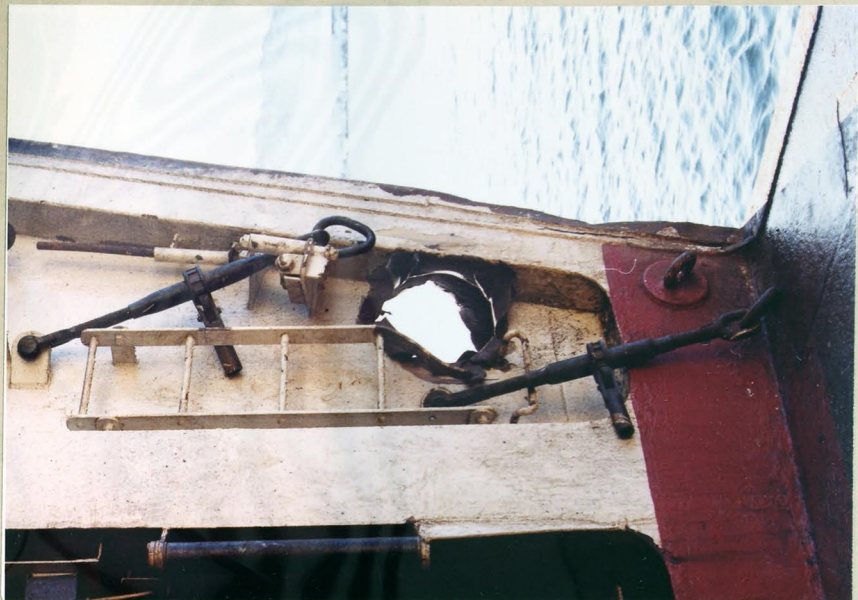
The following damage is based on the report received from the diver.

Bottom plating holed either side of the centre line girder, between frames C - 6.

At port of centre line one hole approx 20 sq ft in area and two holes each approx 1 sq ft in area.

At stbd of centre line hole approx 6 sq ft in area.

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F 3 - 15A



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The deckhead of the tank between frames C and A has been blown upwards approx 13 ft transversely and 3 ft longitudinally. This section of deckhead forms the deck of the steering flat between the aft end of the steering gear and the fwd bulkhead of No 25 tank.

#### 4. Damage At Steering Flat.

The shell plate (P) frames C - A adjacent to No 25 tank strakes G1 and G in 0.35 plate blown out, including the frames. Area approx 40 sq ft.

The deckhead of the steering flat frames C - 6 is bulged upwards due to blast. The max deflection is approx 9" transversely at frame 2. The deflection decreases towards the shipside. All deck head longitudinals and transverses still attached.

#### 5. Port and Starboard Rudders.

The following information is from the report by divers.

The rudders were found to be hard to port.

The port rudder blade aft of the stock is indented over an area approx 3' x 2' in the centre of which is a fracture 2' in length, all on the inboard plating.

The stbd rudder plating inboard is fractured longitudinally the total width of the blade 2ft from the top of the blade.

The rudder tillers have since been disconnected and rudders moved to midships.

#### 6. Domestic Fresh Water tanks P & S

The port aft bulkhead frame 2 very slightly distorted. Bulkhead pierced approx 3 sq" at 8ft inboard from shipside.

The remainder of the bulkhead appears to be intact. The aft bulkhead of this tank forms the fwd bulkhead of the steering flat.

#### 7. Propeller Blades

The following information is from the report by divers.

Starboard propeller has a fracture 2 ft in length stemming from the tip of a blade toward the boss.

#### 8. Remainder of the ships Bottom Plating

Divers search reported no further damage.

#### 9. Aft Beck Machinery Starter Room Stbd frs D - L

All electrical machinery damaged due to overheating by fire.

All starter panels damaged beyond repair. Ward Leonard set possibly recoverable by renewal of windings. All wiring damaged beyond repair.

Structural damage in way of shell plate approx 3 sq ft at fr K and approx 3 sq ft of deck plate in way.

#### 10. Arkas Pumproom, Frs E - B Stbd.

The fwd bulkhead which also contains the entrance door has been blown off in its entirety.

The Arkas pumps and tanks are immersed under debris and will require renewal.

The aft bulkhead is bulged approx 6" and is detached partially from the longitudinal bulkheads.

#### 11. Domestic Refrigeration Spaces frs D - 19

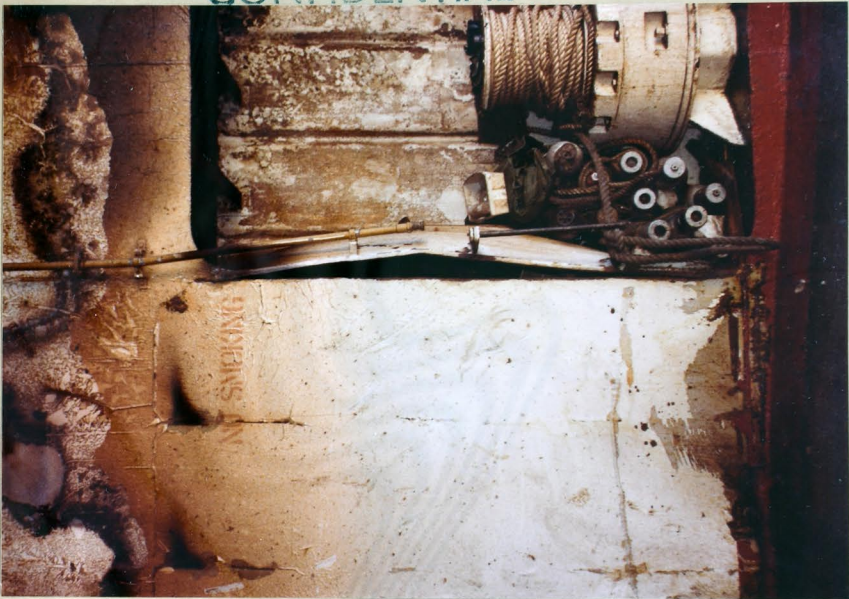
The ladder from the refrig' space lobby to the upper deck excessively distorted. The ladder screen bulkhead frs frs 1 - 5 and the fwd bulkhead with entrance door completely blown off.

The tank deck bulkhead in way of ladder bulged out toward tank deck space and plating ruptured in way of attachment of each step to bulkhead.

The tank deck bulkhead stbd from frs from frs C - 8 to a height of 1.6ft would require to be renewed.

The bulkhead from fr 8 - 16 to a height of 16 ft is rippled between stiffeners

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due to excessive heat.

The entrance door to domestic refrig lobby at frs 6 - 7 is badly distorted. This door is reported to have been blown in order to gain access.

The bulkhead between the potato room and the lobby frs E - 5 is blown outboard approx 4 ft.

The transverse bulkhead which contains the entrance to the handling room at fr 7 is rippled due to excessive heat.

The dairy, deep freeze, meat room, vegetable room, and potato room are now a common space all insulated partition bulkheads having totally disintegrated due to fire.

The fwd bulkhead of the meat room compartment and the inboard bulkhead of the meat room are bowed, the latter very slightly. The forward bulkhead is bowed approx 8" to the extent that it is fractured in way of the end vertical weld attachments and disturbed the refrigeration machinery mountings attached to the bulkhead.

The shipside in way of the domestic refrigeration spaces appears to be sound, and the fact that there has been no severe burning of the exterior paintwork it would indicate little damage.

The refrigeration space deck is deep in rubble preventing a proper examination of the deck, but the fact that there are no signs of heat under the deck in the machinery space would indicate that the steel plate is intact.

The main deck starboard fwd of frame No 20 is intact.

#### 12. Storeroom Spaces (P) at Main Deck from frames L - 19

All would appear to be structurally sound although all spaces have been affected cosmetically by fire damage and the stores held in those spaces have been ruined. The access door frames 5 - 6 however is slightly distorted but could be heated and faired.

#### 13. Tank Deck Space And Stern Door.

The stern door is missing. It is reported that the stern door was blown open by means of controlled explosive in order to gain access for discharge of remaining cargo.

The ship whilst lying at anchor subsequently went aground when the stern door is reported to have fouled the sea bed and been torn off from its hinges.

At present the door is still lying on the sea bed at Fitzroy.

The tank deck deckhead is blackened due to heat. The discolouration lessens toward the fwd.

#### 14. Damage at Upper Deck frames P - 48 Port and Stbd.

Other than the steel bulkheads the accommodation spaces are completely destroyed.

The photographs attached to this report will fully illustrate this fact.

At stbd from frames P - 10 the marine partition bulkheads have been blown down by blast.

The remainder of the spaces have been damaged by fire.

The following is typical of the damage found.

All mattresses, and every form of soft furnishing completely disappeared.

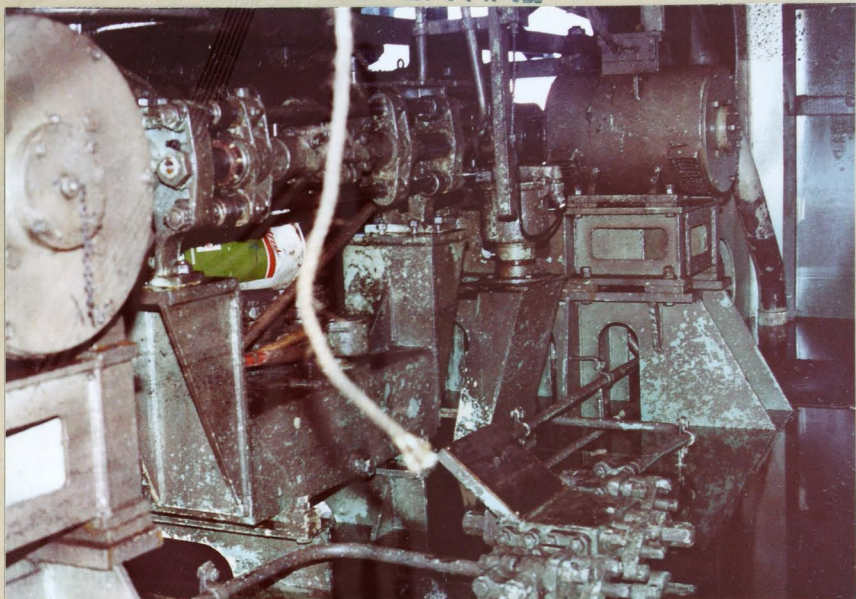
Wash hand basins and W.C bowls - many fractured or in pieces.

Marinite bulkheads and deckheads, other than those previously mentioned, mainly still in position, but bowed or bent due to heat. The mainite boards without exception are totally bare of laminate facings.

All electric cables and B B's destroyed.

The deckheads may be slightly distorted due to heat, but it is difficult to be certain due to the enormous amount of debris lying on the poop deck above.

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15. Damage at Poop Deck

All accommodation spaces at this deck have been totally destroyed.

The only structures remaining are the shipside bulkheads, bridge front - both in aluminium and partially burned and all distorted due to heat - engine room casings, galley extension, main galley, all of which are in steel. The kege anchor and mooring winch has suffered from heat but could be salvaged. The galley extension has suffered from severe heat, the marine panels which formed the deckhead and bulkhead linings are warped and distorted and all equipment destroyed.

At the main galley the deckhead has fallen in on top of the main range and all equipment is destroyed.

It is at this deck that the aluminium superstructure begins.

16. Damage at Upper Poop Deck

All that remains of this deck is the engine room casing, and the steel deck at the aft upper poop which supports the stern ramp winch.

The lifeboat davits are badly distorted due to heat.

17. Damage at Helicopter Boat Deck

The captains accommodation and radio officer's fwd of frame 40 no longer exist.

The A/C plant room badly destroyed. Equipment beyond repair.

The compartments frames 26 - 36 have been scorched by heat but can be salvaged.

The sweat pump room and the equipment contained have also been scorched but can be salvaged.

The CO2 bottle room badly scorched and the aft bulkhead partially destroyed by fire.

The transrector unit room, and the landing gear store both totally destroyed.

The engine room exhaust fan spaces are scorched but can be salvaged.

At the helicopter dock 80% of the aluminium deck at the perimeter is missing and that which remains is distorted.

The steel section of the deck at centre is badly buckled due to heat.

18. Damage at Navigating Bridge Deck

The radio room and all equipment destroyed totally.

The wheelhouse and all equipment destroyed totally.

All aluminium bulkheads partially destroyed by fire.

The battery locker and A/C unit room are badly scorched, equipment contained is not salvageable.

At the funnel front approx 60 sq ft of plating is warped due to the intense heat from the fire in the radio room immediately fwd.

The G.P.I. sited at the rear of the funnel appears to be unharmed.

The funnel casing in fact is intact apart from damage fwd.

19. Damage at Wheelhouse Top

The whole of this deck has collapsed resulting in the mainmast falling forward and resting on what remains of the bridge front.

20. State of Electrics, Pipework and other Services in the Damaged Spaces

In all the damaged spaces including those which have only been scorched all the electrical cables are unserviceable. Details of the circuits involved are attached to this report.

All pipework in the damaged spaces is also beyond repair.

All equipment, eg ships radio, water coolers, galley equipment, stores etc are either totally disintegrated or beyond redemption.

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2/5

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5/2

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21. Machinery (Mechanical)

Aft Deck Machinery. The Capstan/Kedge Anchor Winch and the Stern Ramp Winch, both have been badly scorched but should be salvageable.

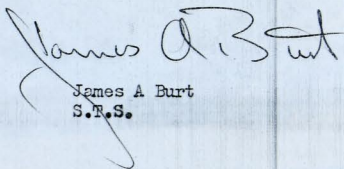
The P & S Capstans at the tank deck aft are un harmed mechanically.

Main Engines. The deflections which are enclosed with this report would indicate a degree of misalignment.

The Stbd engine had S.W. in the sump which has since been pumped out and the oil has been purified. L.O. has been pumped round both main engines.

Aux Machinery. With the exception of the machinery that is driven by motors which have had water ingress as listed in the Electrical Report the machinery is all operational.

Steering Gear The operational state of the steering gear at present is that there are no electrical supplies and therefore no prime mover to test the operation.

  
James A Burt  
S.T.S.

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F 3-19A

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REF 5/10

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note by the President of the Board: This is the first transcript for today Wednesday 1 September 1982. The time is 1248.

Q. Are you Dr Tony Hicks of Admiralty Marine Technology Establishment Dunfermline?

A. That's right.

Q. Could you explain to the Board what job you do there and your field of expertise?

A. I'm head of the Weapon Effects Section in the *Bomb Vulnerability* Division. We work primarily on effects of underwater weapons against ships but we also have considerable responsibility in the area of above-water weapons and particularly internal blast effects. In that respect we work quite closely with American establishments *as well as British*.

Q. In our discussions this morning you used the term detonation and deflagration, would you explain to the Board the difference between these two phenomenon?

A. Detonation is the instantaneous conversion of the explosive to high pressure gases with a great deal of energy. Deflagration is a rather slower process, although still very fast, it involves a build-up of pressure and burning of the explosive rather than direct detonation.

Q. Would deflagration be felt like an explosion or would it be felt differently?

A. In many respects it is like an explosion but the pressure wave is nowhere near as intense and can be much more diverse. It leads to the evolution of gas rather than ~~an~~ <sup>direct</sup> instantaneous generation of gas.

Q. We were looking at the possible arrival of two bombs on the tank deck level. If one of those had actually deflagrated what would have been the effect in that compartment?

A. The immediate effects would be ....

Q. Can I just correct that, we're talking about the tank deck of SIR GALAHAD and from here on we will talk about SIR GALAHAD and I will make a definite statement when we talk about SIR TRISTRAM.

A. I think <sup>were</sup> / a bomb to deflagrate on SIR GALAHAD, the compartment concerned would suffer something close to an explosion but not necessarily with severe

structural damage associated with it. Vast amounts of gas would be evolved very very quickly. It is quite likely that the gas would be incompletely burnt so that much of it could burn later in contact with air. The gas would then spread rapidly through the surrounding area of the ship, try to vent to the atmosphere and as it went could burn as it met fresh air, which means it could generate flame fronts passing through the surrounding areas of the ship.

Q. Having described the effects on people and equipment to you on the tank deck, do you believe that that is synonymous with detonation or deflagration in the way you have described?

A. I think its much much more likely to be associated with deflagration than with a detonation.

Q. <sup>Is it</sup> It is also possible in your view that the thicknesses of steel that the bombs had could have damaged to such an extent that deflagration to have occurred???

A. I think that would <sup>be</sup> very difficult to say. Almost certainly in that area there would be areas of metal which would be sufficient to be able to pierce the skin of a bomb. I think that's a statistical probability really.

Q. If there were other forms of ammunition, and I'm talking about mortars in plastic containers, mortar bombs in plastic containers, personal ammunition of rifle type, in fact light scale weapons, stacked in a heap as we've shown you. What is the likely effect of that be upon deflagration of a weapon? Very close to that say within feet or even right by it?

A. Very close to, they could get hurled around a reasonable distance but a little bit further away its merely a question of the gas rushing by. They could eventually cook-off in the burning resulting but the fragmentation problem shouldn't exist in the same way that it would detonation. They'd be much <sup>less</sup> likely to detonate sympathetically.

Q. If much of this ammunition was stored on wooden pallet containers, would they be likely to catch fire very quickly?

A. I would think that's quite likely but its really not an area I would be too familiar with. There should be quite intense heat in the flame front.

Q. Moving now to the weapon which we've described <sup>which</sup> probably went through the engine casing slightly higher than those other two. And its path could have possibly taken it into the vicinity of the diesel tank. If <sup>a</sup> bomb travelling on that path was to strike that tank could you give us some estimate as to what might happen?

A. If the tank were only partially full, the fluid might get thrown around a certain amount. In tearing the tank its quite possible there would be sufficient heat <sup>and</sup> associated with the the bomb as well to actually perhaps ignite the fluid. If the tank were fairly, almost totally, full as the bomb went through it might burst at the seams and squirt out fairly violently in all directions. Again in fairly solid liquid form but capable of ready ignition.

Q. So therefore it might be ignited either by the energy of the bomb going through or by other hot igniters in the vicinity?

A. Yes indeed and if a bomb had deflagrated anywhere that flame front could readily ignite the fuel as well.

Q. The fuel when it does though, would that have similar symptoms to <sup>a</sup> deflagration bomb?

A. Depending on how finely dispersed it was, it could have characteristics rather similar to deflagration, probably on a slightly slower basis - releasing its gas <sup>somewhat</sup> rather more slowly than flame front.

Q. By being confined in an engine casing it would tend to strengthen that possibility rather than weaken it?

A. I doubt that would have a great deal of effect.

Q. We have discussed with you, Dr Hicks, about the damage in the Second Engineer's office area and also we believe that the screen, the external screen, to this compartment is pierced by cannon shell. Would you imagine that the damage caused within there that we have described is commensurate with cannon?

A. Yes it seems to be much more characteristic <sup>of</sup> I would expect for small charges going off than any substantial amount of explosives.

Q. And to go to the deck underneath, the troops cafeteria, here again we have described the damage. Could you attribute this to any forms of weapon?

A. Well again it sounded, the considerable amount of blast damage, sounded more like small weapons perhaps than something large, although as I think we discussed, its possible the blast did come along from .... if the weapon deflagrated further aft it could have spread the blast into that area. The actual damage to the tables sounded like local weapons going .... small weapons going off.

Q. There is one other area of damage in the Junior Engineer's Office cabin, which we described to you. Can you offer us any explanation <sup>in your view</sup> as to what might have caused that?

A. It seems a little bit inexplicable, other than perhaps if there were a hole for venting the deflagration flame front into that area, it could cause that type of damage. But otherwise it seems not clear.

