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British Combat Service Support During the Falkland Islands War:  
Considerations for Providing Operational Sustainment  
to Remote Areas

by

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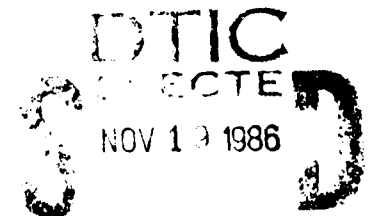
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## ABSTRACT

**BRITISH COMBAT SERVICE SUPPORT DURING THE FALKLAND ISLANDS WAR:**  
Considerations for Providing Operational Sustainment to Remote Areas,  
by Major Kenneth L. Privratsky, USA, 52 pages.

This study analyzes British combat service support at the operational level during the 1982 Falkland Islands War and discusses important considerations for providing operational sustainment to remote areas. It begins with a brief discussion of the rapid deployment of the British Task Force and the constraints that resulted for subsequent operational sustainment. Then, it examines British operational sustainment from time of deployment to the end of the war. The discussion includes organization; initial planning; importance of Ascension; final plans (to include medical evacuation) and how plans changed. The study then discusses six issues from the British experience that are important for the U. S. military to consider when planning and sustaining operations to remote areas: centers of gravity; air superiority and operational sustainment; forward basing; logistics-over-the-shore operations; protecting future sustainability; and improvisation. The study concludes that the U. S. military can learn important lessons from the Falkland Islands War.



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## **British Combat Service Support During the Falkland Islands War: Considerations for Providing Operational Sustainment to Remote Areas**

On 28 March 1982, an Argentine task force left its base at Puerto Belgrano, Argentina, 300 miles south of Buenos Aires, allegedly to take part in naval exercises being hosted by Uruguay. Nothing seemed out of the ordinary. The task force, consisting only of an aircraft carrier, three destroyers, three transports, two corvettes, and a landing ship, called little attention to itself. Instead of turning north from Puerto Belgrano as expected, though, these vessels headed southeast to take part in an "exercise" of a different nature called Operacion Rosario.<sup>1</sup> By 1 April, it had arrived in waters off a group of islands known to Argentinians as the Malvinas and to British as the Falklands. Had they seen the Argentine task force that evening, the 1,500 British shepherders and the single platoon of British soldiers on East Falkland might have regarded it as some type of April Fool's joke. They did not, however, and the presence of the Argentine task force was anything but a hoax. Falklanders went to bed contentedly that night as free British citizens. Much to their dismay and that of their countrymen and relatives in Britain, they awoke the next morning to find themselves unwilling citizens of Argentina.

Following the Argentine invasion, Britain moved with lightning speed to deploy what was known as Task Force 317, comprised of a Carrier Battle Group, an Amphibious Task Group, and a Landing Force Task Group. The mission of Task Force 317 was to conduct military operations to

reestablish British control of the Falklands. During the next few months, the world's attention shifted to this remote group of islands in the South Atlantic and what is now called the Falkland Islands War.

British achievements during the war have been the subject of many commentaries since then. Without question, one of their greatest was being able to sustain forces so far from their homeland despite a reluctance of other nations to assist them. The British had to "go it alone" during most of the war, and in doing so they faced many challenges. As Rear Admiral John Woodward, who commanded the Carrier Battle Group during the war, has summarized, "we were going to war at the end of a 7 1/2 thousand mile long logistic pipeline, outside the NATO area, with virtually none of the shore-based air we normally count on, against an enemy we knew little, in a part of the world for which we had no concept of operations. With the national press embarked, there was much to do."<sup>2</sup>

This paper focuses on what the British armed forces did to provide operational sustainment during the Falkland Islands War. According to current U. S. Army doctrine, operational sustainment "comprises those logistical and support activities required to sustain campaigns and major operations within a theater of operations. . . . [It] extends from the theater sustaining base or bases which link strategic to theater support functions, to the forward CSS [combat service support] units and facilities organic to major tactical formations."<sup>3</sup> British operational sustainment commenced with deployment of the Task Force. Two theater sustaining bases combined to link strategic support functions performed in Britain to tactical-level CSS units supporting the land war on East Falkland. The first existed at Ascension Island and proved indispensable as a link between Britain and the Task Force; the second consisted of sustainment vessels within the Task

Force and proved equally indispensable as a link between Ascension/Britain and tactical-level CSS units on East Falkland.