Q. Dr Hicks, perhaps now if we could turn to the SIR TRISTRAM, and again we have discussed there with you the effects we've had and shown you photographs of that ship. In your view can you describe what you think might have been the cause of the damage you've seen?

A. Well it certainly looks as though there was at least partial detonation of one of the weapons inside the ship. The damage appeared perhaps a little less than I might have expected from the amount of explosives involved but generally it looked characteristic of an explosion. The one that went off under the ship again the damage looks reasonably characteristic in explosion but again somewhat less than I might have expected, although in that case it may have been that it was actually <sup>detonated</sup> under the overhang rather than directly under the area in contact with the water. In which case that would have limited the damage to the hull itself.

Q. There is a plate removed on the port side of the ship, just <sup>above</sup> about the waterline aft, would that be commensurate with an explosion inside the ship in that area?

A. I would have thought that was entirely commensurate with an internal burst in that area.

Q. Up forward we've described the symptoms of the cargo hatch and one cargo hatch





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Enclosure B  
To Appendix 3  
F3

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Lillie Road  
LONDON SW6 1TR

Your reference  
  
Our reference  
N6H4  
Date  
6 September 1982 X0/92

Dear Mr Chadwick

Further to my visit to the board of enquiry, on Wednesday, 1 September, I offer the following opinions:

Sir Galahad:

From the verbal descriptions of the damage given at the meeting I feel it is most unlikely that any of the three bombs detonated normally. Full detonation of 250 lb HE would be expected to produce fairly complete destruction of structure over a length of 50-80 feet. Such destruction did not apparently occur. The conditions and damage described do however seem fully compatible with deflagration of one or more of the bombs. Such deflagration would spread fire and smoke almost instantaneously through quite large regions of the ship, and would probably do so more effectively than complete detonation could.

Sir Tristram:

The damage described at the meeting, and in the Burt report supplied, seems consistent with deflagration or partial detonation of one bomb in tank 25, and complete detonation of one bomb in the water under the transom. The tank damage seemed rather less than I would have expected from past evidence for the full detonation of 250 lb HE. Partial detonation with deflagration of any residual explosive would seem a likely possibility, but deflagration on its own would possibly have been sufficient to produce the observed damage and effects.

The description of damage to the rudders and underside of the hull given in the Burt report would be consistent with full detonation of 250 lb HE between 4 and 12 feet to port of the centreline and between 16 and 25 feet aft of the rudder stocks (more or less directly beneath the transom). Such a location would also be consistent with the whipping observations. Whipping calculations suggest that such a charge would have broken the back of the ship had it been a few feet nearer, but would have been too remote to cause the observed effects at the bow had it been 10 feet further astern. In any case, to produce the observed effects at the bow, the ship must shake very severely, as the attached figures show.

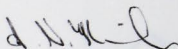
The above comments on the underwater burst are based on the assumption of full detonation of the charge. However, this assumption would not be critical. Partial detonation could produce much the same effects if the charge were just a little closer. Charge position seems to be the critical feature rather than charge size. Nevertheless, even for partial detonation the equivalent charge size would probably need to be at least 100 lb of HE to produce enough energy for the effects observed in the bow so that full detonation seems the most reasonable assumption.

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The overall assessment then is that quite possibly none of the bombs which actually hit the ships detonated correctly, while the one which did not hit, did detonate. It might help support your general conclusions if such behaviour of the bomb fuses has been observed in other attacks.

I hope the above comments are adequate. Please let me know if you require anything further.

Yours sincerely



A N Hicks  
Head of Weapon Effects Section

ANH/AN

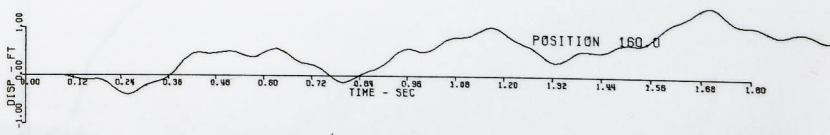
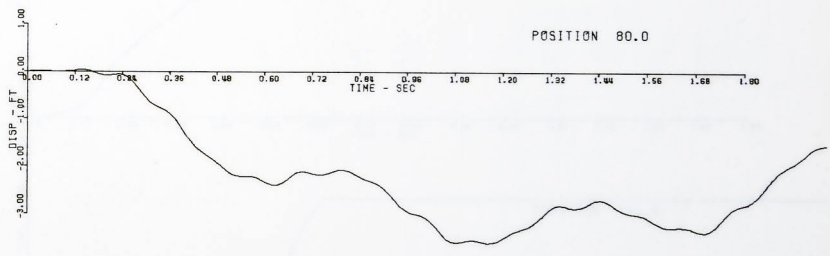
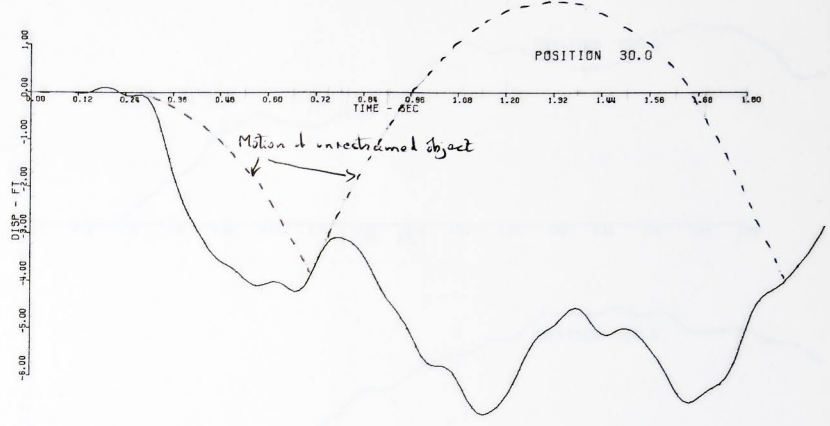
Enc

DISPLACEMENT PLOTS

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LSL -- XW = 390



DISPLACEMENT PLOTS

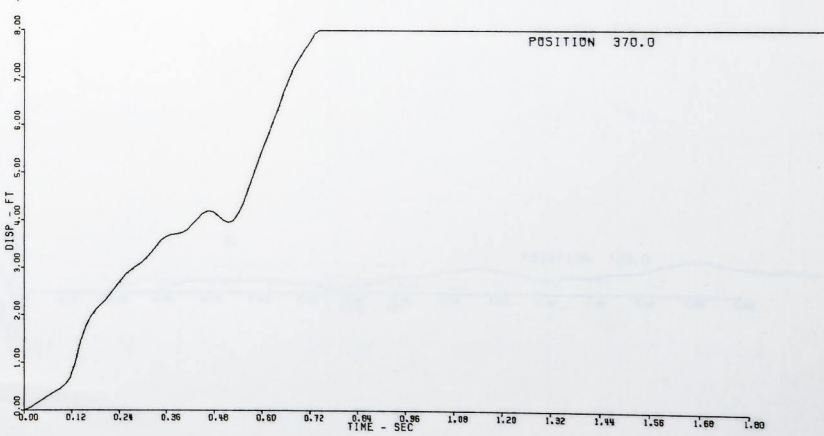
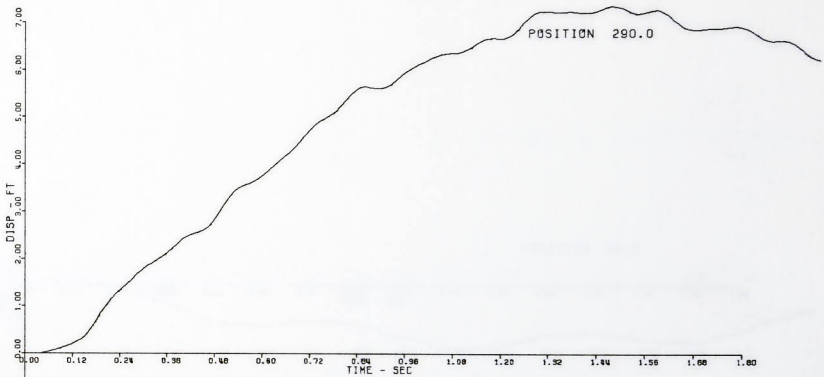
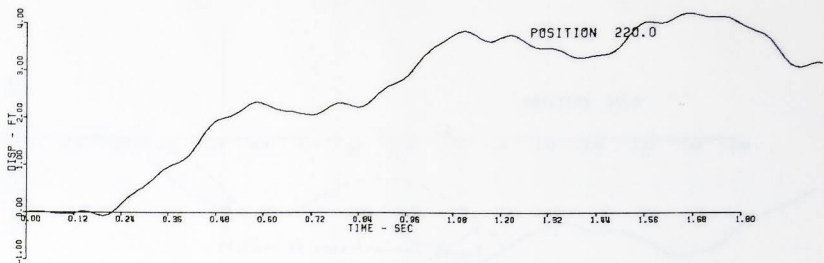
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250 lb HE ~ 10 feet aft of rudder stocks

F3:27

CONFIDENTIAL

LSL -- XW = 390



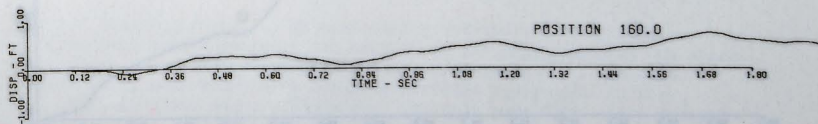
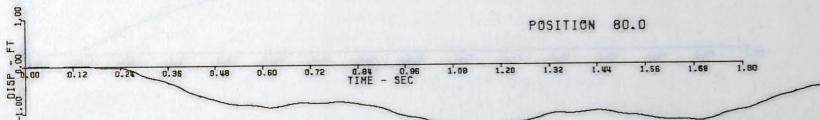
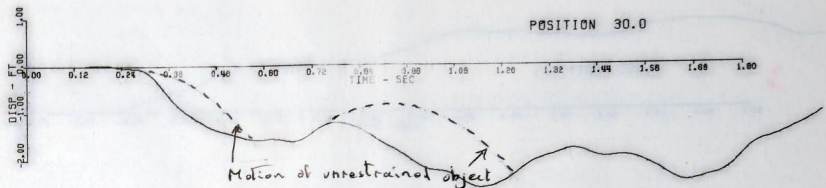
DISPLACEMENT PLOTS

CONFIDENTIAL

250 lb HF ~ 10 ft & rudder sticks  
FB:28

CONFIDENTIAL

LSL -- XW = 400



DISPLACEMENT PLOTS

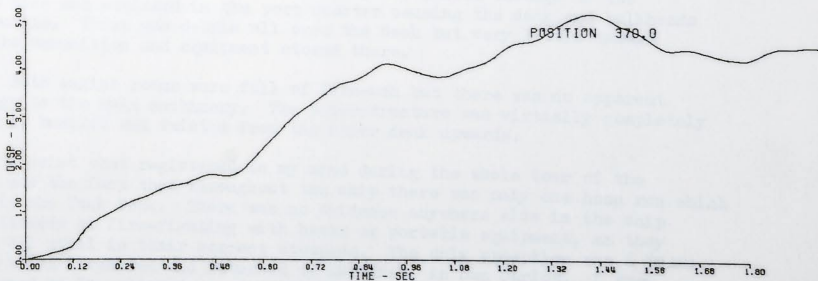
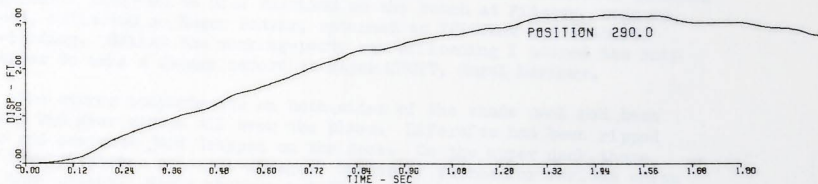
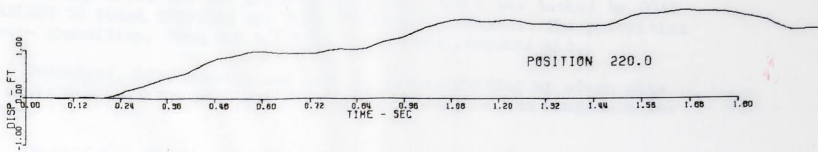
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250 lb HE ~ 20 feet aft of rudder locks

F3:29

CONFIDENTIAL

LSL -- XW = 400



DISPLACEMENT PLOTS

CONFIDENTIAL

250 lb HT ~ 20 feet aft of rudder stocks.

F3:30

REPORT OF BOARDING HULK SIR TRISTRAM BY CSGT B DAVIES

The day after she was hit during an air raid I was tasked by OCAS FEARLESS to board TRISTRAM and start offloading stores. The priorities were:- Ammunition, Food, R.E. Bridge Sections and personal kit.

Overnight, FCDT members had cut the chains holding up stern gate by explosives and the gate was hanging vertically on its hinges in the water.

On entering the trunking I discovered that a fire was still burning on the Port side causing the paint to blister and peel. As the ammunition was stowed directly under this bulkhead I commenced boundary-cooling. I also re-entered the dry provision store which was the scene of the fire and started fighting the fire. Approximately 1½ hours later the FCDT stopped the fire-fighting and ordered the hatches to be closed; I obeyed but continued boundary cooling on the bulkhead in the trunking. Being satisfied that the stores could be removed without the ammunition becoming dangerous I returned to OCAS FEARLESS on the beach at Fitzroy, made my report, collected an Eager Beaver, returned to TRISTRAM and started off-loading. Whilst the working-party was offloading I toured the ship in order to make a damage report to Major KNOTT, Royal Marines.

The stores compartments on both sides of the shade deck had been broken and gear strewn all over the place. Liferrafts had been ripped open and contents just dropped on the deck. On the upper deck there was buckled plates and fire damage. Crates of stores for various ships had been opened. Scare charges and 40/60 Ammunition was strewn all over the upper deck.

On the Starboard side mess-decks there was little damage, just everyday gash lying around. The Port side messdecks belonging to RCT had had lockers broken and personal effects were strewn all over the deck. Lockers had been broken open and bedding thrown around.

In the Tank Deck at the after end of the trunking, the bomb had entered the starboard side of the stern gate, passed through to the port side and exploded in the port quarter causing the deck and bulkheads to buckle. There was debris all over the deck but very little damage to the ammunition and equipment stowed there.

Both engine rooms were full of fire-ash but there was no apparent damage to the main machinery. The superstructure was virtually completely melted, buckled and twisted from the upper deck upwards.

A point that registered in my mind during the whole tour of the ship was the fact that throughout the ship there was only one hose run which was in the Tank Deck. There was no evidence anywhere else in the ship of attempts at fire-fighting with hoses or portable equipment, as they were all still in their correct stowages. The only exception was 6 ICABA sets which I removed and returned to INTREPID, in San Carlos. I then returned to T1, slipped, went to the beach, offloaded the ammunition and stores, made a verbal report to OCAS FEARLESS, having left Captain LEWIS, RAOC on board TRISTRAM.

I then circled GALAHAD but she was still burning too fiercely for me to board her. I reported this to OCAS FEARLESS who then tasked me to board GALAHAD the following day.

REPORT OF BOARDING HULK SIR GALAHAD BY CSGT B DAVIES

Two days after she had been hit during an air raid, I was tasked to board GALAHAD by OCAS FEARLESS, to survey damage to the ship and assess whether stores could be removed from her.

I circled the GALAHAD which was still burning and giving off thick black smoke. Both sides of the hull were disfigured by fires burning on the inside which had stripped the paint down to the waterline. Some scuttles and deadlights towards the after end of the ship also showed signs of fire damage. I finally decided that the safest place to go alongside was port forward. I secured T1 alongside and boarded GALAHAD. The shade-deck on that side was littered with burnt SLRs, SMGs, 84mm, IWS, Fighting Orders, helmets etc. Ammunition was all over the place, both expended and live. All the compartments on that side were still emitting smoke from vents and the edges of hatches. The steel was still hot to the touch so I did not open any.

The upper deck was buckled and burnt both forward and aft. I inspected the fore end and found:- 40/60 Ammunition had cooked off even inside its insulated containers. A 40/60 barrel was lying on the deck by the port forward crane. Scare charges were all over the place. The foreward store compartments on the upper deck were completely burnt out.

On moving aft along the upper deck there were more weapons and personal gear, burned, all over the place. The deck was buckled and burned, with several holes, which I assumed must have been caused by ammunition exploding in the tank deck below and piercing the upper deck.

I found one body of an 84mm gunner laid on the after end of the upper deck with webbing and weapons beside it. I did not touch the body which was lying face down. The superstructure was completely destroyed, melted, buckled and twisted and still smouldering. Again there was no evidence of any attempt at fire-fighting. The deck temperature at this point could be felt through my boots. On the port shade-deck all the compartments were emitting smoke and the after tank deck access had been blown open. I entered, went down into the port accommodation passage and on into the tank deck.

The accommodation was completely burned out and I was walking through all kinds of debris, some of it human. One skeletal frame had apparently been heat-welded on to the bulkhead, which was still burning.

The passageway bulkheads were twisted and blast bent and closed in towards the front. On entering the Tank Deck I found large holes in the deck with flames shooting out of them, at times hitting the underside of the upper deck.

There was human debris spread all over the foreward end of the Tank Deck, arms, legs, boots etc all blast and fire damaged. There were piles of ammunition-boxes blown apart and ash inches deep all over the deck. By this time I was physically sick and returned to T1 slipped and made a verbal report to OCAS FEARLESS. The next day I was tasked by Commander (E) FEARLESS to board GALAHAD again so he could carry out a survey. This I did but during the time he was on board I remained on the port shade deck by T1. Yet again the following day I was tasked by Commander (E) FEARLESS to board GALAHAD and remove a Spate D.C. pump and transfer it to TRISTRAM. This I did then returned to Fitzroy jetty.

/ During the.....

During the whole time I was detached to Brigade at Fitzroy I saw parties of men going to and from both ships by liferafts removing all kinds of equipment. On one occasion the Scots Guards were using the GALAHAD for target practice, firing GPMGs from the shore at a range of approximately 300 metres.

REPORT ON THE BOARDING OF SIR TRISTRAM BY CSGT GARWOOD AND THE CREW OF T3

We boarded the day after she had been attacked in an air raid.

We were the third LCM to board, with the task of off-loading stores and to obtain as many fire hoses as possible for use ashore.

We berthed on the stern, (the ramp had been blown by engineers before our arrival and hanging down).

A working party was already on board to offload stores.

On entry we found the deck coming down to the stern ramp was buckled upwards and the bulkheads either side were also buckled and blackened and were still hot.

The vehicle deck forward of the run-down to the ramp was intact with no damage.

The compartment on the port side by the stern ramp had a large hole on the water line and was partly flooded.

The upper deck forward of the superstructure was undamaged, also compartments below deck from the same point forward were undamaged.

The superstructure was badly damaged by fire and melted away in many places. There was a large hole on the starboard side just below the Flight Deck.

The fire doors leading into the superstructure were closed and containing any fire that was still burning.

REPORT OF RFA SIR TRISTRAM AND RFA SIR GALAHAD BY CSGT B HOLLINRAKE

SIR GALAHAD

I arrived at Fitzroy Port two days after the bombing

1. Fire still burning in Vehicle Decks.
2. Superstructure from Bridge to Stern melted and impossible to negotiate.
3. T4 off-loaded 2 x R.R.C. & 3 x Johnson 125HP OBM's with aid of Sea King & working party on board.

SIR TRISTRAM

1. Stern ramp was removed by explosives.
2. Superstructure was melted from Bridge to Stern and impossible to negotiate.
3. Small fire in port after storerooms about 4 deck level.
4. T2 & T4 were able to remove 95 pallets of ammunition.
5. 3 x motorized lifeboats were ferrying small parties of troops on board for the two days I was there.
6. Tasked to find and remove all cutlery and crockery by Captain EDWARDS, OCAS FEARLESS, which we did.
7. Most messdecks had all lockers open and personal effects were thrown over the deck. Lockers had been bust open.
8. Personal suitcases had been placed in vehicle decks but we were not allowed to remove them.

ANNEX G 1



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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX G DATED 23 SEPT 82

SIR GALAHAD

- Annex G1 Material Readiness & Training State of RFA SIR GALAHAD prior to FITZROY
- Annex G2 SIR GALAHAD State at Time of Attack
- Annex G3 Attack by Argentine Aircraft on SIR GALAHAD at FITZROY
- Annex G4 Problems arising from Equipment & Design of Landing Ship Logistic
- Annex G5 Medical
- Annex G6 Plan Location of Injured on SIR GALAHAD

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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRIM  
 & SIR GALAHAD  
ANNEX G1 DATED 23 SEPT 82

MATERIAL READINESS AND TRAINING STATE  
OF RFA SIR GALAHAD PRIOR TO FITZROY

MATERIAL STATE

1. Damage Control. The Fleet NBCD from PORTLAND spent a period of days on board en route to ASCENSION. Equipment and systems were checked and exercises observed, a few minor points were raised; their opinion was the equipment was in good order and the ship was adequately equipped for the number of people carried. The ship was struck by a UXB whilst in SAN CARLOS and the passage of the bomb rendered two BA sets inoperative. One operational set was cannibalised from the two damaged ones, and a STOREDEM raised for a replacement, this did not arrive before the ship left for FITZROY. The Board consider that the Damage control equipment was in a good material state.
 

	G0204
	G0281
	G0044
	G0310
	G0308
  
2. Machinery. The ship was due annual refit in July 82, however at the time in question all machinery items were in date for survey as shown by the Lloyds Survey list. Some difficulty had been experienced on the passage from UK with contaminated fuel this was the subject of an OPDEF that was partially rectified by ships staff and appeared to have little effect on the operation of the machinery. It is considered that the repairs carried out to the damage caused by the UXB whilst at SAN CARLOS were satisfactory under conditions of war. Completion of welding of the ships side plate fitted by HMS INTREPID staff would have been beneficial, but the task was completed by GALAHAD and the ship was considered in a seaworthy condition. The repairs carried out to the Port side troops accommodation, while not complete with respect to lighting circuits, did result in the escape routes being restored and it is felt that Captain ROBERTS was justified in allowing this accommodation to be used thereby reducing the number of military personnel required to be billeted on the tank deck. It is the opinion of the Board that SIR GALAHAD was in a good material state and that weather conditions had no effect on machinery or equipment.
 

	Appendix I
	G0194
	Appendix II
	G0208
	G0341
	G0198
  
3. Medical. The hospital was generally well stocked with drugs and equipment before the ship sailed for the South Atlantic. The provision of Neil Robertson stretchers was insufficient for the numbers borne and their distribution unsatisfactory. It is clear that evacuation of casualties to the boat, vehicle and shade decks, and thence to rescue craft or helicopters, would have been facilitated by greater numbers of Neil Robertson stretchers.
 

	G1521
	G0539
	G0923
	G0189

G1-1

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READINESS STATE

4. Damage Control. It became apparent to the Captain on sailing ASCENSION IS that the peacetime Damage Control organisation in force would not cope with a warlike environment where other factors such as Air defence, weapon co-ordination and action states have to be considered. Daily Heads of Department meetings were instituted, an officer was appointed as Ship Air Defence Officer, and discussion took place. Advice was sought from the embarked Force and HM Ships in company and a modified ACTION/DC organisation was evolved. It is the opinion of the Board that the new organisation was well thought out and achieved a high degree of readiness. G0018  
G0216  
G0279  
G0572  
G0283  
G0210
5. Machinery. All the machinery was in good order and serviceable. At action stations additional generator capacity was provided. During the hours of daylight Main Engines were on immediate notice and in Bridge control, and the fire main was pressurised. Even though only one senior Engineer Officer survived the attack it is considered that the machinery and the Engineering department were at a high degree of readiness. G0226  
G0227  
G0230
6. Medical. The first aid organisation was generally unsatisfactory. At the outbreak of hostilities it consisted of two teams comprising the Medical Officer and the Purser, each with Chinese stretcher bearers who were virtually untrained in first aid. G2988  
G1524
- The arrival of [redacted] considerably strengthened the operational efficiency of the medical department, although he did not receive clear directives [redacted] and was left to organise first aid parties on his own initiative. On the passage south from ASCENSION IS a Medical Squadron was embarked, and during this time casualty evacuation procedures were exercised. However, the Squadron left the ship at SAN CARLOS, and the ships first aid organisation reverted to its former inadequate state. This fact was well demonstrated when five casualties were sustained when the ship was hit by a UXB at SAN CARLOS. On this occasion the casualties were evacuated to the ships hospital by the LMA and RCT personnel in the absence of the official first aid party. Despite this lesson the first aid organisation was not modified, [redacted] G3001  
G3002  
G3009  
G1530
- [redacted] G1541
- [redacted] Morale aboard SIR GALAHAD was good throughout the campaign, and there was no evidence of stress-induced anxiety sufficient to impair operational efficiency. Neither was fatigue a significant problem, and there were no cases of excessive alcohol consumption. G1662

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TRAINING

7. The modified Action/Damage control organisation was tested under exercise conditions on the way south to SAN CARLOS. The frequency of safety routines and drills was increased, gun functioning trials and weapon co-ordination and control were carried out. With the exception of the medical shortcomings it is considered that the state of training of the ships company was as high as could be achieved in the timescale allowed and that SIR GALAHAD could cope adequately with most threats. This was borne out by the fact that on being hit by a UXB in SAN CARLOS the ship dealt with the incident in a competent manner. G0286  
G0199  
G2185
8. One area of training that did give the Board cause for concern is the lack of tactical knowledge [REDACTED]. This was obvious when questioning individual [REDACTED] especially on Air Defence Policy and the implementation of such policies. While all were quite clear where Air Defence information namely Air Raid Warnings would come from whilst in close company with HM Ships, in any other situation the responsibilities, capabilities and methods of communication became a very grey area. G0190  
G0591
9. Officers of the watch tended to rely too heavily on the Naval Tactical Rating, who whilst being the acknowledged specialists in the translation of coded signals this does not absolve the OOW from having a basic working knowledge of Tactics and the Tactical Publications. G0739  
G0485

CONCLUSION

10. It is concluded that whereas there were shortcomings in certain areas, Captain ROBERTS by his policy of involvement of others in the formulation of new plans and organisations, and the ready flow of information that existed via the daily Head of Department meetings produced a well led ships company that acted and thought of themselves as a team. G0250  
G0714

RECOMMENDATIONS

11. It is recommended that:
- a. A Damage control organisation that includes an action stations state should be laid down, and this should be included and exercised during the Basic Operational Sea Training carried out by the Flag Officer Sea Training at PORTLAND.
  - b. When on exercises Royal Fleet Auxiliaries should go to the action states as dictated by the tactical situation.
  - c. The Captain of any RFA should undergo a tactical course at the Maritime Tactical School HMS DRYAD and that designated Captains of LSLs should have a basic knowledge of AW.

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G1-3

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d. Any Officer of the Watch of an RFA should have a basic tactical knowledge and be familiar with the tactical Publications.

e. All RFA Officers regardless of specialisation should receive first aid training early in their careers. This should comprise a course of at least two days with particular emphasis on practical aspects. This should be reinforced by regular exercises involving dummy casualties.

f. Training of Chinese crew or indeed any rating designated as first aid party should be undertaken by the ships Medical Officer, who should satisfy himself as to their performance.

g. The present establishment of six Neil Robertson stretchers should be revised to eighteen. At present there are no stretchers readily available for evacuation from the troops accommodation spaces, although these dormitories can sleep more than 300 men. One stretcher should be fitted in A1 and A2 dormitories, and three should be sited in the port and starboard troop alleyways at the top of the ladders leading to the lower dormitories. One should be stowed at each end of the tank deck, and one each side in the crews accommodation alleyways.

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# Lloyd's Register of Shipping

Telephone 01-709 9166

Telex 888379

Cables Committee, London EC3

LR. NO.

SHIP'S NAME

SIR GALAHAD

561550 E

71 Fenchurch Street, London, EC3M 4BS  
Quarterly Notice

GROSS TONS

4473

DATE OF BUILD

12-66

FLAG

UNITED KINGDOM

(00545)

APPE

To AN

YOUR ATTENTION IS DRAWN TO ANY OVERDUE SURVEY(S), UNLESS YOU HAVE ALREADY DONE SO OR THE VESSEL HAS RECENTLY BEEN UNDER SURVEY FOR THE INSPECTION(S) IN QUESTION THE SOCIETY'S LOCAL SURVEYORS IN YOUR AREA OR HEAD OFFICE LONDON OF THE PROPOSED ARRANGEMENTS AS SOON AS POSSIBLE (SEE NOTES AT FOOT OF PAGE).

## EXPIRY DATES OF STATUTORY CERTIFICATES

LOADLINE 19/07/83

MINISTRY OF DEFENCE (NAVY)  
DIRECTOR OF SUPPLIES & TRANSPORT (NAVY)  
SECTION FMV75A  
ROOM 626  
EMPRESS STATE BUILDING  
LONDON SW6 1TR

ML/NO	*** OVERDUE MAIN SURVEYS ***	ASSIGNED DATE	DUE DATE	POSTPONEMENT NEW DATE	DUE NEXT 6 MONTHS
	OTHER MAIN SURVEYS				
	CONTINUOUS SURVEY HULL	07-79	07-82		YES
	CONTINUOUS SURVEY MACHINERY	07-78	07-83		YES
	PERIODICAL LOADLINE INSPECTION	22-07-81	20-07-82		YES
	ANNUAL CLASSIFICATION	22-07-81	20-07-82		YES
	BUCKING SURVEY	07-81	07-83		
1365	PORT TAILSHAFT SURVEY	07-80	07-85		
1922	STARBOARD TAILSHAFT SURVEY	05-78	05-83		
1984	FORWARD DOMESTIC PACKAGE BOILER (OTHER THAN MAIN W.T.)	07-81	07-82		YES
2044	AFT DOMESTIC PACKAGE BOILER (OTHER THAN MAIN W.T.)	07-81	07-82		YES

## \*\*\* OVERDUE HULL ITEMS \*\*\*

## \*\*\* OVERDUE MACHINERY ITEMS \*\*\*

## \*\*\* OVERDUE CONDITIONS OF CLASS \*\*\*

## OTHER CONDITIONS OF CLASS

07/781 SET IN SHELL NO.3 IN SECOND BELOW (PF) \* BY 07/82  
 07/881 PORT MAIN ENG ENTABLATURE LINER LANDINGS NO 1,2,3,4,5 & STBD MAIN ENG ENTABLATURE LINER LANDINGS NO.6  
 07 OBSERVATION AND \* BY 07/83

## HULL ITEMS DUE IN NEXT 12 MONTHS

ML/NO	DESCRIPTION	DUE DATE	ML/NO	DESCRIPTION
2187	THICKNESS DETERMINATION	07-82		
2268	1ST SECTION UPPER DECK SUPERSTRUCTURES	07-82	3478	TEST NO.7. STARBOARD OUTER DEEP TANK
2282	3RD SECTION UPPER DECK SUPERSTRUCTURES	07-82		TEST NO.9. PORT INNER F.W. DEEP TANK
2349	4TH SECTION POOP TWEEN DECK SPACE	07-82	3504	TEST
2356	3RD SECTION POOP TWEEN DECK SPACE	07-82		TEST NO.9. STARBOARD INNER F.W. DEEP TANK
2363	UPPER POOP TWEEN DECK SPACE	07-82	3535	TEST

NOTE: The data shown in this notice is the latest recorded at the date of printing and does not include surveys held but not yet reported.

## NOTICE OF SURVEYS

It is the responsibility of Owners to ensure that all surveys necessary for the maintenance of class are carried out at the proper time under the supervision of the Society's Surveyors. The Society will give timely notice to Owners about forthcoming surveys by means of a letter or a Quarterly Computer print-out. Such notice does not absolve Owners from their responsibility to comply with survey requirements for the maintenance of class. Non-compliance with Classification requirements may jeopardize the validity of certain statutory certificates and ultimately result in withdrawal by the Society.



# Lloyd's Register of Shipping

Telephone 01-709 9166

Telex 888379

Cables Committee, London EC3

LR. NO.

SHIP'S NAME

5615508

SIR GALAHAD

71 Fenchurch Street, London, EC3M 4BS  
Quarterly Notice

GROSS TONS

4473

DATE OF BUILD

12-56

FLAG

UNITED KINGDOM

YOUR ATTENTION IS DRAWN TO ANY OVERDUE SURVEY(S), UNLESS YOU HAVE ALREADY DONE SO OR THE VESSEL HAS RECENTLY BEEN UNDER SURVEY FOR THE INSPECTION(S) IN QUERIES THE SOCIETY'S LOCAL SURVEYORS IN YOUR AREA OR HEAD OFFICE LONDON OF THE PROPOSED ARRANGEMENTS AS SOON AS POSSIBLE (SEE NOTES AT FOOT OF PAGE).

## HULL ITEMS DUE IN NEXT 12 MONTHS

ML/NO		DUE DATE	* ML/NO	
2394	3RD SECTION UPPER TWEEN DECK SPACE	07-82	* 3542	NO.10. W.A. AND FLUME DEEP TANK IN ENTIRETY
2420	3RD SECTION STARBOARD LOWER TWEEN DECK SPACE	07-82	* 3573	NO.11. PORT OUTER DEEP TANK IN ENTIRETY
2437	3RD SECTION PORT LOWER TWEEN DECK SPACE	07-82	* 3609	NO.11. STARBOARD OUTER DEEP TANK IN ENTIRETY
2482	BOAT TWEEN DECK SPACE	07-82	* 3630	NO.12. PORT INNER O.F. DEEP TANK IN ENTIRETY
2499	MAIN ENGINE ROOM	07-82	* 3661	NO.12. STARBOARD INNER O.F. DEEP TANK IN ENTIRETY
2549	NO.21. PORT DRY DOUBLE BOTTOM TANK	07-82	* 3692	NO.13. PORT OUTER DEEP TANK IN ENTIRETY
2556	NO.21. STARBOARD DRY DOUBLE BOTTOM TANK	07-82	* 3728	NO.13. STARBOARD OUTER DEEP TANK IN ENTIRETY
3047	NO.17. PORT RECLAMATION OIL DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3759	NO.14. PORT INNER O.F. DEEP TANK IN ENTIRETY
3078	NO.17. STARBOARD SLUDGE DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3790	NO.14. STARBOARD INNER O.F. DEEP TANK IN ENTIRETY
3104	ENGINE ROOM NO.20. PORT FORWARD DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3816	NO.15. PORT INNER O.F. DEEP TANK IN ENTIRETY
3135	ENGINE ROOM NO.20. STARBOARD FORWARD DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3847	NO.15. STARBOARD INNER O.F. DEEP TANK IN ENTIRETY
3166	ENGINE ROOM NO.22. CENTRE DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3878	NO.16. PORT OUTER D.O. DEEP TANK IN ENTIRETY
3197	ENGINE ROOM NO.29. PORT FORWARD L.O. DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 3904	NO.16. STARBOARD OUTER FUEL DEEP TANK IN ENTIRETY
3223	ENGINE ROOM NO.29. STARBOARD FORWARD L.O. DOUBLE BOTTOM TANK IN ENTIRETY	07-82	* 4057	UNDER ENGINES
3285	ENGINE ROOM DOUBLE BOTTOM PORT COFFERDAM	07-82	* 4107	STARBOARD LIFT CENTRE ECHO SOUNDING COMPARTMENT
3292	ENGINE ROOM DOUBLE BOTTOM STARBOARD COFFERDAM	07-82	* 4121	PORT AFT DOUBLE BOTTOM LOG COMPARTMENT
3447	TEST	07-82	* 4145	ANCHORS
			* 4152	CABLES
			* 4190	SOUNDING PIPES AND DOUBLINGS UNDER
			* 4202	AIR PIPES

## HULL ITEMS CREDITED SINCE LAST LIST

\*

## MACHINERY ITEMS DUE IN NEXT 6 MONTHS

\*

ML/NO		DUE DATE	* ML/NO	
1584	GENERATOR OIL FUEL TANK	07-82	* 1591	EMERGENCY GENERATOR OIL FUEL TANK

## MACHINERY ITEMS CREDITED SINCE LAST LIST

\*

NOTE: The data shown in this notice is the latest recorded at the date of printing and does not include surveys held but not yet reported.

### NOTICE OF SURVEYS

It is the responsibility of Owners to ensure that all surveys necessary for the maintenance of class are carried out at the proper time under the supervision of the Society's Surveyors. The Society will give timely notice to Owners about forthcoming surveys by means of a letter or a Quarterly Computer print-out. Such notice does not absolve Owners from their responsibility to comply with survey requirements for the maintenance of class. Non-compliance with Classification requirements may jeopardize the validity of certain statutory certificates and ultimately result in withdrawal of class.

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# Lloyd's Register of Shipping

71 Fenchurch Street, London, EC3M 4BS  
Quarterly Notice

( 00945 )

Telephone 01-709 9166

Telex 888379

Cables Committee, London EC3

LR. NO.

SHIP'S NAME

GROSS TONS

DATE OF BUILD

FLAG

6615508

SIR GALAHAD

4473

12-16

UNITED KINGDOM

YOUR ATTENTION IS DRAWN TO ANY OVERDUE SURVEY(S). UNLESS YOU HAVE ALREADY DONE SO OR THE VESSEL HAS RECENTLY BEEN UNDER SURVEY FOR THE INSPECTION(S) IN QUESTION, THE SOCIETY'S LOCAL SURVEYORS IN YOUR AREA OR HEAD OFFICE LONDON OF THE PROPOSED ARRANGEMENTS AS SOON AS POSSIBLE. (SEE NOTES AT FOOT OF PAGE).

## MACHINERY ITEMS TO BE NOTED

ML/ND

### SEA CONNECTIONS

DUE DATE

\*

\*

\*

\*

\*

\*

\*

1794	PORT SIDE SUCTIONS
1791	PORT SIDE DISCHARGES
1803	STBD SIDE SUCTIONS
1810	STBD SIDE DISCHARGES

07-86

07-86

07-83

07-83

NOTE: The data shown in this notice is the latest recorded at the date of printing and does not include surveys held but not yet reported.