The paper contends that the British experience during the Falkland Islands War yields valuable lessons for providing operational sustainment to remote areas. After presenting a brief overview of actions taken by the British, at the strategic level, to deploy forces to the South Atlantic, it describes the British operational sustainment plan for the Task Force, how plans evolved, as well as why and how they changed. Then, it addresses key issues that are evident from the British experience that seem important for the U. S. military to consider should it become necessary at some time in the future for the U. S. to commit and sustain forces to remote areas where no U. S. bases for operation and sustainment exist.

### **Deploying the Task Force**

Any study of operational sustainment during the Falkland Islands War must begin with a brief review of Britain's strategic capability at that time to sustain a force so far away. The situation was far from favorable, and actions taken at the strategic level subsequently created constraints for operational sustainment. Since the mid-1960's, Britain had permitted steady reduction in her ability to project power outside the NATO area. Her attention, like that of many of her NATO partners, remained riveted to European scenarios. Britain had conducted no rapid deployment exercises in recent years.<sup>4</sup> The shipping necessary to deploy and sustain forces, particularly shipping of the right type to meet military requirements, was in short supply. Britain claimed only six Landing Ships



Logistic (LSLs) and two Landing Platform Docks (LPDs). Of the two LPDs, Fearless and Intrepid, both had been listed for disposal, and destruction of Intrepid had already commenced.<sup>5</sup> Most important, no contingency plans existed for deploying combat forces to the South Atlantic, let alone sustaining them upon arrival.

Complicating such lack of planning and ability to project power quickly was the inauspicious timing of the Argentine invasion. At any other time, Britain would not have been caught so short since stocks for one commando group were normally kept afloat for contingency purposes. Unfortunately, supply ships for this on-call force were then in port undergoing maintenance and stock turnover.<sup>6</sup> With Easter weekend fast approaching, many British had already taken off from work. Compounding matters further was the need for advance notice before railroads could be used, at least a seven-day notice being required to reposition rolling stock so that railroads could help move supplies to ports.<sup>7</sup>

Mitigating against these obvious concerns was a paradoxical requirement for quick action, and not just to show resolve to the British public, Falkland shepherders, and Argentinians. If the British were to win a war so far away, over such fragile lines of communication, they would have to do it before mid-June, which would witness the onslaught of winter in the South Atlantic--bringing its characteristic gale-force winds, icebergs, thirty- to forty-foot swells, and subfreezing temperatures. Not knowing whether war would be necessary, the British Cabinet nevertheless decided in the early hours of 2 April that it was essential to form and dispatch a task force as quickly as possible to the South Atlantic despite the lack of contingency plans and the shortfall in resources. Its answer to the lack of prior planning was to outload as much as possible, as quickly as

possible, then to keep supplies moving by continually loading and sailing more ships.

In the next four days, 3,000 truckloads of stocks rushed into British ports, enough to last 3 Commando Brigade, which was to be the initial land force, for a period of thirty days and the start of a large buildup of stocks afloat sufficient to sustain a much larger task force for three months.<sup>8</sup> Loading onto vessels started 48 hours after the Cabinet's decision to deploy forces. The next day, 5 April, 3,500 soldiers from 3 Commando Brigade and its attached units sailed from Portsmouth with about 4,000 short tons of freight and 3,500 short tons of ammo.<sup>9</sup> To say that the outloading was rushed and incomplete would be a gross understatement. The vessels had not left sight of the English homeland before helicopters were already slingloading additional supplies to their decks.<sup>10</sup>

The rapid outload started the logistical pipeline to the South Atlantic in motion. To keep the pipeline filled with supplies and to compensate for the three-week minimum sailing time to the South Atlantic, it became essential to load and sail numerous other support vessels in coming weeks on a regular basis. And doing so required substantially more ships than the Ministry of Defence had available. Consequently, ships were requisitioned to support the war effort. These ships taken up from trade (STUFT) were refitted for a variety of uses in miraculously quick time. Canberra, for instance, had just returned to England from a 96-day world cruise. Within sixty hours after fare-paying passengers disembarked, workers had completed substantial modifications to suit military needs so that Canberra could sail with 2,000 members of 3 Commando Brigade.<sup>11</sup> The requisition-conversion time of STUFT became one of the most impressive achievements of the war, the average time to convert merchants being 72

hrs. for 95% of the work required.<sup>12</sup> In all, about fifty STUFT entered the Task Force to augment Royal Fleet Auxiliary and other support vessels, providing a total of seventy support vessels to sustain approximately forty warships, on-board aircraft, and a land force of 10,000 men.<sup>13</sup>