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RFA SIR GALAHAD  
CEDEF'S

CEDEF NO.	ITY OF. OPDEF SIGNAL	BRIEF DETAILS OF SYSTEM/EQUIPMENT AND REPEM	OPERATIONAL LIMITATIONS	DATE RECEIVED	RFA 5 SER.NO.	REMARKS
ME1-82	160810ZMAR	Port M/E Fuel System Booster pump motor drive shaft		161715 MAR		
ME3-82		Fuel contamination				Temp repair

act  
shown

GI-8

ORDERS  
PTA - SIR GALDAD

ORDER NO.	DTG OP. ORDER SIGNAL	BRIEF DETAILS OF SYSTEM/EQUIPMENT (ND IEPEN)	OPERATIONAL LIMITATIONS	DATE RECEIVED	REA 5 SER.NO.	REMARKS
ME 8/81	210950Z Oct	Std Pedestal Mooring Cable Yards	<del>2708</del>	Received 270801 OCT		Commercially
OP 2/81	220957/001	Light Jackstay - Ripe failed Annual Test		201551 Nov.		↑ Previous work Dryer manufacturing New item EIC 9/1/81
WE 1-81	141604Z Dec 81	696 UHF		231401 DEC		Portsmouth 87
ME-981	301202Z DEC	Fresh vs Salt Water Ballast Tanks contaminated emergency water		120945 JAN		Husbands

OPDEES  
SEA SIR GALAHAD

OTREP NO.	DTG OF OPREP SIGNAL	BRIEF DETAILS OF SYSTEM/EQUIPMENT AND IEPEN	OPERATIONAL LIMITATIONS	DATE RECTIFIED	RFA 5 SER.NO.	REMARKS
ME 1/81	110915Z Jan	Stbd Main Air Compressor Crank Shaft Sheared.		141510Z Jan		Spare ordered 25 JAN 1981
ME 2/81	170935Z JAN	AMPN/1 No 2 lifeboat davit blutch plate not engaging.		171930Z JAN		
OP 1/81	291130Z Jan	Flying operations at C/O. No control experience				Action taken on board
ME 3-81	010905Z Mar	Main Steering transmitter Main Wheel steering unreliable.		021035 Mar		SS Investigation
ME 4-81	101950Z MAR 81	Main steering system transmitter intermittent fault Main steering unreliable in OP		130700Z MAR 81		
ME 5-81	020730Z May 81	Moorng Cable - Port pedestal		111406 AUG.		Temp Repair commercially by 10/1/82
ME 6-81	311453Z July	Crest Boat - Outboard Motor		170731Z JUL 81		
ME 7-81	281601 SEP.	FRWD 5 TON CRANE WIRE		220831Z OCT 81		SSORS

75A 195914

75B

73A

SF

RESTRICTED

CAT133 22/1124 14201237

FOR CAT

PRIORITY 220827Z MAY 82

FROM RFA SIR GALAHAD  
TO HODUK-NAVY

RESTRICTED

SIC 19F/LMH/HDH

OF CORPORATE

FOR CT975A FROM CHIEF ENGINEER OFFICER

YOUR LMH/HBH 191145Z MAY 82

1. SITREP OPDF ME-3/G2. EFFECTED TEMPORARY REPAIR. SIXTY PER  
CENT OUTPUT. SATISFACTORY

2. FUEL CONTAMINATION. LAST OF CONTAMINATED FUEL CONSUMED 20 MAY.  
SLOW SPEED DEMAND DELAYED CONSUMPTION OF FUEL. NO FURTHER FUEL  
PROBLEMS

BT

DISTRIBUTION 19F

H  
CXM 1 DSC(NAVY OPS) ACTION ( CXU 1 DNOT(DO) )  
SUP 1 ACK (O)  
CMT 3 BATH SUPP GROUP  
CFF 4 CGRM  
CNS 1 CNS  
CXK 2 COSSEC  
CAG 2 CGNPS  
CYG 1 DIC  
CWN 1 DOMS  
CNG 1 DS 5  
CXK 1 DSC(ROW)  
CAT 4 DST(FMV)

DISTRIBUTION LMH

H  
CFQ 2 DG Ships ACTION ( CXU 1 DNOT(DO) )  
CYE 1 BNAP  
CXU 2 DNOT  
CXP 1 DNV  
CAT 4 DST(FMV)  
CYK 1 STP(N)

DISTRIBUTION HBH

H



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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX G2 DATED 23 SEPT 82

RFA SIR GALAHAD STATE AT TIME OF ATTACK

ACTION/DC AND WEAPON STATE

1. The ship was at defence stations and the watertight integrity was bow and stern doors closed, as was No 1 Ramp hatch. No 2 Ramp hatch was fully open to allow the loading of LCU F1 by the 20 ton crane over the top of the WELSH GUARDS front line stores. This was necessitated by the hydraulic failure of LCU F1 ramp which rendered stern door discharge impracticable. All other RED openings into the tank deck were being used on a necessity basis compatible with the passage of men and equipment embarking on the LCU F1. G0582  
G0388
2. Prior to entry into PORT PLEASANT that morning the ship went to action stations and the Captain gave orders that air defence weapons were to be closed up all day. On anchoring the ship went to defence stations, as the ARW threat was considered to be YELLOW, here a misunderstanding of the orders occurred and the Sergeant in charge of the ships air defence weapons took this to mean defence stations for weapons crews also. At the time of the attack the manning of weapons was; Bofors one Naval rating with power on gun, GPMGs one man per gun and one man on the Blowpipe system. All other weapon crew members were stood down awaiting call to a higher readiness state. G0125  
G2892  
G2132  
G2895
3. The bridge was manned by an OOW and a Chinese quartermaster. The LRO(T) had been stood down about 1 hour prior to the attack as he was not feeling well and told to report to the sickbay, his duties had been taken over by the OOW. There was a Marine manning the embark/disembark net. G2744  
G0596

COMMUNICATIONS STATE

4. It had been agreed prior to Sailing SAN CARLOS that HMS EXETER, who was Local Anti Air Warfare Co-ordinator (LAAWC) that she would provide the air picture and radiate any ARWs. A signal was sent by GALAHAD stating frequency she would listen on and also confirmed callsigns. G1781
5. At the time of the attack H/F LAAWC was set up and was manned on a speaker watch on the bridge by the OOW, it was normally the task of the LRO(T) but as stated in Para 3 this rating had been stood down. There is some doubt as to whether the correct frequency was being listened to, or there was some malfunction of equipment. Virtually no traffic had been heard on this NET and at one stage it G1794  
G1787

G2-1

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was so unreadable it was considered that the circuit was being jammed. Advice was sought of an expert from ASWE who was being carried at the time, who did not consider it was jamming. All communication staff were convinced they were listening to the correct frequency. This circuit was also being monitored in the Radio Room.

6. In addition an embark/disembark net was manned by two ratings from HQ and Signals squadron of the 3rd Commando Brigade. It was the ships understanding that this circuit was being controlled from ashore by the Logistic Element of 5 Brigade.

G1801

G1802

#### MACHINERY STATE

7. Main Engines were at immediate notice and in Bridge control, a full watch was being maintained in the Machinery Control Room. Two generators were on the board with a third in a standby mode ready for paralleling. The firemain was pressurised.

G0226

G0227

G0230

#### CARGO AND PERSONNEL

8. LCU F1 was alongside to port having just commenced to load the PRINCE OF WALES Company of the Welsh Guards. The 20 ton crane had made two lifts into the LCU consisting of net loads of BERGEN packs, at the time of the attack the hook was in the tank deck awaiting the next lift. The mortar Coy had moved their weapons and ammunition from the stern trunk and it was consolidated under the square of No 2 ramp hatch on the tank deck.

G0388

A1452

9. Detailed position of personnel and stores/ammunition can be seen from the plan, see Annex G6.

#### DISCUSSION

10. The Board considers that at the time of the attack the SIR GALAHAD was in a state of readiness consistent with the air raid warning state at the time, however it is the boards opinion that either the wrong frequency was set up for LAAWC H/F or there was equipment malfunction. This is substantiated by the fact that SIR TRISTRAM was receiving EXETER loud and clear and had been listening to the build up of the air picture and had actually heard an ARW red called. It is unfortunate that the misunderstanding about the manning of the Air Defence weapons occurred, as alert guns crews may have spotted the attacking aircraft visually, although the board consider this most unlikely due to the direction and mode of attack.

G2642

#### CONCLUSION

11. It is concluded that a greater liaison between the communication departments of SIR GALAHAD and SIR TRISTRAM on arrival at FITZROY would have resulted in both ships listening to the correct frequency,

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it might also have resolved the mistaken impression SIR TRISTRAM had that she would be given a specific ARW for the FITZROY area, addressed by her own personal callsign, which led the OOW to disregard the ARW Red heard shortly before the attack.

12. In all other respects SIR GALAHAD was at the correct state of readiness.

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX G3 DATED 23 SEPT 82

ATTACK BY ARGENTINE AIRCRAFT  
ON RFA SIR GALAHAD AT FITZROY

ATTACK NARRATIVE

1. At approximately 1710 on the 8 Jun 1982 RFA SIR GALAHAD was anchored in PORT PLEASANT SOUND 4 cables south east of the entrance to FITZROY CREEK and 3 cables east of SIR TRISTRAM. The day was fine and clear with an estimated  $\frac{1}{2}$  cloud cover. G0487  
G0735
2. At this time the ship was attacked by four Argentine Skyhawks in a rough line astern formation, from evidence gathered the third aircraft released bombs three of which struck the ships side on the starboard quarter and penetrated the hull. The fourth aircraft was not seen to release any weapons but carried out a strafing run, one burst struck the bulkhead in the way of the Engineers Office. A1709  
G2966
3. On the Bridge the OOW saw an aircraft approaching from stbd at very low level and immediately piped action stations. Two aircraft passed over the ship and [the Captain] arrived on the bridge, at this moment the ship shuddered and thumps were felt, almost immediately the Bridge started to fill with black smoke. G0598  
G0608
4. [REDACTED] when he heard an aircraft/broadcast pipe and made his way out of the Office, the next thing this officer remembers is coming to on the Upper Poop deck outside with injuries to the right arm, subsequently a piece of metal was removed from the wound. G0231  
G0233
5. [REDACTED] was standing by the forward end of No 2 Ramp hatch when he observed an aircraft coming from the starboard side, he saw weapons detach and one bomb appeared to go down into the tank deck, this was not to prove correct. He immediately made his way to the upper poop deck port side and opened the door adjacent to the Chief Officer's office. The inner door was smashed and black smoke poured out. G0388  
G0405
6. All personnel who were in the Officers port alleyway remark on hearing either the sound of aircraft passing close overhead followed by thumps and a shuddering of the ship. All state that thick black acrid smoke engulfed this accommodation almost immediately; elapsed time from attack to smoke appearing varied from between instantaneously to two minutes. G1426  
G3098  
G0518
7. In the galley preparation for the evening meal was in progress, and a great number of catering staff were present; most personnel in a line with the galley extension suffered severe flash burns. G1719

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G3-1

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
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8. [REDACTED] was in the duty mess; on hearing action stations made his way to his cabin. He was just short of his door on the starboard side of the Officers accommodation, approaching from aft when something passed in front of him causing him to be thrown back down the alleyway. He suffered flash burns to his face. That something happened in this area is substantiated by [REDACTED] who was in his cabin at the time of the attack and had been alerted by the sound of an aircraft passing overhead. He felt blast and was thrown across his cabin, there was a hole in his bathroom bulkhead through which he could see flames in the Juniors cabin. Smoke started to fill his cabin and the alleyway 2-3 minutes after the attack.
9. [REDACTED] on hearing the pipe for action stations made his way to his station. On reaching the foot of the accommodation ladder outside the military office was just about to enter the troops recreation space when a projectile passed approximately six feet in front of him. The path of this projectile was from the ships side inboard through the engine casing; almost simultaneously there was an explosion followed by a blinding flash, seconds later the whole area was engulfed in thick black smoke.
10. [REDACTED] was in the crew's bathroom stbd side at the upper deck level. He heard two aircraft overfly, the ship then shuddered and there was a thud, no explosion was heard. He attempted to go forward but was prevented by a switch panel arcing. On moving aft he noticed entry points on the ship's side where weapons had penetrated then passed through an Engine Room rating's cabin across the alleyway through the ratings toilet and into the tank deck. Through the entry points into the tank deck fire could be seen, thick black smoke was coming up the alleyway from aft.
11. [REDACTED] was in A5 dormitory when action stations was sounded. He collected his gear and was at the door when the starboard after door to the tank deck was blown off and flames shot out. At this time the lights went out.
12. On the tank deck the PRINCE OF WALES COY of the Welsh Guards were preparing to file out to embark in LCU F1, 9 PLATOON 3RD COY were loading nets with BERGENS and assisting the MORTAR PLATOON to move weapons and ammunition from the stern trunk under the square of the hatch. [REDACTED] Welsh Guards was under the square of the hatch on the tank deck when his attention was drawn upwards, where through the open hatch he noticed a cylindrical object spinning through the air passing over the hatch. He immediately gave the order "Take Cover" and dived to the forward side of a pile of BERGENS followed by [REDACTED]. Immediately there was an explosion in the vicinity of the stern trunk and a very hot blast passed over the tops of their heads, none of these personnel were injured.

G1052

G1068

G1151

G1161

G1172

G0850

G0854

G0856

G0862

G2644

G2652

G2657

G2661

G2751

A1453

A1494

A1513

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G3-2

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13. [redacted] was on the tank deck, heard the order "Take Cover" and did so on the forward side of a Landrover. He heard a 'loud thud rather than a bang and then a sort of increasing burning sound and it seemed as if the temperature had gone up 50 degrees'. He then looked up and immediately suffered flash burns to face and hands. The tank deck rapidly filled with black choking smoke.
14. All witnesses state the ships main lighting failed at the time of the weapons striking, but almost immediately the emergency lighting came on. This in the main was ineffective as it was rapidly obscured by the denseness of the smoke. G1463  
G1934  
G1465
15. On the bridge approximately 5 minutes after the attack Captain ROBERTS assessed the situation. Thick black smoke was billowing out of the after accommodation and engine room exhausts, fire could be seen in more than one place aft. Although only slight smoke was coming out of No 2 hold, the fire on the Tank Deck was firmly established and gaining in intensity; small arms ammunition was beginning to explode on the tank deck. There was no reply from the Engine Room. It was his assessment that fires were burning out of control, mains power had failed and possibly the Engine Room had suffered a hit. At approximately 1720 he ordered "Abandon Ship". G0174  
G0168
16. [redacted] on hearing "Abandon Ship" made his way to his station, the port forward liferafts. On passing the troops cafeteria, he heard someone inside shouting for help. He entered the cafeteria which was full of thick smoke and encountered wreckage. He only managed to get a short distance into this compartment before he was forced by the smoke to withdraw. He searched for a breathing apparatus in vain, the person inside was still calling for help, and with complete disregard for his own personal safety re-entered the cafeteria, found a soldier who was injured and badly burnt and carried him to safety. G0530  
G0536
17. [redacted] after sighting the initial flash from the tank deck, took charge of soldiers who were appearing from the tank deck, led them forward and up to the shade deck. [redacted] then on his own initiative went below, entered the tank deck by the forward starboard door. He directed confused soldiers to safety and then made his way to the after end of the tank deck and led some more soldiers out of the starboard aft access. The state of the tank deck at this time was a small fire port side midships possibly caused by small arms and Bergens. There was an intense fierce fire in the stern trunk and the space was filling with smoke. It is estimated that between 8-10 minutes had elapsed. Having led the soldiers from the after end of the tank deck to safety he assisted in getting liferafts over the side. [redacted] then went again to the tank deck following the same route as before. The smoke by this time was very dense, he ran the length of the compartment, found more injured soldiers and evacuated them through the after starboard door. The fire in the stern trunk by this time had grown in intensity and the heat was unbearable. This was approximately 15 minutes after the attack. G2761  
G2764  
G2770  
G2768  
G2774  
G2782  
G2795  
G2783

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G3-3

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18. [redacted] had been standing by No 2 ramp hatch at the time of the attack. He took cover until all aircraft had passed and made his way aft where he found [redacted] outside the port entrance to the cafeteria lobby. This rating had a head injury thought to have been caused by striking the door frame as the blast threw him out on deck. [redacted] took the injured [redacted] and left him in the vicinity of No 4 lifeboat which was being prepared for launching. He then assisted in launching the liferafts that were on the flight deck, at this time ammunition for the GPMGs on the monkey island was cooking off and exploding. He went back down to the upper poop deck, where a Chinese rating told him that there were people in the stern trunk banging on the door which leads into the access by the Bonded store. [redacted] and the Chinese rating went via the poop deck down two decks through smoke and darkness and reached the door into the stern trunk. They succeeded in knocking off the clips and led 3 or 4 soldiers to safety.

G3258  
G3271

G3300

G3302

G3306

19. By this time the abandonment of GALAHAD was well underway, 16th Field Ambulance medics were treating the injured and [redacted] was organising that injured personnel were winched into helicopters and the uninjured to climb down into the liferafts and SIR TRISTRAM's lifeboat which had arrived. The LCU F1 which was alongside to port had already loaded a great many of the burns casualties and other personnel made their way ashore picking up liferafts on the way. No 4 lifeboat was launched, this was the only one accessible due to smoke and flames from the funnel area.

20. At approximately 1750 all known live survivors had been evacuated from SIR GALAHAD and Captain ROBERTS left his ship for the final time.

G0254

KNOWN WEAPON DAMAGE

21. There are 3 weapon entry points on the starboard aft side approximately 460 mm in diameter. These holes are consistent with the passage of a standard 500 lb bomb through a ship's side plating.

See photos  
page G3-8

22. Weapon (1) entered the ship's side between frames 13/14 on the upper deck level approximately 6'6" above that deck, passed through an ER rating's cabin, across the passageway through both bulkheads of the ER ratings lavatory and into stern trunk.

G2657

23. Weapon (2) entered ship's side between frames 15/16 on the upper deck level approximately 5' above that deck and followed same route as weapon (1) in para 22. Both weapon (1) and (2) were on a descending trajectory and dropped 2'6" to 3' from entry point at ship's side to the point of passage through the bulkhead into the stern trunk.

G2657  
G2660

24. Weapon (3) entered the ship's side at frame 20 in the way of the military office almost at deck level. It was deflected forward through the bulkhead of the troops recreation space, across the after inboard corner and penetrated the engine casing.

See photo  
page G3-8  
G0852

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G3-4

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25. The screen bulkhead of the Engineers Office/Second Engineers cabin is pierced by a line of holes consistent in size with 30 mm cannon. See photo page G3-11
26. One exit hole in port side at approximately frame 28. Hole was of irregular shape roughly 18" x 2' with jagged edges protruding out from ship's side. There is some confusion as to the exact height of the hole but it must be assumed that the GALAHADS officers who observed it would have a better knowledge of the ship. From this premise it was concluded to be at Upper Deck level exiting through a Steward's cabin. G1868  
G1967  
G3327

OTHER KNOWN DAMAGE

27. Junior Engineer cabin 150 upper poop deck. Flash/structural damage/Fire. G1073  
G1161
28. Engineers Office area upper poop deck. Structural damage/metal fragments. G1206  
G1192  
G3236  
This damage consistent with cannon associated effects.
29. Poop deck in way of Warrant Officers lavatory port side. Structural damage/Blast/Injuries. G2138  
G3350
30. Troops cafeteria. Flash/Structural damage/casualties/Fire. G0530  
G0781
31. Upper deck forward door to Steward's alleyway damaged and impassable. Fire visible beyond door. G0785
32. Military Officers accommodation, blast internally causing Wardroom door and starboard after door to open violently. One casualty and later fire. G1587  
A1193  
G2808
33. Galley area, due to numerous flash burns that were suffered by Chinese and other personnel in this vicinity, and possible fatality of [redacted] on stairway leading to Purser's office cross alleyway, severe flash occurred in this area. G3180  
G1469  
G1010

SMOKE

34. As testified [redacted] Head of the Fire Research Station, BOREHAM WOOD from detailed study of video tape of incident, there appear to be three distinct and separate types of smoke: See Appendix I
- a. Thick black smoke consistent with burning Diesel fuel issuing from Engine Room exhaust and Funnel area.
  - b. Dark greyish smoke from after end of poop consistent with burning material normally expected within accommodation.
  - c. Lightish grey smoke issuing from No 2 ramp hatch consistent with burning ammunition and stores in the tank deck.

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ACT 2000. EXEMPTION 340(2), 538.