### **Providing Operational Sustainment**

The fast outloading of supplies and the requisition/modification of STUFT were impressive feats, to be sure. Hidden within the hulls of many Task Force vessels, however, was a nightmare that would haunt operational sustainment for the duration of the campaign. In their rush to get forces in motion, the British had sacrificed logical loading plans and inventories. At the bottom of some vessels, hidden beneath tons of less important supplies, were items that would be sorely missed after commandos and parachute infantrymen landed on East Falkland. Restowage enroute could solve part of the problem, but not all of it. Too much had been loaded too fast--and too little attention given to what supplies would be needed first.

The responsibility for sorting out this confusion fell to Commodore Michael Clapp, who as Commander Amphibious Task Group was responsible for coordinating and planning logistic requirements for the Task Force for the duration of the war. Clapp's peacetime staff of four had grown considerably upon deployment, but few of the individuals had ever worked with each other before.<sup>14</sup> To help him from the strategic level would be a tri-service Logistic Support Cell in Task Force Headquarters at Northwood; this cell would prove invaluable in coordinating the shipments from England to the Task Force.<sup>15</sup> To help him and his staff in operational planning,

specifically that pertaining to support of ground forces, would be Commando Logistic Regiment of 3 Commando Brigade, whose commander and staff had gained considerable experience in remote supply operations in the fjords of Norway.<sup>16</sup> Once in the Falklands, Commando Logistic Regiment would be responsible for providing tactical-level sustainment to ground forces.

Most attention during the initial days of April focused on the outload of forces. As a result, little time was available to confront the details of how the campaign would be sustained operationally. On 1 April, however, key deployments had already started that were vital to operational sustainment. Before land forces had even received alert notices, lead elements of what would eventually become British Forces Support Unit Ascension Island (BFSUAI) were apparently landing at Ascension.<sup>17</sup> BFSUAI assumed and maintained a key role in operational sustainment during the war in that it controlled replenishment operations at Ascension Island, the first destination of the Task Force enroute to the South Atlantic.

After embarkation on 5 April, operational planning started in earnest. Although many details of the planning process are unknown, enough are available to indicate that less than desirable conditions existed for thorough sustainment planning. LTC Ivar Hellberg, commander of Commando Logistic Regiment, was charged with developing the concept for providing operational sustainment to the land forces.<sup>18</sup> He and his staff sailed aboard the LSL Sir Lancelot.<sup>19</sup> Commodore Clapp and his staff, as well as the command group of 3 Commando Brigade, sailed aboard the LPD Fearless and were attempting to determine landing locations, force and support requirements, location for support vessels, medical evacuation

requirements, etc.<sup>20</sup> Radio silence had been imposed upon embarkation.<sup>21</sup> Consequently, coordination became nearly impossible. The marine staff aboard Sir Lancelot found itself planning independently of Clapp's staff aboard Fearless.

Aboard Sir Lancelot, Hellberg concluded enroute to Asencion that there were two possible options. The first called for the entire land force to be employed at one location. According to this option, sustainment would occur from two LSLs, the first held close ashore to support the land battle, the second in reserve further out to sea with other support vessels. Each would carry two days of supplies, with separate command and control teams, workshop detachments and ordnance detachments.<sup>22</sup> This echelonment of LSLs would permit the British to maintain a constant stream of supplies to beachheads. As one LSL emptied stores and returned to support vessels for replenishment, the other would take its place. Thus, an LSL would always be in position to serve as an off-shore operational supply base for land forces. Facilities and services in the Brigade Support Area ashore would be kept to a minimum: a dressing station to provide life-saving treatment for casualties before evacuation to Canberra, which, like one of the LSLs, would remain in close proximity offshore; a workshop detachment for maintenance; an ordnance detachment to control the supply buildup; an amphibious beach unit and land zone marshalling team to control movement of watercraft and helicopters bringing supplies into the beachhead; and an infantry company for defense.<sup>23</sup> The second option assumed two separate amphibious landings, thus entailing requirements for two separate sustainment operations. In this case, one LSL would support each of the landing sites; the Brigade Support Area would be the same as that for option one and, presumably, would provide further support to

forces at the other landing site through establishment of a Forward Support Area.<sup>24</sup>