G3-5

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~~CONFIDENTIAL~~FACTORS TO BE CONSIDERED

35. Identified weapon entry points are 3 x 500 lb bombs. Cannon penetration of bulkhead in way of Engineers Office.
36. Expert testimony has concluded that none of the bombs detonated as damage and casualties sustained were not of sufficient magnitude. See Appendix I
37. SIR GALAHAD herself had been struck prior to this attack by an UXB as had another ship of the same class. No two UXBs behaved in the same way. The path they traced through compartments within the ships was completely unpredictable. In neither ship had UXBs caused a resulting fire. G0205
38. There was instant black smoke which spread rapidly throughout the accommodation and an intense fire within the funnel. Expert opinion is that diesel fuel was the most likely source of the above phenomena. The only quantity of diesel fuel high up in the ship is the 500 gallon header tank for the generators in the port side of the Engine room between frames 25/27 at poop deck level, directly adjacent to the galley extension. See Appendix I  
G0244
39. An instant fireball/intense fire front sweeping down the stern trunk forward into the tank deck. A1513
40. No medical evidence of personnel suffering from ear or lung damage consistent with blast associated with detonation, this supports para 36.
41. Nothing within the stores on the tank deck at the time was likely to have caused the intense Fire front, either by sympathetic detonation or ignition in the timescale involved. A1437
42. Numerous small fires and areas of damage were caused throughout the ship with no apparent weapon penetration.

DISCUSSION

43. It is almost certain that there were two major sources of fire and smoke production.
44. The thick black smoke and intense fire in the funnel was probably caused by weapon (3) in its passage through the ship, rupturing the 500 gallon diesel header tank and spraying its contents in all directions within the engine room. The dispersed fuel was immediately ignited either by heat generated by the kinetic energy of the bomb or by some other igniter in the vicinity, eg generator or boiler uptakes. The finely dispersed ignited diesel fuel would produce a flash and a fire front as the gases expanded and attempted to escape to atmosphere. If it is assumed that weapon (3) did breach this tank, its path would have had to take it through the bulkheads of the galley extension, thus creating a ready made exit for the para 33

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ignited gases to vent through creating a flash and fire front both forward and aft along the galley extension. This would explain the high number of flash burns to personnel in the galley area and indeed the troops cafeteria.

see plan  
Annex G6

45. The other major fire and area of casualties was the tank deck. Supported by expert testimony it is the Board's opinion that either or both bomb (1) and (2) during their passage through the ship and into the stern trunk had their casings pierced and a condition known as deflagration occurred.

Appendix II

46. Deflagration is entirely different to detonation in that it is the rapid burning of the explosive, that leads to the evolution of gas at much lower overpressures than those caused by detonation. The typical effects of deflagration are the rapid production of gas, some of which is incompletely burnt. This means that the gases expand in all directions carrying forward a flame front or fireball and hot unburnt gases away from the epicentre. Where unburnt gases meet a plentiful oxygen supply, reignition occurs forming fireballs along the routes of the escaping gas. The movement of the gas with an associated movement of air in front of it, plus the movement caused by convection around the fireball creates an apparent wave of hot air to travel through the ship. After the initial propagation of the fireball, the main source of heat is exhausted leaving isolated fires. The temperature of the air space then drops, with a consequential decrease in volume of air/gas contained, therefore large volumes of air are drawn into the ship. As fires gain a hold, air is drawn into the ship to feed oxygen to the fire. This forced movement of large volumes of air would be a major contributor to the fast appearance of smoke throughout the ship.

Appendix II

47. The production of a wave of hot air in deflagration rather than the blast effect of detonation explains the large number of witnesses who described a shock wave passing them but who suffered no ear/lung damage or indeed the lack of material destruction on a large scale. It would further explain isolated fires started in other areas of the ship. The intense flame front would almost certainly have ignited stores stowed on the tank deck and thus the cooking off of the various ammunition that occurred later.

para 40

48. It is considered that the damage that was reported in the area of the Engineers office is commensurate with HE cannon damage and could explain the one injured and two fatalities in this vicinity.

para 28  
Appendix II

49. The damage reported in the Troops cafeteria and W0 toilet is commensurate with smaller weapons ie cannon although no weapon entry points can be identified to substantiate this.

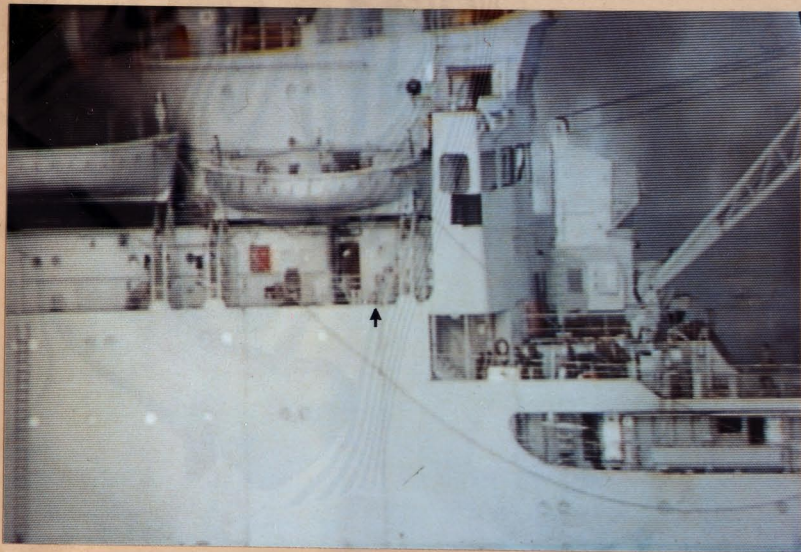
para 29, 30

50. The board can offer no reasonable explanation as to what caused the damage to the Junior Engineers cabin 150 on the upper poop deck, unless it was a by-product of the deflagration of the bomb.

para 27  
Appendix II

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Cannon Damage of Bulkhead in way  
of Engineers Office. (ARC of penetration  
holes indicated by arrow.)

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G3-8

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51. Captain ROBERTS was faced with making an immediate decision as to whether it was possible to get the fires under control, prevent the detonation of loose ammunitions on the tank deck and to save as many of the embarked troops as possible. Knowing what he did (para 15), and the importance of the troops to the continuation of the offensive against PORT STANLEY, he had little choice other than to try and save as many lives as possible and keep injuries to a minimum. The Board believes that he behaved in a decisive and correct manner to order Abandon Ship when he did.

#### CONCLUSIONS

52. It is concluded that:

- a. RFA SIR GALAHAD was hit by 3 x 500 lb HE bombs starboard side aft; none of these bombs exploded (paras 35 and 36).
- b. The ship was also struck by a short burst of 30 mm cannon fire in the vicinity of the Engineers Office and possibly the Troops Cafeteria (paras 48 and 49).
- c. Three types of fire quickly established themselves in the ship:
  - (1) a fierce diesel fuel fire in the funnel, funnel uptakes and upper part of the Engine room (paras 38,44).
  - (2) a fireball followed by fire and cordite explosion in the Stern Trunk of the Tank Deck (paras 39 and 45).
  - (3) miscellaneous small fires started as a result of the effects of (1) and (2) above (para 42).
- d. Deflagration, rather than detonation, of one or more weapons caused the immediate effects of burns and thick smoke (paras 45,46).
- e. The path of an unexploded bomb passing through a ship cannot be accurately assessed after the point when its passage has been positively identified by a witness. Therefore it is not possible to state categorically which weapon was actually responsible for specific damage (para 37).
- f. Deflagration was the cause of the damage, fire, burns and injuries on the Tank Deck, and in its immediate vicinity (para 45).
- g. The most likely cause of the diesel fuel fire in the funnel was the rupture of the 500 gallon diesel header tank in the port engine uptake at poop deck level; this rupture was probably caused by the passage of weapon (3) in its path through the ship (para 44).

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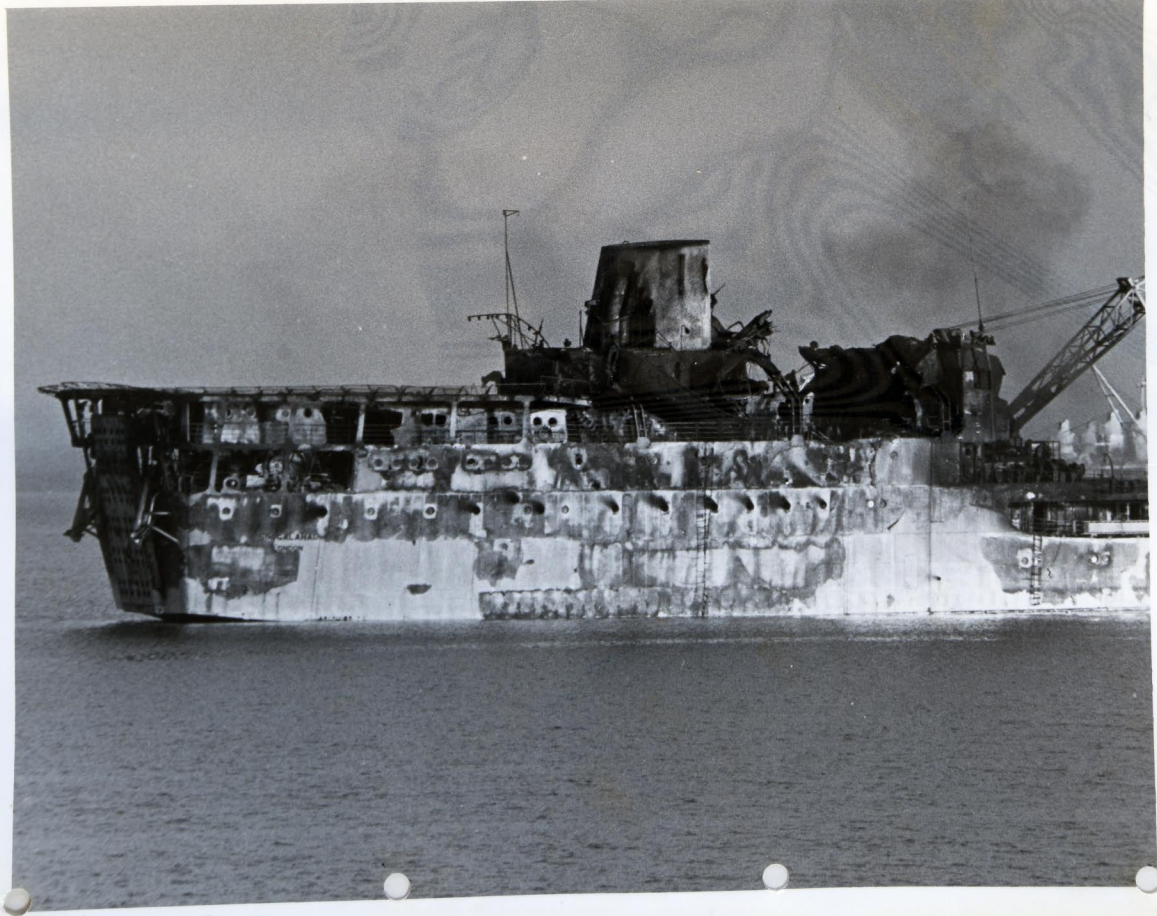
h. After very considerable deliberation the Board cannot come to firm conclusions as to what caused each individual area of damage described in testimony given by witnesses (paras 49,50).

j. The Captain of SIR GALAHAD assessed the situation rapidly and correctly (para 51).

k. With power gone, an incredibly rapid spread of smoke, and very limited access to BA no major firefighting effort could be achieved and the order to abandon ship was correct in the circumstances (para 51).

(Note: Recommendations concerning material matters are at Annex G4).

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APPENDICES TO G3

- APPENDIX I    A    COMMENTS BY FIRE RESEARCH STATION  
                  B    SIR GALAHAD FIRE: VIDEOTAPE ANALYSIS
- APPENDIX II    A    DR T HICKS ADMIRALTY MARINE TECHNOLOGY ESTABLISHMENT  
                          TRANSCRIPT OF EVIDENCE  
                  B    MR F J PEARCE DG SHIPS STATEMENT DATED 26 AUG 82

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COMMENTS BY FIRE RESEARCH STATION ON INFORMATION PROVIDED  
IN MOD LETTER BOI/SIR GALAHAD/002, DATED 4 AUGUST 1982,  
ON ENEMY DAMAGE TO RFA SIR GALAHAD

1. The information available is insufficient for any really positive statements to be made on the fires caused or on their possible effects. However, it seems probable that the most damaging hit was No 4 and that this ignited the diesel fuel in the 500 gallon tank.
2. From descriptions given the 'thick black smoke' is most likely to have come from this fuel and it is unlikely that plastics material, polyurethane or PVC, would have been involved to any great extent, at least in the early stages of the fires reported.
3. If solid rocket motors had been involved, it is to be expected that troops on board would have commented on the characteristic 'cordite' smell. Equally, the significant involvement of stores containing phosphorus compounds would have been obvious.
4. With more detailed information, a much better indication of the likely causes, courses and effects of the various fires could be given.

Specifically, information on the following would be useful:

- (a) Order of strike and the relative severity of effect of the various projectiles with some indication of time scales involved. There is some ambiguity in the information given as to which actually exploded and which did not; this should be resolved.
  - (b) Details of casualties - nature of injuries and precise causes of deaths of fatalities and locations in which casualties were found.
  - (c) Approximate quantities of potentially combustible materials - especially plastics - in various locations. (Samples of materials are of relatively little use without some indication of amounts likely to have been involved.)
  - (d) Probable levels of oxygen available to fires, either from projectile holes (approximate sizes would be useful) or natural or forced ventilation.
  - (e) Position and nature of fire resisting bulkheads and confirmation that decks were fire resisting - as would be expected in a ship built to Department of Trade (Marine Division) regulations.
5. It is accepted that much of the above information might be difficult, if not impossible, to obtain but almost anything additional would be useful. Also, it would be of great assistance to see any

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video or film records which may have been taken during the actual loss of the ship and to have any information which may be available on any fires which have occurred at any time in similar ships. The opportunity to inspect a sister ship would also be useful.

G R NICE  
Head, Fire Research Station

August 1982

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The following information was extracted from a videotape record of a BBC TV broadcast on 4 August 1982. The time scale of the events described is not known and, although the sequence of events follows the sequence shown in the broadcast, it is not known if the scenes were shown in the order that they were recorded.

1. The first scenes of the burning ship occur whilst large numbers of men are still aboard. A large plume of thick, black, billowing smoke is emerging from the funnel and the area immediately adjacent to the funnel on the starboard side. Another plume of thin diffuse smoke is rising from the area of the deck immediately in front of the bridge. See Fig 1.

2. In the second scene a helicopter arrives off the stern to pick up survivors in the water, its arrival is followed immediately by the emergence of a plume of smoke from the large apertures in the stern (poop deck?). Within a few seconds orange flames 3 to 5 m high are visible on the starboard side of the funnel behind the starboard lifeboats. See Fig 2.

3. By the third scene there are no survivors to be seen moving about on the ship. The entire rear section of the ship behind the bridge is masked by a thick plume of smoke, some flames are visible through the forward facing windows below the bridge on the starboard side.

The plume of smoke from the deck in front of the bridge suddenly increases in size and a plume of white spray is followed by the growth of a fireball 10 - 20 m diameter. See Fig 3.

The fireball quickly subsides and returns to a thick smoke plume with some flames 1 - 2 m high near the deck.

4. The fourth scene occurs as a backdrop to the beaching of a lifeboat from the Sir Tristram. Black smoke obscures the rear half of the ship and fierce flaming is visible near the starboard lifeboats alongside the funnel. Flames appear in the smoke plume 15 - 20 m above the deck in the vicinity of the funnel. Small flames are visible on the deck in front of the bridge. See Fig 4.

5 The last scene shows the rear half of the ship obscured by black smoke with a large area of flame coming from the rear (helicopter landing?) deck. The absence of any rescue craft near the ship suggest that all of the survivors had been removed by this time. See Fig 5.

Although the fireball from the deck in front of the bridge is difficult to account for, the primary source of smoke, and eventually flames, appeared to be the area alongside the funnel on the starboard side.

It would appear that the only source of flammable material nearby which would account for the rapidity and quantity of smoke production was the 500 gallon diesel gravity feed tank.

The appearance of smoke from the poop deck may have been influenced by the draft from the helicopter hovering near the stern and the movements of smoke below decks may have been accelerated as a result.

These are highly speculative conclusions based on minimal evidence. More detailed and more reliable conclusions might be obtained by examining:

- a. Further video, film, photographic material
- b. Eyewitness accounts of survivors
- c. Examination of the partly damaged Sir Tristram or (less satisfactory) an undamaged sister ship.

S A AMES

Fire Research Station  
August 1982  
File FRO/134/03

Viewing of uncut tape  
indicates mixtures of black  
brown and white smoke at  
various times. In all probability  
three fuels\* involved