Meanwhile aboard Fearless, planners evaluated nineteen possible landing sites to find one that could serve both tactical and support requirements.<sup>25</sup> Given the largely untrafficable terrain of East Falkland, it was desirable to have landing sites that offered short LOCs supporting advances toward Stanley. Beach gradients had to be sufficient to support landing craft; an anchorage had to be available that would offer protection against air and submarine attacks. Cow Bay/Volunteer Bay, Berkeley Sound, and San Carlos became the final three choices, and attention focused on drafting landing and support concepts for each.<sup>26</sup> Shortly after the Task Force reached Ascension, the decision was made for all of 3 Commando Brigade and attachments to land near San Carlos. San Carlos offered good landing beaches, a well protected anchorage supplemented by surrounding hills, few Argentine defenders, but also the greatest land distance (about fifty miles) to Stanley, the capital, where over 10,000 Argentinians were located.<sup>27</sup> Based on the amount of logistical preparation that was necessary, it was agreed that the earliest possible landing on East Falkland would be 14/15 May.<sup>28</sup>

While this planning was underway, the BFSUAI at Ascension Island had already satisfied one of its first missions as a forward support base. It had helped replenish vessels of Rear Admiral Woodward's Carrier Battle Group, which had started to rendezvous at Ascension around 12 April enroute to establishing a 200-mile Total Exclusion Zone (TEZ) around the Falklands.<sup>29</sup> As this was taking place, thousands of tons of additional supplies were also being flown into the island for the Amphibious Task Group upon its arrival.

Ascension Island was not exactly the ideal location for a forward support base. About seven miles in diameter, it was known for its razor sharp volcanic rocks, dust, and limited resources.<sup>30</sup> Lack of fresh water and billeting on the island restricted the number of support personnel that could be stationed there to about 1,000.<sup>31</sup> Long, South Atlantic swells beat the rocky coastline incessantly, making the beaching of conventional landing craft all but out of the question except at a cove called English Bay, which offered a protected area wide enough for one LCU.<sup>32</sup> No ports existed on the island; all supplies arriving by sea had to be transported from ships by helicopters or by lighters to a jetty near Georgetown, the capital.<sup>33</sup> Fuel storage and pipelines had limited capacities; roads from the jetty to the airfield were steep and in need of repair.<sup>34</sup> The 11,000-foot Wideawake Airfield on the island, which Britain had been leasing to the U. S. for use in the space program, was no more ideal. Volcanic dust near the airfield prevented the landing of helicopters except on the asphalt apron, which was so small that only 24 multi-engined aircraft could be accommodated.<sup>35</sup>

Despite these drawbacks, Ascension soon proved invaluable. Accustomed to about 250 landings a year, Wideawake would witness 2,500 fixed wing landings during the next three months.<sup>36</sup> The island afforded the British an opportunity to rectify some of the problems created by the hasty creation and outloading of the Task Force. Of prime importance was the restowage of supplies that had been so haphazardly cast aboard vessels upon departure--and specifically, restowage that would coincide with landing plans that were being developed enroute. Additionally, commandos needed to practice unloading from transport vessels into landing craft and conducting beach assaults. Although only one beach was available, it would

prove critical to this training. Clapp's Amphibious Task Group started to arrive at Ascension around 14 April. Much work awaited logisticians. Some vessels arrived far below their watermarks; others arrived completely empty.<sup>37</sup> For nearly three weeks thereafter, logisticians attempted to restow equipment the best they could and to assist soldiers practicing beach assaults.

Finalization of sustainment plans occurred as the Amphibious Task Group sailed south from Ascension. It became necessary again to separate the planning staffs, Hellberg and his Commando Logistic Regiment leaving Ascension on 1 May, several days ahead of the main Amphibious Task Group, because of the slower speeds of LSLs transporting the Regiment.<sup>38</sup> Simple changes to support plans now meant considerable work with little time available. For example, the sustainment plan originally called for LSLs to discharge their cargo directly onto beaches near San Carlos; the plan changed, while LSLs were sailing south from Ascension, to preclude the possibility of LSLs drying out on beaches. Now, LSLs were to unload stocks from stern doors to mexiflote lighters, which would transport stocks to beaches. As a result of this seemingly simple change, stores had to be shifted from bow to stern, largely by hand, to accommodate the new plan--no small feat considering the treacherous South Atlantic seas.<sup>39</sup>

The final operational sustainment plan was relatively unchanged from Hellberg's original intention for LSLs to support one beachhead and be backed up by other LSLs, the main difference being that lighterage and helicopters would be the main means for discharging vessels. Further out at sea, on the northeast edge of the TEZ to provide maximum distance from the Argentine mainland, was a Tug, Repair and Logistic Area (TRALA) where support vessels could receive, hold, and transfer supplies and conduct



battle damage repair of vessels.<sup>40</sup> Basically, the TRALA would constitute a second and southernmost forward support base that was to be protected by the Carrier Battle Group. Dispatch vessels would ply the waters constantly between the other forward support base at Ascension and the TRALA, maintaining a constantly-flowing supply channel between the two bases.<sup>41</sup> C130s would airdrop supplies of higher priority to support vessels near the TRALA and to other vessels enroute.<sup>42</sup> From the TRALA, LSLs would deliver and discharge supplies to tactical units on the beachheads.

Maintenance of Task Force vessels was initially planned to take place at South Georgia, an island located about 800 miles east which British commandos captured on 25 April and which offered a protected anchorage. Planners later conceded, though, that South Georgia was too distant to be responsive to Task Force needs.<sup>43</sup> Consequently, maintenance was performed mostly in the TRALA; South Georgia was used primarily as a stopover location for forces arriving later and requiring time for restowage.

About 15-30 km north of Pebble Island was to be a protected area for British and Argentine hospital ships. The initial British plan called for Canberra to be located just off the beachheads and to receive casualties from the limited medical facility ashore. Canberra would then take casualties to Uganda, the only ship to be used exclusively as a hospital and thus the only one to be protected under the Geneva Convention, in the protected area. Dispatch vessels would then transport casualties, if necessary, to Montevideo, Uruguay, for subsequent airlift to Ascension and back to Britain.<sup>44</sup> (See maps on pp. 38-9 for illustrations of the operational sustainment plan.)

The amphibious landing plan called for eight LCUs and eight smaller craft to lift approximately 1,200 commandos from the amphibious group in the first wave to the San Carlos area before daylight on 21 May, with 3 Para and 42 Commando landing near Port San Carlos; 2 Para and 40 Commando near San Carlos; and 45 Commando on a beachhead at Ajax Bay, which was to become the Brigade Support Area.<sup>45</sup> The logistical buildup ashore would commence as soon as beachheads were established, but would be kept as small as possible since LSLs would keep a steady supply of stores immediately off shore at all times. Establishment of facilities ashore to refuel Harriers was deemed critical since station time could be substantially increased if Harriers did not have to travel from carriers in order to support the land war.<sup>46</sup>

Achieving complete surprise, marine and paratroop infantry units landed against no opposition and had secured all areas by daybreak of 21 May. By 1000 hrs. that morning, however, Argentina proved that it had not conceded air superiority to the British; Argentine pilots unleashed Exocet missiles into several Task Force vessels in the narrow waters surrounding the beachheads.<sup>47</sup> Without the air superiority originally anticipated, the operational sustainment plan providing for a close-in, floating supply base was put to shambles. Clapp concluded that to keep LSLs in the narrow waters of Falkland Sound without air superiority was too risky. Accordingly, he issued orders that LSLs were to unload as much stocks as possible into the Ajax beachhead, depart those waters, apparently for the TRALA, then return at night when more stocks could be moved ashore under cover of darkness.<sup>48</sup> Such was to be the pattern for the following days. Thus, ship-to-shore "movement of stores was agonizingly slow,"<sup>49</sup> frustrating all intentions of an early breakout toward Stanley.