\* Diesel fuel, smoke grenades  
and cordite

93:16

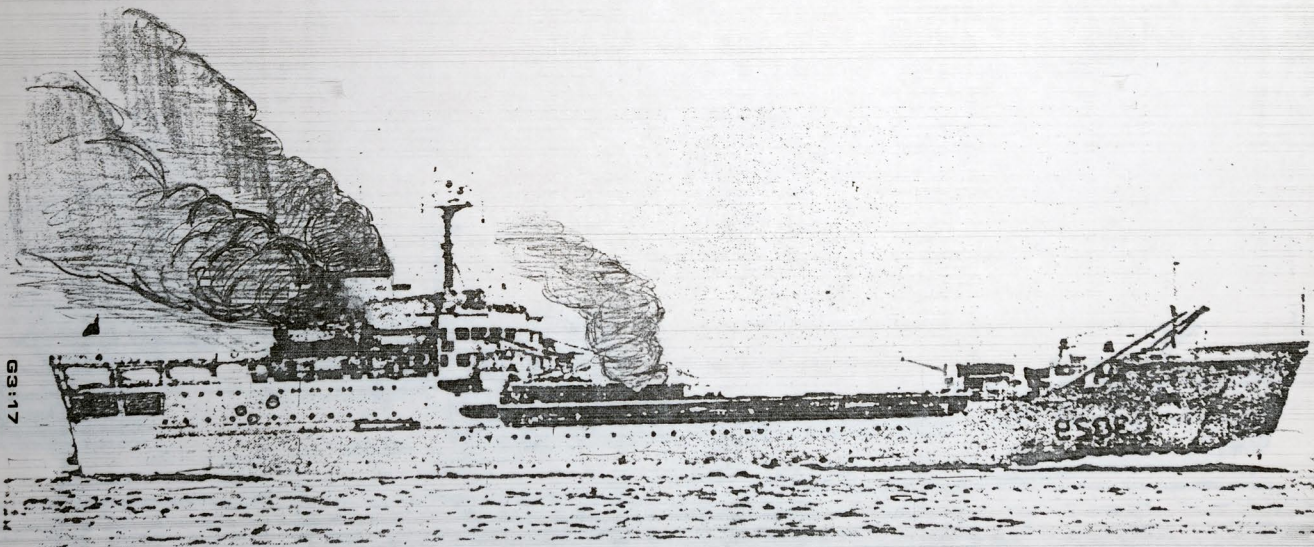
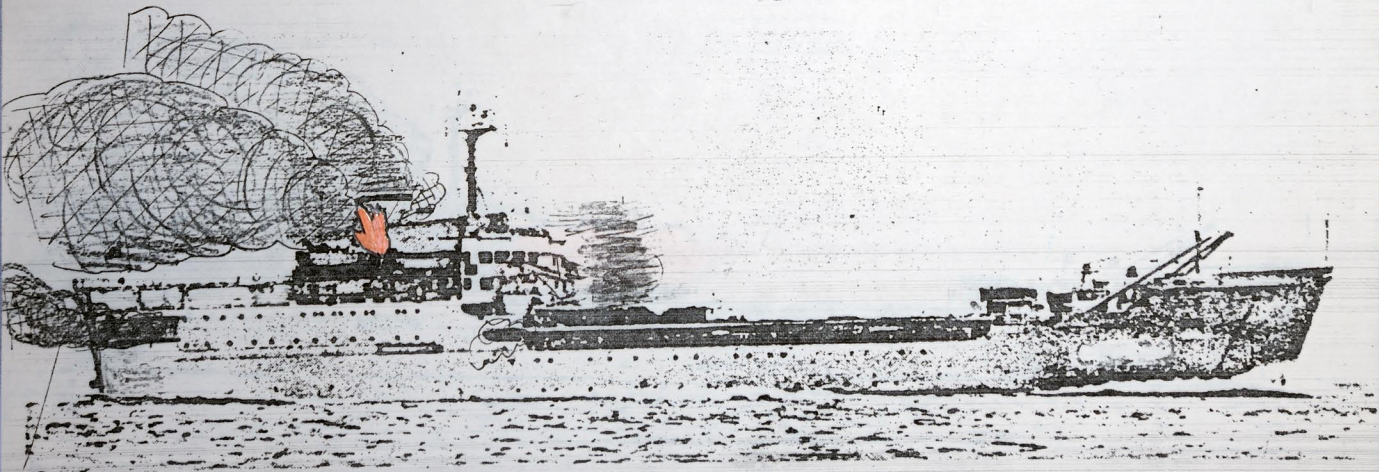
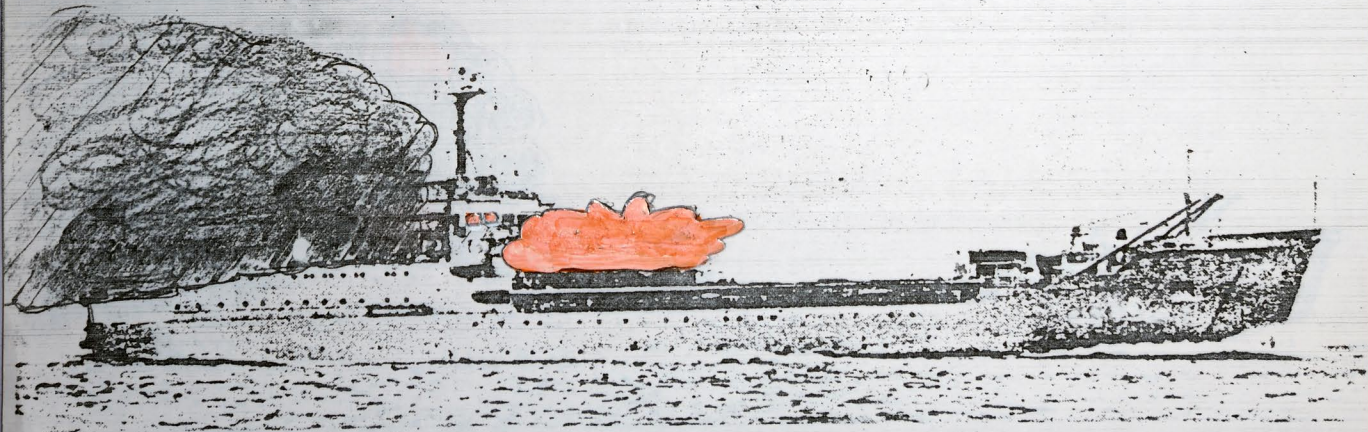


Fig 1

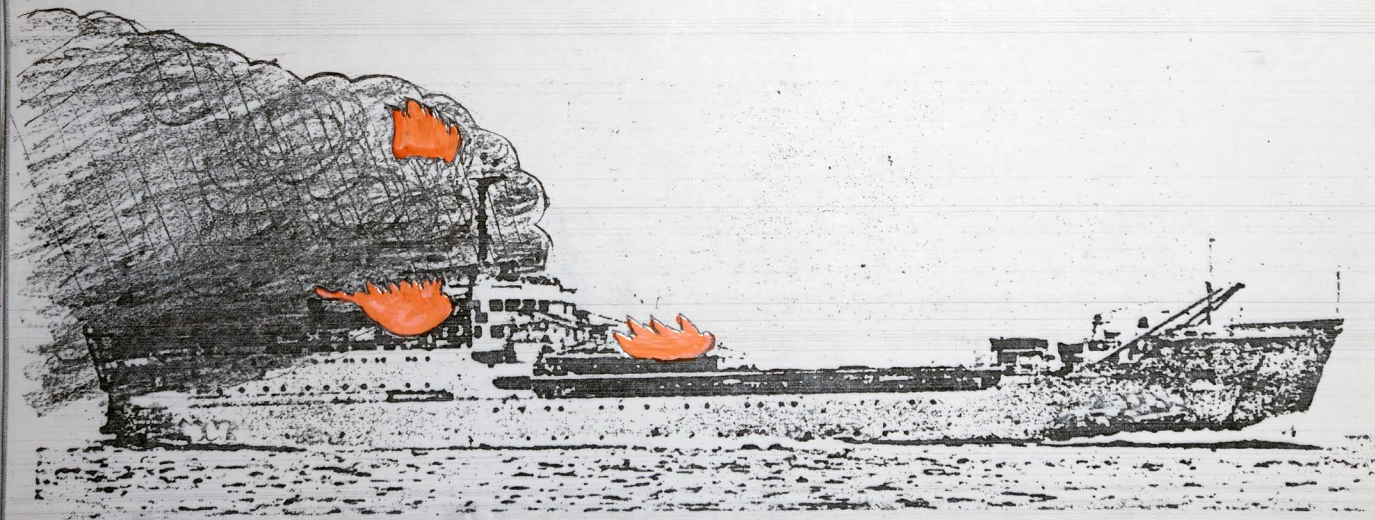


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Fig 2

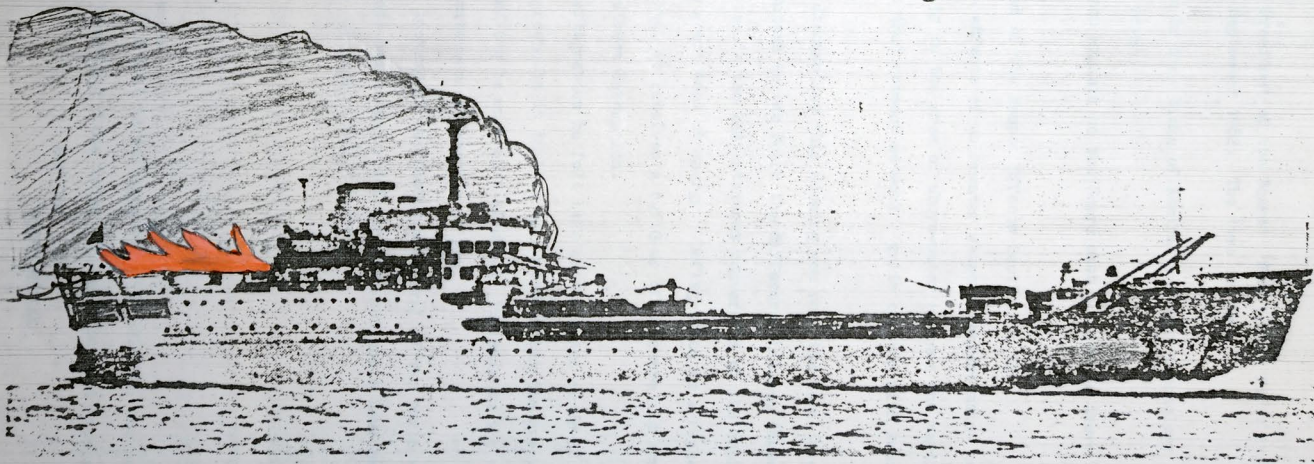


03:19  
Fig 3



03:20

Fig 4



03:21

Fig 5

Note by the President of the Board: This is the first transcript for today  
Wednesday 1 September 1982. The time is 1248.

Q. Are you Dr Tony Hicks of Admiralty Marine Technology Establishment Dunfermline?

A. That's right.

Q. Could you explain to the Board what job you do there and your field of expertise?

A. I'm head of the Weapon Effects Section in the Division. We work primarily on effects of underwater weapons against ships but we also have considerable responsibility in the area of above-water weapons and particularly internal blast effects. In that respect we work quite closely with American establishments

Q. In our discussions this morning you used the term detonation and deflagration, would you explain to the Board the difference between these two phenomenon?

A. Detonation is the instantaneous conversion of the explosive to high pressure gases with a great deal of energy. Deflagration is a rather slower process, although still very fast, it involves a build-up of pressure and burning of the explosive rather than direct detonation.

Q. Would deflagration be felt like an explosion or would it be felt differently?

A. In many respects it is like an explosion but the pressure wave is nowhere near as intense and can be much more diverse. It leads to the evolution of gas rather than an instantaneous generation of gas.

Q. We were looking at the possible arrival of two bombs on the tank deck level. If one of those had actually deflagrated what would have been the effect in that compartment? aboard SIR GALAHAD

were

A. I think / a bomb to deflagrate on SIR GALAHAD, the compartment concerned would suffer something close to an explosion but not necessarily with severe

structural damage associated with it. Vast amounts of gas would be evolved very very quickly. It is quite likely that the gas would be incompletely burnt so that much of it could burn later in contact with air. The gas would then spread rapidly through the surrounding area of the ship, try to vent to the atmosphere and as it went could burn as it met fresh air, which means it could generate flame fronts passing through the surrounding areas of the ship.

Q. Having described the effects on people and equipment to you on the tank deck, do you believe that that is synonymous with detonation or deflagration in the way you have described?

A. I think its much much more likely to be associated with deflagration than with a detonation.

Q. It is also possible in your view that the thicknesses of steel that the bombs had could have damaged to such an extent that deflagration to have occurred???

A. I think that would <sup>be</sup> very difficult to say. Almost certainly in that area there would be areas of metal which would be sufficient to be able to pierce the skin of a bomb. I think that's a statistical probability really.

Q. If there were other forms of ammunition, and I'm talking about mortars in plastic containers, mortar bombs in plastic containers, personal ammunition of rifle type, in fact light scale weapons, stacked in a heap as we've shown you. What is the likely effect of that be upon deflagration of a weapon? Very close to that say within feet or even right by it?

A. Very close to, they could get hurled around a reasonable distance but a little bit further away its merely a question of the gas rushing by. They could eventually cook-off in the burning resulting but the fragmentation problem shouldn't exist in the same way that it would detonation. They'd be much <sup>less</sup> likely to detonate sympathetically.

Q. If much of this ammunition was stored on wooden pallet containers, would they be likely to catch fire very quickly?

A. I would think that's quite likely but its really not an area I would be too familiar with. There should be quite intense heat in the flame front.

Moving now to the weapon which we've described<sup>which</sup> probably went through the engine casing slightly higher than those other two. And its path could have possibly taken it into the vicinity of the diesel tank. If bomb travelling on that path was to strike that tank could you give us some estimate as to what might happen?

A. If the tank were only partially full, the fluid might get thrown around a certain amount. In tearing the tank its quite possible there would be sufficient heat<sup>and</sup> associated with the the bomb as well to actually perhaps ignite the fluid. If the tank were fairly, almost totally, full as the bomb went through it might burst at the seams and squirt out fairly violently in all directions. Again in fairly solid liquid form but capable of ready ignition.

Q. So therefore it might be ignited either by the energy of the bomb going through or by other hot igniters in the vicinity?

A. Yes indeed and if a bomb had deflagrated anywhere that flame front could readily ignite the fuel as well.

Q. The fuel when it does though, would that have similar symptoms to<sup>a</sup> deflagration bomb?

A. Depending on how finely dispersed it was, it could have characteristics rather similar to deflagration, probably on a slightly slower basis - releasing its gas rather more slowly than flame front.

Q. By being confined in an engine casing it would tend to strengthen that possibility rather than weaken it?

A. I doubt that would have a great deal of effect.

Q. We have discussed with you, Dr Hicks, about the damage in the Second Engineer's office area and also we believe that the screen, the external screen, to this compartment is pierced by cannon shell. Would you imagine that the damage caused within there that we have described is commensurate with cannon?

A. Yes it seems to be much more characteristic I would expect for small charges going off than any substantial amount of explosives.

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Q. And to go to the deck underneath, the troops cafeteria, here again we have described the damage. Could you attribute this to any forms of weapon?

A. Well again it sounded, the considerable amount of blast damage, sounded more like small weapons perhaps than something large, although as I think we discussed, its possible the blast did come along from ..... if the weapon deflagrated further aft it could have spread the blast into that area. The actual damage to the tables sounded like local weapons going .... small weapons going off.

Q. There is one other area of damage in the Junior Engineer's Office cabin, which we described to you. Can you offer us any explanation as to what might have caused that?

A. It seems a little bit inexplicable, other than perhaps if there were a hole for venting the deflagration flame front into that area, it could cause that type of damage. But otherwise it seems not clear.

For complete  
transcript (see F3-3A)

Further to my visit to the board of enquiry, on Wednesday, 1 September, I offer the following opinions:

Sir Galahad:

From the verbal descriptions of the damage given at the meeting I feel it is most unlikely that any of the three bombs detonated normally. Full detonation of 250 lb HE would be expected to produce fairly complete destruction of structure over a length of 50-80 feet. Such destruction did not apparently occur. The conditions and damage described do however seem fully compatible with deflagration of one or more of the bombs. Such deflagration would spread fire and smoke almost instantaneously through quite large regions of the ship, and would probably do so more effectively than complete detonation could.

Extract from letter  
dated 6 Sep 82 (see F3-3B)

G3-25

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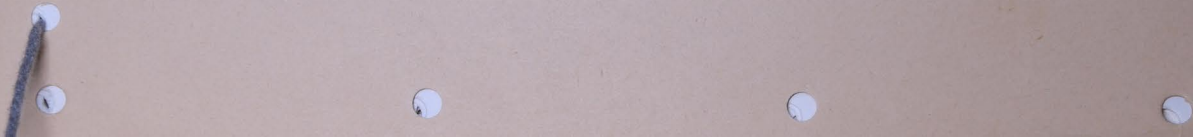
F. J. PEARCE. P.P.T.O (C)

Enclosure B  
To APPENDIX 2  
ANNEX G: 3

S.G. SHIPS. SECTION P.S. 231.

Based on the information supplied to me by  
the Board of Inquiry, it is my opinion that  
the no 500 lb bomb' distributed within the  
ship (R.F.A. Str. GALAHAD). This opinion is based  
on information given by S.G. SAWS S124 in the  
form of 'anticipated envelopes of destruction' for  
this type of bomb.

*[Signature]*  
26<sup>th</sup> August 1982.



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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
 ANNEX G4 DATED 23 SEPT 82

PROBLEMS ARISING FROM EQUIPMENT  
 AND DESIGN OF LANDING SHIPS LOGISTIC (LSL)

EQUIPMENT

1. Furniture. Concern was expressed at the number of inflammable items in cabins and within the accommodation in general, eg. carpets, settees, armchairs and soft furnishings. Samples of all the mentioned items including mattresses were sent to the Fire Research Station BOREHAM WOOD, these samples were obtained from a ship of the same class. Their findings are in Appendix I to this Annex. G1186
2. Disposition of Breathing Apparatus (BA). The positioning of BA within the accommodation was an important factor in the actions of ships staff within SIR GALAHAD subsequent to the attack. Due to the rapid distribution of smoke rendering BA inaccessible, search/rescue and firefighting effort was not possible. G0709  
G0242  
G1133
3. Provision of Emergency Life Support Apparatus (ELSA). It was represented to the Board that the provision of ELSA in the MCR would have enabled the Second Engineer HENRY and Third Engineer HAILWOOD to make their escape from the Engine Room. G1133  
G1336
4. Liferaft Stowage. The present system of the 40 man valise type liferafts in stores on the port and starboard shade decks, launched by a gantry was known to be cumbersome and anything but swift in an emergency situation. Most LSL's during the Falkland Islands campaign had these valise liferafts spread down either shade deck with painters made fast ready to be manhandled directly over the side in the case of an emergency. T0896  
G0454
5. Communications Fit. The number of UHF sets was only just adequate for the task, GALAHAD was fitted with 696 UHF sets that were unreliable and caused an unnecessary work load. G1884  
G1885

DESIGN

6. Aluminium Superstructure. Concern existed about two aspects of aluminium; firstly how easily aircraft cannon fire passed through it, and secondly when subjected to fire the result was quite different to that which had been expected and horrified quite a number of Officers. T1569  
G0707
7. Laminate Bulkheads. When damaged these panels release considerable amounts of asbestos dust; indeed at times this dust is mistaken for smoke. It was also noted that the shattering of laminate could cause facial damage and injure people. T1569

G4-1

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8. Wooden External Accommodation Doors. It was felt that these doors with brass hinges and ordinary mortice locks were quite inadequate to the effects of blast, and very susceptible to distortion and damage. G0246
9. Internal Accommodation Doors. Several doors subjected to the effects of the attack were reported jammed and restricted personnel escaping from cabins and accommodation. G0454  
G1247
10. Roller Shutter Fire Doors. Some doubt as to the efficiency of the doors was felt; the one fear was that should they be closed at 'Action Stations' and were subjected to blast the result would be a buckled door and possible entrapment of personnel. G0244
11. Flight Deck Refuelling System. The siting of the AVCAT tank in its present position made it extremely vulnerable to attacks by cannon fire. The fitting of a remote start for the main pump from the bulk tank on the flight deck would greatly speed up operations when refuelling large numbers of helicopters. G0457
12. Alternator Header Tank. The position of this tank high up in the Engine Room gave cause for concern and indeed it was considered in GALAHAD to be one of the major contributors to the smoke and subsequent fire. G0244
13. Foam Injection Points to the steering gear compartment were muted by Officers aboard TRISTRAM who felt that with the permanent access to this compartment blocked, injection points would at least have allowed a fire fighting effort to be brought to bear on any fire in the space. T2337
14. Fire Main Breaching. Although isolating valves are fitted to the firemain there was no real provision for bridging/breaching this system should a section of pipe be damaged. T1570
15. Power Isolation. It was stated to the Board that it would be beneficial to have the capability for greater isolation of the ring main power system. T2237
16. Emergency Lighting was felt to be inadequate and gave very little visibility in the conditions of smoke that existed on GALAHAD. G1441
17. Tank Deck Lighting gave cause for concern in that the peacetime link safety system for use when explosives are carried within the tank deck was not able to be used, as lights were required at all times to work. This meant that with the power on, ammunition and cased petrol at times had to be stowed in a hazardous environment. T2334  
T2335

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DISCUSSION

18. The report of the Fire Research Station on the furniture and mattresses commented favourably on the fire resistant qualities of the materials, and they were insufficient in quantity to cause the rapid production of smoke that occurred in SIR GALAHAD. App 1
19. It is clear that a better search of smoke filled compartments could have been carried out had some BAs had been stowed in external positions. It is the opinion of the Board that little could have been done to contain or halt the spread of fire in SIR GALAHAD even if BAs had been available. G0709  
G0242  
G1133
20. The Board feel the present system of launching the valise liferafts is not acceptable in terms of ease and quickness in an emergency situation and that alternative type of liferaft and stowage should be found. The spaces available for alternative stowage are limited, the perfect solution would be the provision of self releasing stowages along the shade deck, however when side carrying a MEXIFLOTE these liferafts would be rendered unuseable. Other positions such as the vehicle deck would cut down cargo carrying capacity and render them liable to damage when loading and discharging. T0896  
G0454
21. In order to achieve a light weight construction ensuring a maximum cargo carrying capacity for ships of their size, aluminium was used extensively to the highest standard of Lloyds requirements and complying with all Department of Trade Building Regulations. The Board feel that little can be done to change this type of construction without severe penalties to the operational capabilities of LSLs. T1569  
G0707
22. It is felt that the use of alternative materials to Marinite as partition bulkheads would afford no more protection and could possibly cause greater restriction to the passage of personnel when subjected to weapon attacks. Of far greater concern is the asbestos dust which is liberated when panels of this nature are damaged or shattered. These materials are no longer acceptable by governing bodies and are not used in new construction, and are replaced in existing ships during annual refits on an opportunity basis. T1569
23. The Board felt that the heavy wooden external doors were adequate but that the hingeing and locking arrangements should be strengthened. G0246
24. Internal cabin doors suffered distortion of the light steel section of the frames, thus causing the door to jam. It is felt that the provision of escape panels in doors would overcome this problem. G0454  
G1247

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25. It was stated that doubt existed as to the ability of roller shutter doors in the down position to withstand the effects of blast and still be openable, this doubt is accepted by the Board but it is felt that this would apply equally to a conventional door. Evidence was given in the subsequent damage report of SIR TRISTRAM that the roller shutter doors operated satisfactorily and that the replacement of these doors would be of no great advantage.