The decision to move supply vessels out to sea by day affected sustainment plans in a variety of other ways. With respect to establishing a refueling facility ashore, it precluded the possibility of keeping a tanker immediately offshore to provide on-tap fuel supply. Emergency fuel handling equipment started to come ashore by 23 May for use in construction of an on-shore refueling capability,<sup>50</sup> but the system was not operational until the first week in June.<sup>51</sup> Similarly, engineers had difficulty in getting supplies ashore that were essential to constructing an 860-foot airstrip for use by Harriers. Not until 5 June was the first air strip and refueling site completed.<sup>52</sup> Consequently, for two weeks prior to completion of the air strip, ground attack aircraft had to fly about 200 miles from their carriers before engaging targets.<sup>53</sup>

Substantial modification of the initial medical evacuation plan also became necessary. Instead of a mere clearing station ashore, it now became essential to establish a field hospital since it would not be safe for Canberra to remain near the beachheads. Unfortunately, the lack of time for discharging supplies, coupled with the inability of planners to know where everything was, meant that much of what was needed never got ashore. In fact, a complete dressing station and surgical support team was unintentionally left on board Canberra, not to be seen again until Canberra brought 5 Brigade from South Georgia to East Falkland on 1 June.<sup>54</sup>

The sinking of Atlantic Conveyor, a STUFT modified to be a helicopter carrier, on 25 May provided additional complications. Lost were three Chinook and two Lynx helicopters, tents for 4,000 men, emergency fuel handling equipment, and desalination equipment, among other items.<sup>55</sup> That left sixteen helicopters to support ship-to-shore discharge operations as well as requirements of combat units.<sup>56</sup> Of these, one had to be

allocated daily just to take fuel to Rapier batteries surrounding the beachheads; four others were equipped with passive night goggles and thus had to be reserved exclusively for night operations.<sup>57</sup> Consequently, only six Sea King and five Wessex helicopters remained to support most daytime operations.<sup>58</sup> Mexiflotes could assist in the discharge operations, and in fact accounted for about 75% of all stores moved,<sup>59</sup> but they could not contribute to the inland movement of supplies. It required about 85 Sea King sorties just to move one 105mm light gun battery with its ammo, and the British had four batteries to move!<sup>60</sup> As a result, the buildup took far longer than expected. Brigadier Thompson, the land force commander, and Commodore Clapp, who had responsibility for getting supplies ashore, were under constant pressure to "get on with it." Unfortunately, there was only so much they could do with limited assets. Argentine air attacks had basically tied their hands for a period of time by limiting the number of hours and helicopters available for unloading.

Breakout from San Carlos beachheads finally occurred on 27 May with marine and paratroop infantry units advancing east toward Teal Inlet and south toward Darwin and Goose Green. By early June, these units had advanced to within ten miles of Stanley and had secured an area around Fitzroy to be used as a Brigade Support Area by 5 Brigade, which departed Southampton as a follow-on force on 12 May. The arrival of 5 Brigade brought additional but not new concerns.

Even though it had departed Britain substantially later than 3 Commando, 5 Brigade was no better off in terms of load planning. Its stocks had also been loaded without due consideration for what would be needed first.<sup>61</sup> Although it stopped at South Georgia for restowage enroute, that was largely so personnel and equipment aboard Queen

Elizabeth 2 could be transferred to Canberra, the British government not wanting to endanger further the cruise ship. When Canberra arrived at San Carlos with 5 Brigade on 1 June, logisticians faced the same problems experienced when offloading 3 Commando stores--much of what was needed first was inaccessibly located at the bottom of ships. As a result, the slow offload process began all over again and was made worse by the lack of helicopter transport.

Attention soon focused on the best and fastest way to get 5 Brigade to Fitzroy so that it could join in the battle for Stanley. Lack of sufficient helicopters "precluded the option of airlifting the bulk of 5th Infantry Brigade"<sup>62</sup> as was originally planned, at least in a short period of time. And operational planners had been warned that unless the war was over by 21 June, air support would have to be reduced by 50% at that time in order to permit essential maintenance to be performed.<sup>63</sup> As a result, decisions were made to continue giving priority of helicopters to support the buildup of 3 Commando in forward areas and to move 5 Brigade and its stores by sea from San Carlos to Fitzroy.<sup>64</sup> On 8 June, however, Argentine pilots bombed the LSLs Sir Galahad and Sir Tristram while 5 Brigade soldiers were disembarking with their equipment near Fitzroy, killing more than fifty soldiers and frustrating further the British sustainment plan.