G0454

26. While it is agreed that the AVCAT ready use tank on the tank deck is in an exposed position, it is readily accessible for fire fighting effort should this compartment be damaged and result in fire. To resite the tank in a lower compartment would not be a practical solution from the operation of fuelling of helicopters by the flight deck crew who need immediately to ascertain content and quality of the product. In addition the length of the piping system from tank to helicopter would be greatly increased thereby heightening the risk of contamination of the AVCAT either by solids or condensation.

G0244

27. The Board was made aware by one of its members that the siting of the Alternator fuel header tank had been the subject of previous studies. However in the light of the major role this tank played in the fire and smoke evolution that led to the abandonment of SIR GALAHAD the Board feel that a further review of this study should be undertaken. Furthermore, in new construction ships the siting of this tank needs to be most carefully considered in the light of action damage.

G0244

28. In SIR TRISTRAM no attempt was made to use the existing limited isolation system of the ring main, and the Board feel that little benefit would be gained by installing further means of isolation. No evidence exists that the system as fitted was any way contributory to the events that led to the abandonment of SIR TRISTRAM and SIR GALAHAD. The failure of SIR GALAHAD's engine room staff to restore power is considered to have been due to the rapid build up of smoke and with lack of Breathing Apparatus little could be done.

T2237

29. Emergency lighting systems fitted to LSL are in two forms; selective 220 volt, 22 watt fluorescent light fittings receiving power via the emergency switch board, these being unswitchable police lights which are supplied under normal conditions from mains supply through the mains/emergency interconnecting link, and from emergency generator in the event of mains failure; 24 volt 25 watt DC, supplied from a 240V/24V rectifier via the emergency switch board interconnector link under normal conditions under mains failure conditions supply is from the emergency generator. In the event of both mains and emergency supply failure these 24 volt lights are supplied by a 150 ampere hour battery system supplied via a mains failure switch. It will be seen from the above that adequate emergency lighting was available initially after the attack, visibility was not impaired but with the increase in smoke density these soon became ineffective. It is felt that any form of lighting under these conditions would not be suitable.

G1441

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30. The concern over the tank deck lighting with regard to the stowage of ammunition and cased fuels is noted, but the Board feel, under the warlike condition these ships were operating the risks were acceptable and that peacetime standards cannot apply. T2334
31. The loss of main power at the time of the attack was known on SIR TRISTRAM to have been caused by the premature tripping of circuit breakers. These breakers are triple pole air break type with over loads and time lags with shunt tripping coils. All generator and circuit breakers are solenoid operated; it is possible under the effect of extreme shock loads to the ship, premature tripping could occur. This fault was easily rectified by Second Engineer Officer WILLS. The loss of power on SIR GALAHAD cannot be substantiated as none of the senior personnel in the Machinery Control Room at the time of the attack survived. The only Officer who survived from the Engine Room would not have the specialised knowledge of the operation of the main switch board and did not observe the sequence of events. There is evidence that power was available at some stage and that short circuiting occurred, however it cannot be substantiated that loss of power was caused by this short circuiting due to damage sustained. T2237  
G1274  
G1293  
G2652/3

CONCLUSIONS

32. It is concluded that: G1186
- a. Furniture and mattresses were of suitable standard compatible with habitability.
  - b. Lack of BA external to accommodation hindered search for survivors and any subsequent fire fighting effort.
  - c. Provision of ELSA throughout the ship accessible not only to Engine Room personnel but to all ships company and embarked troops could have contributed in saving further lives. G1133  
G1136
  - d. The present system of launching valise type liferafts is not conducive to the rapid evacuation of the ship in an emergency and is therefore not acceptable. T0896  
G0454
  - e. Communication equipment was outdated in one case and the fit was only just adequate for essential comms with no redundancy to allow for maintenance or repair.
  - f. The use of aluminium in construction is entirely acceptable, as alternatives have severe operational penalties.
  - g. Partition bulkheads consisting of asbestos filled materials are a hazard and ideally should be replaced in existing ships. This type of material should not be used in new construction. T1569
  - h. External wooden doors were adequate but hinges and locking arrangements were weak points. G0454

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- j. All cabin doors were liable to jam when subjected to associated weapon damage; alternative methods of escape must be provided.
- k. Existing roller shutter fire doors operated effectively and no replacement is required. G0454
- l. Due to operational considerations the AVCAT tank cannot be resited. Remote starting of the resupply pump by flight deck team at the ready use tank is supported.
- m. The siting of the Alternator fuel header tank gives the Board cause for great concern, although it is clear that this problem is recognised, the Board, in the light of experience gained, support a review of the situation. G0244
- n. The Board supports the view that for compartments such as the steering gear compartment and compartments with inflammable stores with only 1 entry, a system of foam tubes to assist in firefighting is essential. T2337
- o. No evidence supported that breaching of firemain was in any way a problem, whilst a desirable enhancement of the system it is not considered essential. T1570
- p. The isolation system fitted to LSLs is adequate for the tasks they have to undertake. T1570
- q. The emergency lighting system is comprehensive and effective, no lighting system could have provided visibility in the conditions of smoke that existed in SIR GALAHAD. G1441
- r. Certain relaxations of peacetime standards and regulations must be acceptable as in the case of tank deck lighting if Military Commanders are to achieve their aims in War. T2334

RECOMMENDATIONS

33. It is recommended that:
- a. Additional BA sets be sited externally on the upper decks. G0709  
G0242  
G1133
- b. ELSA be carried in sufficient quantity to cover all personnel embarked. G1133  
G1336
- c. A study be carried out into changing the present valise type liferafts, and resiting them in positions in the quick release mode. T0869  
G0454
- d. A review of the communications fit of LSLs be undertaken. G1884  
G1885

CONFIDENTIAL

- e. Asbestos filled materials should not be used in new construction, and that existing ships continue a policy of replacement as time on an opportunity basis exists. T1569
- f. External doors to have hinges and securing arrangements strengthened. G0246
- g. All cabin doors to be fitted with escape panels. G0454
- h. The feasibility of fitting remote start facility to AVCAT resupply pump from the bulk tank, be progressed. G0457
- i. A review into the resisting of the Diesel Alternator fuel header tank be undertaken. G0244
- j. Remote foam tube accesses be fitted to the steering flat, one either side in way of Fridge Flat handling space and the Bonded Store access lobby. Similar compartments used for the temporary stowage of flammable materials ie paint store should also be considered. T2337

Paper Sacks

Contained a mixture of horsehair and wadding, probably removed from lined covering - slow burning.

General Comment

The seating and bedding materials supplied were not unusual and their general behaviour in fire is known from previous FRS work. They would all burn if subjected to a sufficiently intense ignition source. The mattress and the horsehair seat infill would normally burn only slowly but the synthetic latex foam in the metal framed chair and the polyurethane foam in the armchair cushions would burn rapidly and produce a lot of smoke, but because of the small amount of foam in the metal frame chairs one would need a large number of them stacked together to constitute a serious fire problem. Although the armchair cushions represent a larger bulk of flammable material they would again have to have been a substantial number of such chairs to produce the smoke production observed in the videotape records.

Fire Research Station  
August 1987  
File 290/136703

P J FARRELL  
S A SMITH

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OBSERVATIONS/COMMENTS - FURNISHINGS FROM SIR GERAINT PACKAGE  
GER 1.7.82

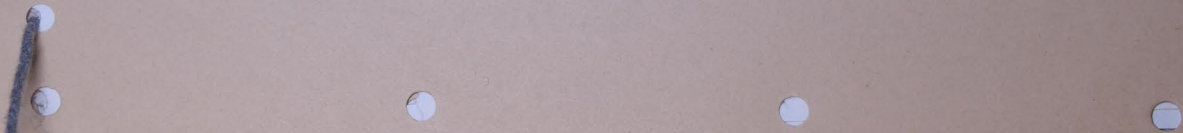
<u>Item</u>	<u>Comment</u>
Mattress	Cotton cover, cotton flock lining, horsehair infill, metal springs.  This type has a good rating for ignition/flaming tests. Low smoke production.
Chair	Metal frame, latex foam cushioning (1 inch thick) PVC impregnated fabric. Latex foam produces dense black smoke during burning. A simple match test showed that the covering burnt well and produced black smoke.
Armchair Squab	Polyurethane (PU) crumb infill, wool upholstery. Cover difficult to ignite and slow burning; PU burns rapidly and smokily.
Paper Sacks	Contained a mixture of horsehair and sacking, probably removed from fixed seating - slow burning.

General Comment

The seating and bedding materials supplied were not unusual and their general behaviour in fire is known from previous FRS work. They would all burn if subjected to a sufficiently intense ignition source. The mattress and the horsehair seat infill would normally burn only slowly but the synthetic latex foam in the metal framed chair and the polyurethane foam in the armchair cushion would burn rapidly and produce much smoke, but because of the small amounts of foam in the metal frame chairs one would need a large number of them stacked together to constitute a serious fire problem. Although the armchair cushions represent a larger bulk of flammable material there would again have to have been a substantial number of such chairs to produce the smoke production observed in the videotape records.

Fire Research Station  
August 1982  
File FRO/134/03

P J FARDELL  
S A AMES



BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX G5 DATED 23 SEPT 82

MEDICAL

1. There is no evidence that medical factors impaired the performance or efficiency of the officers or crew of SIR GALAHAD. Although watchkeepers inevitably suffered some loss of sleep and worked long hours in the course of their duties, they remained reliable and fully competent in all tasks. G0120  
 G0248  
 G0456  
 G1546
2. Morale generally was high throughout the campaign, although the Chinese crew were initially unhappy and disillusioned when SIR GALAHAD was ordered to sail for the SOUTH ATLANTIC as one third of them were due to be relieved and to return home to HONG KONG. However, they remained disciplined and co-operative and could be relied upon to do their jobs effectively. Morale of the officers was excellent although there was a certain amount of fear and apprehension, particularly at SAN CARLOS. The effect of prolonged periods of tension during air attacks inevitably had a wearing effect, but these factors had no effect on individual or collective efficiency. Even after the bombing at SAN CARLOS on 28 May officers and crew remained cheerful. Captain ROBERTS, although concerned and anxious at times, did not become fatigued and remained calm and dependable throughout. G0290  
 G1753  
 G0030  
 G1544  
 G0217  
 G0219  
 G1666
3. There is no evidence that alcohol was taken excessively, or that medication interfered with the performance of duty. G1549  
 G1550
4. After the attack at FITZROY, the ships company and embarked troops remained calm and the evacuation from the ship was orderly. Many men were described as "subdued" or "shocked" and were rather passive but there were no reports of panic. G0180-1  
 G1027  
 G1737  
 G0428  
 G1232  
 G1322  
 G1503  
 G1877
5. The majority of the casualties occurred on the tank deck where men of the WELSH GUARDS and 16 Field Ambulance were waiting to disembark. Annex G6 details the distribution and location of the dead and injured. The worst casualties were suffered by personnel standing at the forward end of the stern trunking where it is believed that deflagration of a bomb led to a massive fireball. The WELSH GUARDS Mortar Platoon suffered 23 dead and 5 severe burns from a strength of 35. Of 45 men, A Echelon lost 12 dead and 14 suffered severe burns, and one man received a shrapnel injury to the face. Further forward in the tank deck, on the starboard side of number 2 cargo hatch were men of Prince of Wales Company. Of 29 men only 2 escaped uninjured, and of the remainder 3 died and 24 suffered burns. In addition to burns, one man suffered a traumatic amputation of leg, one a bullet wound and one a foot injury. Opposite Prince of Wales company, on the port side of the tank deck, were men of 3 Company. Two men were killed, 16 suffered burns and the remainder suffered traumatic injuries including a skull fracture, shrapnel wound, dislocated shoulder and fractured ankle. The remainder of 16 Field Ambulance were located on the Annex G4

starboard side of the tank deck forward of number 2 Cargo Hatch. Their strength is unknown as a forward element had gone ashore earlier in the LCU. Three men were killed and 10 injured; Major R NUTBEEM RAMC, the second in command, was found dead on the vehicle deck near the starboard ladder to the upper poop deck. He had been killed by a major head injury, possibly from shrapnel.

6. Elsewhere in the ship casualties were much lighter. Second Engineer Officer HENRY and Third Engineer HALLWOOD died in the engine room and are thought to have been suffocated by smoke. Third Engineer MORRIS was killed on the starboard side of the officer's accommodation, in the alleyway near the Second Engineers cabin. He had suffered a major head injury, possibly caused by being thrown against a bulkhead. In addition two Chinese were killed on SIR GALAHAD and two on SIR TRISTRAM making a total of fifty deaths.

G1296  
G1052  
G1199

7. The cause of death of those who perished in the tank deck is unknown, but it is suggested that they were incinerated by the fireball. It is remarkable that some men in the stern trunking survived and could be evacuated through the port after door.

8. Burns to exposed areas such as the face and hands were very common amongst survivors on the tank deck, and constituted the majority of casualties treated at FITZROY. Body burns were more amongst survivors and it seems that soldiers' denim combat clothes afforded a measure of protection. There is one report that some sailors were wearing nylon weatherproof jackets which melted, but there is no evidence that any burns resulted from, or were exacerbated by nylon clothing.

G2885-7  
A1157

G1644  
G1160  
G1549

9. Credit is due to the senior NCO's and men of 16 Field Ambulance who set up a casualty dressing station on the forecastle and forward end of the vehicle deck. These men dressed wounds, set up intravenous infusions and administered morphine to casualties, and helped in their evacuation by helicopter from the ship. Although most of their equipment was on the tank deck, these men exercised the highest degrees of resourcefulness and initiative, and their action was a credit to their corps. Evacuation of casualties was to a certain extent hindered by the lack of Neil Robertson stretchers, and in some cases injured personnel had to be lowered into rescue craft on hastily modified shock mats.

G0934  
A1155  
G2881

G1222-4

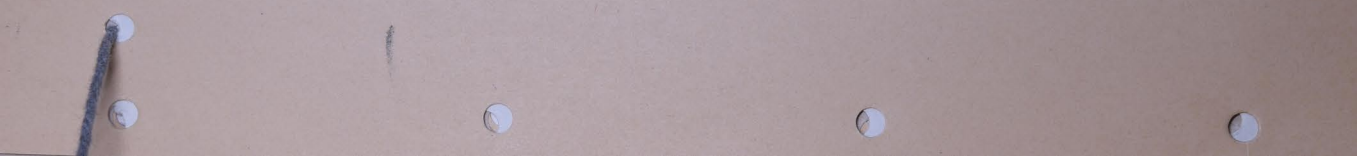
10. The ship's Medical Officer was considerably shocked after the bombing, and although he claims he was able to function normally, there is considerable evidence to the contrary. According to several reports he appeared dazed and shaken up, and did not contribute significantly to the medical care of the casualties.

G1661

G0803-7  
G0953  
G1757

11. It is a tribute to the rescue and medical services that of the 135 casualties who were evacuated from SIR GALAHAD, none died subsequently.

A1157










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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX G6 DATED 23 SEPT 82

LOCATION OF INJURED

1. They key to the attached diagram (G6.2) is as follows:

-  FIRE OR HEATED SURFACE
-  STRUCTURAL DAMAGE
-  FLASH
-  INDIVIDUAL BURNS OR AREA IN WHICH NUMEROUS BURNS RECEIVED
-  INDIVIDUAL DEATHS OR AREA IN WHICH NUMEROUS DEATHS OCCURRED
-  WEAPON ENTRY/EXIT POINT
-  UNINJURED PERSONNEL

2. An enlarged diagram (ANNEX G6 LARGE SCALE) is available on application of CINCFLEET, Legal Section, NORTHWOOD.

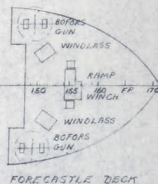
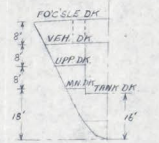
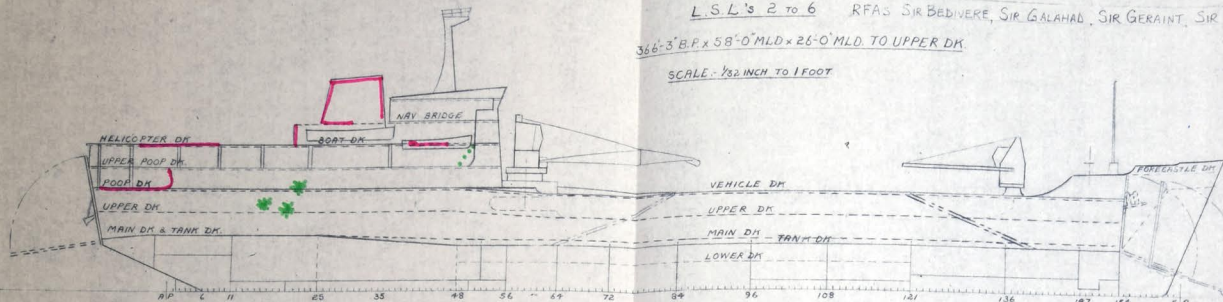
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L.S.L.'s 2 to 6 RFA's SIR BEDIVERE, SIR GALAHAD, SIR GERAINT, SIR PERCIVALE, SIR TRISTRAM.

36'-3" B.P. x 58'-0" MLD x 26'-0" MLD TO UPPER DK

SCALE - 1/32" INCH TO 1 FOOT

ANNEX G6

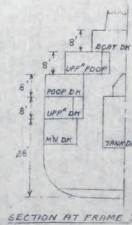


SECTION AT FRAME 127

MIDSHIP SECTION

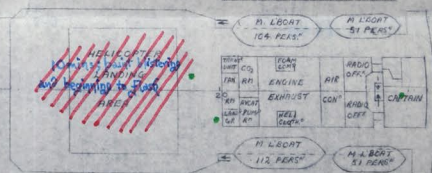


WHEELHOUSE TOP

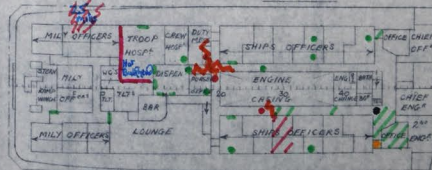


SECTION AT FRAME 35

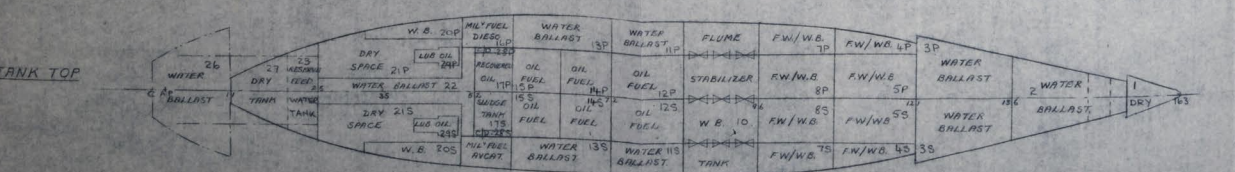
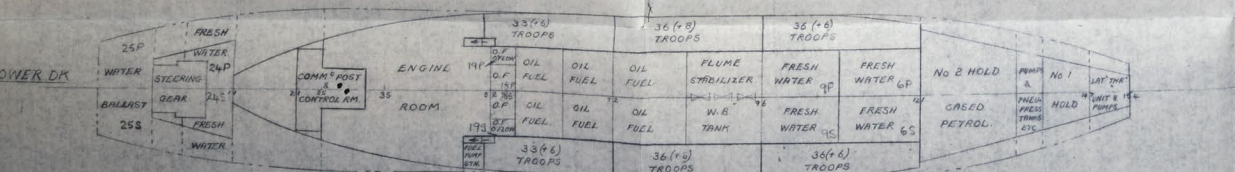
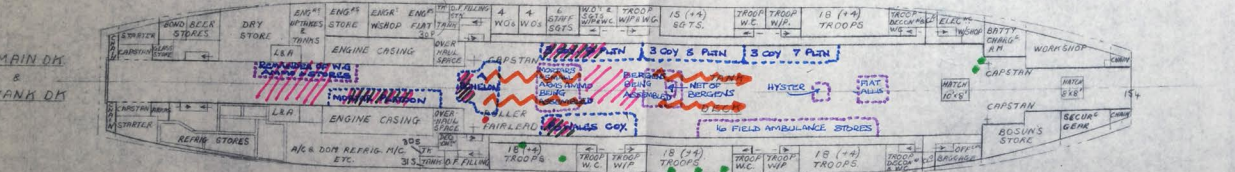
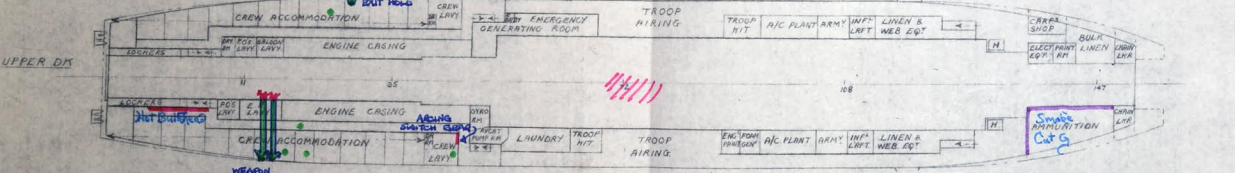
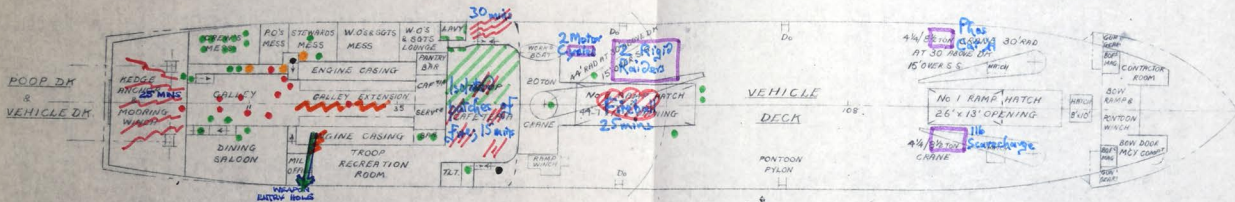
NAVIGATING BRIDGE DECK

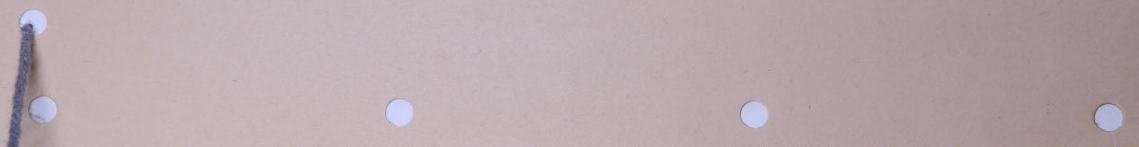


BOAT DECK



UPPER POOP DECK





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BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
ANNEX H DATED 23 SEPT 82

RESCUE AND SALVAGE

1. A brief narration of immediate rescue assistance by other units to each LSL is at Appendix 1.
2. A brief summary of equipment etc. salvaged from both ships is at Appendix 2.

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APPENDIX 1 TO  
ANNEX HRESCUE OPERATIONSRFA SIR GALAHAD

1. After the order to abandon ship had been made the evacuation of personnel was carried out essentially in three modes. These were:
  - a. Life-rafts and a lifeboat from SIR GALAHAD
  - b. 3 Lifeboats from SIR TRISTRAM, one LCU and one Mexiflote
  - c. 4 Helicopters.
  
2. The majority of ship's officers left the ship in number four lifeboat together with some of the Chinese crew and embarked troops. The lifeboats on the starboard side, numbers one and three, could not be used because of the dense smoke on that side of the ship. Number two boat, forward of number four on the port side had been damaged and put out of action by cannon fire at SAN CARLOS.
  
3. A number of Chinese and some ship's officers launched life-rafts from the poop and then jumped into the sea. Some of these life-rafts were towed to shore by number four lifeboat. Three of SIR TRISTRAM's boats picked up personnel from life-rafts and ferried them ashore.
  
4. At the time of the attack the LCU was alongside the port shade deck and evacuated a number of WELSH GUARDS and other troops. The Mexiflote, which had just finished unloading at the beach when the attack occurred, hastened to SIR GALAHAD to assist in the evacuation. It attempted to tie up alongside the port shade deck but was unable to do so, and its bow was blown away from the ship by the headwind. Having secured properly the coxswain inverted a life-raft on the deck of the Mexiflote and men were able to use this as a landing cushion and jumped onto it from the shade deck. Thirty or forty escaped from the ship in this way which was original in its concept.
 

	G 1226
	G 0178
  
5. A large number of uninjured troops launched life-rafts from the shade decks and left the ship in them. Unfortunately, without paddles, they tended to drift or be blown towards the burning ship. There are several reports of helicopters using their rotors to blow the rafts clear of SIR GALAHAD, and in fact this was recorded on the BBC video film of the episode.
 

	J1 414-5
	J1 433
	J1 440
	J1 456
  
6. Four helicopters took part in the rescue of survivors and injured men, three of which were Sea Kings and one a Wessex. They winched casualties up from the vehicle deck and foc'sle and flew
 

	G 0178
--	--------

HI-1

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them to the Advanced Dressing Station at FITZROY. They hovered in extremely dangerous conditions, only a few feet from the burning ship in which ammunition was constantly exploding. Those involved in winching men from the sea or from life-rafts off the stern of the vessel were enveloped in thick smoke, in which visibility was minimal. Tribute to their bravery has been made by Lt Col RICKETS, Commanding Officer of the First Battalion WELSH GUARDS. He described their action as "magnificent to behold".

A 1420

7. The evacuation was also aided by a civilian craft, the identity of which is unknown but is believed to belong to one of the inhabitants of FITZROY SETTLEMENT.

G 0815

8. The evacuation of more than three hundred men from SIR GALAHAD took little more than thirty minutes and was orderly and smooth with no evidence of panic.

G 1027

G 0428

G 1232

G 1877

9. On arrival ashore, the survivors were briefly checked on the beach and those in need of medical care were transported to the Advanced Dressing Station at Fitzroy. This was staffed by the remnants of 16 Field Ambulance who carried out initial assessment and evaluation of casualties, and resuscitation of those in need. Helicopter evacuation of casualties to Red Beach hospital occurred rapidly, considering the circumstances; 135 injured men, mainly burns cases, passed through the ADS after the attack.

A 1156

#### RFA SIR TRISTRAM

10. With far fewer personnel involved, there was little difficulty in moving personnel from SIR TRISTRAM to shore; there are no particular points to note in this rescue operation.

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APPENDIX 2 TO  
ANNEX HSALVAGERFA SIR GALAHAD

1. CSGT B DAVIES of the 6th Assault Squadron, HMS INTREPID boarded SIR GALAHAD on 10 Jun on the instructions of MEO, HMS FEARLESS but nothing was salvaged by him until the following day when he transferred a DC pump to SIR TRISTRAM. Another INTREPID LCU offloaded 2 Rigid Raiding Craft and 3 Johnson outward motors.

Appendix  
IV to  
Annex F3

2. LT BRUIN, CO of NP 1890 boarded the ship on 10 Jun and removed 12 boxes of phosphor grenades from the chacon on the port side of the Vehicle Deck. He also removed about 2 dozen light arms such as rifles and machine guns; these were the only serviceable ones he found.

A 1265

3. It was also reported to us that Army units at FITZROY boarded the ship and removed service and personal gear.

Appendix  
IV to  
Annex F3

RFA SIR TRISTRAM

4. The following items were offloaded by 81 Ord Coy to the Forward BMA:

20 Pallets	81 mm Mortar HE
4 Pallets	0.5in Machine gun ammunition
8-10 Pallets	Rapier Missiles
20 Pallets	0.762 mm ball ammunition
20 Pallets	Mixed Pyrotechnics
30 Pallets	105 HE and Smoke Shell
10 Pallets	Compo rations

In total 115-120 tons weight.

A 1744

5. All cutlery and crockery were removed by OCAS FEARLESS. Additional items believed to have been removed were:

Fire Hoses  
Food  
RE Bridge Sections  
Mattresses to 5 Inf Bde HQ

6. Personal kit was not removed.

7. Army units were continually boarding the ship for at least two days and we believe personal effects were removed as well as service items.

Appendix  
IV to  
Annex F3

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX J dated 23 Sept 82

WITNESSES TRANSCRIPTS AND STATEMENTS

ANNEX J1. Command and Land Forces

ANNEX J2. SIR TRISTRAM

ANNEX J3. SIR GALAHAD

NB. Copies of the transcripts and statements are not circulated with the Report due to their bulk. They may be sighted on application to CINCFLEET Legal Section, NORTHWOOD.

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX J:1 dated 23 Sep 87COMMAND AND LAND FORCES TRANSCRIPTSINDEX

REF	COMMAND	RANK	NAME	QUESTION NUMBERS	TAPE NO	PAGE NO
A.1	COMAW	CDRE	M CLAPP	A0001-A0179	40	J1.1
2				A0180-A0315	27	.43
3				A0316-A0358	47	.66
4				A0359-A0399	46	.84
5				A0400-A0417	37	.93
6				A0418-A0498	28	.98
7				A0499-A0587	26	.114
8				A0588-A0667	28	.136
B.1	BEACH AT FITZROY			A0668-A0777	25	.157
2				A0778-A0818	29	.178
3				A0819-A0844	29	.191
C	FOFI			A0845-A0907	21	.195
D.1	CLIFF 1	MAJ GEN <	J J MOORE <	A0908-A0970	39	.212
2				A0971-A1055	39	.237
3				A1056-A1074	32	.256
4				A1075-A1087	39	.264
E.1	RAMC			A1088-A1164	32	.267
2				A1165-A1208	58	.286
F.1	FCDT			A1209-A1234	33	.291
2				A1235-A1249	33	.296
3				A1250-A1271	41	.299
G.1	T BATTERY			A1272-A1306	45	.303
2				A1307-A1355	44	.314
H.1	1st BAT WELSH GUARDS			A1356-A1420	55	.321
2		MAJ <	G SAYLE <	A1421-A1479	55/56	.329
3				A1480-A1555	57	.349
I.1	5th INF BRIGADE	BRIG <	M WILSON	A1556-A1587	53	.364
2				A1588-A1635	54	.377
3				A	A	WRITTEN REPLY
				A1636-A1693	59	.385
J.1	LAND FORCES/ FITZROY			A1769-A1772		
2				A1694-A1744	60	.400
K.	16th FIELD AMBULANCE BRIGADE	(EX SIR GALAHAD)		A1745-A1768	60	.406
L.	WELSH GUARDS	(EX SIR GALAHAD)		13 STATEMENTS	WRITTEN	.408
				10 STATEMENTS	WRITTEN	.458-
						.568

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BOARD OF INQUIRY  
LOSS OF SIR TRISTRAM  
& SIR GALAHAD  
ANNEX J:2 dated 23 Sept 82

RFA SIR TRISTRAMINDEX

REF		RANK/GRADE	NAME	QUESTION NO	TAPE	STATE MENT	PAGE NO
A	MASTER	CAPT	G R GREEN	T0001-T0266	2/3	*	J2.1
B	CHIEF ENGINEER			T0267-T0339	5	-	.54
C.1	DECK OFFICERS			T0340-T0539	7/8	*	.62
				T4090-T4131			.106
2				T0540-T0668	10	*	.119
3				T0669-T0902	10/11	*	.140
4				T0903-T0998	11	-	.171
5				T0999-T1208	11	-	.185
6				T1209-T1372	12	-	.209
D.1	ENG OFFICERS			T1373-T1571	13	-	.229
2				T1572-T1663	13	-	.264
3				T1664-T1751	14	*	.274
4				T1752-T1926	14	*	.288
5				T1927-T2029	14/15	-	.309
6				T2030-T2141	15	-	.324
7				T2142-T2237	15	-	.335
E.1	ELECT OFF PURSER AND DR			T2238-T2343	15	-	.345
2				T2344-T2466	16	-	.358
3				T2467-T2663	16	-	.373
F.1	RADIO OFFICERS			T2664-T2834	17	*	.379
2				T2835-T2983	17	-	.425
3				T2984-T3101	18	-	.441
G.1	GUN CREW			T3102-T3123	31	-	.453
2				T3124-T3192	33	-	.466
3				T3193-T3215	33	-	.474
H	CHINESE CREW	CREW		T3216-T3222	-	*	.478
				T3223-T3229	-	-	.482
				T3230-T3236	-	-	.484
				T3237-T3243	-	-	.486
				T3244-T3250	-	-	.488
				T3251-T3257	-	-	.490
				T3258-T3264	-	-	.492
				T3265-T3271	-	-	.494
				T3272-T3278	-	-	.496
				T3279-T3285	-	-	.498
				T3286-T3292	-	-	.500
				T3293-T3299	-	-	.502
				T3300-T3306	-	-	.504
				T3307-T3313	-	-	.506
				T3314-T3320	-	-	.508
				T3321-T3327	-	-	.510
				T3328-T3334	-	-	.512
				T3335-T3341	-	-	.514

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			T3342-T3348	-	.516
			T3349-T3355	-	.518
			T3354-T3362	-	.520
			T3363-T3369	-	.522
			T3370-T3376	-	.524
			T3377-T3383	-	.526
			T3384-T3390	-	.528
			T3391-T3397	-	.530
			T3398-T3404	-	.532
			T3405-T3411	-	.534
			T3412-T3418	-	.536
			T3419-T3425	-	.538
			T3426-T3432	-	.540
			T3433-T3439	-	.542
			T3440-T3446	-	.544
			T3447-T3453	-	.546
			T3454-T3460	-	.548
			T3461-T3467	-	.550
			T3468-T3474	-	.552
			T3475-T3481	-	.554
I.1	RADIO OPERATORS		T3482-T3511	35	-.565
2			T3512-T3578	35	-.568
J.1	AIR DEFENCE TEAM		T3579-T3647	43	-.577
2			T3648-T3701	54	-.588
3			T3702-T3765	54	-.594
K.1	MEDICAL ASSISTANT		T3766-T3856	42	-.600
L.1	RCT DETACHMENT		T3857-T3897	51	-.616
2			T3898-T3940	50	*.620
3			T3941-T3953	50	-.629
4			T3954-T3971	51	-.631
5			T3972-T4003	51	*.634
6			T4004-T4010	50	*.638
7			T4011-T4035	51	-.640
8			T4036-T4062	51	-.643
9			T4063-T4089	51	-.646

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RFA SIR CALAHAD

 BOARD OF INQUIRY  
 LOSS OF SIR TRISTRAM  
 & SIR GALAHAD  
 ANNEX J 3 dated 23 Sept 82

REA		RANK/GRADE	NAME	QUESTION NO	TAPE	STATE MENT	PAGE NO
A	MASTER	CAPT	P J ROBERTS	G3450-G3451			
B	CHIEF ENGINEER			G0001-G0192	4/24	*	J3.1
C.1	DECK OFFICERS			G0193-G0256	6	*	.46
2				G0257-G0466	8/9	*	.66
3				G0467-G0558	9	*	.108
4				G0559-G0716	9	*	.127
5				G0717-G0829	19	*	.148
6				G0830-G0958	19	*	.163
D.1				G0959-G1039	19/20	*	.182
2				G1040-G1133	20	*	.199
3				G1134-G1247	24	*	.213
4				G1248-G1336	24	*	.227
E.1				G1337-G1404	24	*	.238
2				G1405-G1514	22	*	.247
3				G1515-G1671	22	*	.261
F.1				G1672-G1762	20	*	.285
2				G1763-G1891	23	*	.298A
3				G1892-G1993	23	*	.319
4				G1994-G2124	23	*	.330
G.1				G2125-G2192	30	*	.345
2				G2193-G2230	30	*	.345
3				G2231-G2264	30	*	.358
H.				NO EVIDENCE	-	*	.364
				TAPED	-		
				G2265-G2271	-	*	.370
				G2272-G2278	-	*	.372
				G2279-G2285	-	-	.374
				G2286-G2292	-	*	.376
				G2293-G2299	-	-	.379
				G2300-G2306	-	-	.381
				G2307-G2313	-	-	.383
				G2314-G2320	-	-	.385
				G2321-G2327	-	-	.387
				G2328-G2334	-	-	.389
				G2335-G2341	-	-	.391
				G2342-G2348	-	-	.393
				G2349-G2355	-	*	.395
				G2356-G2362	-	-	.397
				G2363-G2369	-	-	.399
				G2370-G2376	-	-	.401
				G2377-G2383	-	-	.403
				G2384-G2390	-	-	.405
				G2391-G2397	-	-	.407
				G2398-G2404	-	*	J3409
				G2405-G2411	-	-	.413
				G2412-G2418	-	-	.415
				G2419-G2425	-	-	.417
				G2326-G2432	-	-	.419
				G2433-G2439	-	-	.421
				G2440-G2446	-	-	.423
				G2447-G2453	-	-	.425
				G2454-G2460	-	-	.427

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			G2461-G2467	-	-	.429
			G2468-G2474	-	-	.431
			G2475-G2481	-	-	.433
			G2482-G2488	-	-	.435
			G2489-G2495	-	-	.437
			G2469-G2502	-	-	.439
			G2503-G2509	-	-	.441
			G2510-G2516	-	-	.443
			G2517-G2523	-	-	.445
			G2524-G2530	-	-	.447
			G2531-G2537	-	-	.449
			G2538-G2544	-	-	.451
			G2545-G2551	-	-	.453
			.	-	-	.455
		ADDITIONAL CHINESE STATEMENTS				
I.1	RADIO OPERATORS		G2552-G2619	36	*	.457
2			G2620-G2726	34	*	.467
3			G2727-G2817	34	*	.481
J.1	AIR DEFENCE TEAM		G2818-G2906	38	-	.495
2			G2907-G2976	54	*	.507
K.1	MEDICAL ASSISTANTS		G2977-G3085	42	*	.515
L.1	RCDT		G3086-G3120	49	*	.531
2			G3121-G3169	48	*	.537
3			G3170-G3109	49	-	.543
4			G3210-G3248	48	*	.548
5			G3249-G3328	48	*	.554
6			G3329-G3368	49	*	.566
7			G3369-G3405	48	-	.572
8			G3406-G3416	49	*	.577
9			G3417-G3449	49	*	.580
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