The disaster at Fitzroy involving Sir Galahad and Sir Tristram severely constrained sustainment until the final battle for Stanley. The British were forced to support both 3 Commando Brigade and 5 Brigade from a common support area at Ajax; they were also compelled to delay any final assault on Stanley until adequate supplies could be moved forward by the limited helicopters available. The next days found Commando Logistic Regiment desperately trying to move stocks as quickly as possible from

Ajax to tactical units. Not until 12 June did Major General Jeremy Moore, who replaced Brigadier Thompson as land force commander when Moore arrived with 5 Brigade, conclude that sufficient stocks were positioned forward to warrant an assault on Stanley.<sup>65</sup> The assault started that night. Less than two days later, Argentinians surrendered there to end the war.

### **Observations about the British Experience**

One British participant in the Falkland Islands War has stated that "The logistic chain was one of the wonders of the modern world. We destroyed an air force, captured an army, and caused the downfall of a Dictator, while we were eating fillet steak and fresh fruit which had travelled 8000 miles."<sup>66</sup> Although not all participants would agree with this assessment of operational sustainment achievements during the war, few could disagree that British logistics was marvelously successful given the many obstacles that had to be overcome. Despite the inevitable stresses and risks inherent in waging war so far away, the British made their logistics system work.

Several issues emerge from the British experience in providing operational sustainment during the Falkland Islands War that are important for the U. S. military to consider when planning or conducting operations to remote areas. Comprehensive review of all logistics issues is outside the scope of this paper. Accordingly, the most important are discussed below in the following categories: Centers of Gravity; Air Superiority and Operational Sustainment; Forward Basing; Logistics-Over-The-Shore

Operations; Protecting Future Sustainability; and Improvisation.

### **Centers of Gravity:**

In his On War, Clausewitz specifies that each combatant in war has a center of gravity that affects all its combat power. As he indicates, "... one must keep the dominant characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed."<sup>67</sup> Theoretically, one's center of gravity is that point which, if successfully attacked by the enemy, can lead to irretrievable defeat.

Considering the logistical situation of the British during this war, it seems clear that operational sustainment comprised their center of gravity; it also seems clear that the British recognized this and continually took steps to make their center of gravity less susceptible to enemy attack. With nearly 4,000 miles separating combat forces in the South Atlantic from the forward support base at Ascension island, and another 4,000 miles separating that base from depots in Britain, the British remained vulnerable to any sustained blockage in lines of communication to the combat zone since, at bare minimum, it would take three weeks for resupply to occur. As a result, they had to be concerned with "nodes" in the supply pipeline that, if destroyed, would significantly affect sustainment.

Of constant concern were the forward support base at Ascension Island and the floating supply base in the South Atlantic. Although Ascension was never threatened during the war, the British did not discount the

possibility that Argentina could cause considerable disruption to the operation there. Accordingly, at the slightest hint of Argentine interest near Ascension, the British took care to protect their interests. During the period 6-10 May, they instituted measures to protect Ascension when an Argentine freighter was sighted 120 miles south of the island.<sup>68</sup> Harriers and Phantoms were taken from Task Force vessels destined for the South Atlantic and deployed instead in air defense roles at Ascension;<sup>69</sup> an early warning radar system was established;<sup>70</sup> and, on 10 May, a 100-mile control area was enforced around the island, similar to the TEZ surrounding the Falklands.<sup>71</sup> The British notified international authorities that any passage into this control area required prior notification.

Selection of the San Carlos landing site and changes to operational sustainment plans after the landing also reveal British concern for the vulnerability of their sustainment system further south. San Carlos was selected, despite its undesirable distance from the main Argentine forces at Stanley, largely because it afforded protection to logistics vessels that would be vulnerable during the ship-to-shore supply buildup. Ajax Bay protected vessels from submarine attack, while surrounding hills offered good locations for Rapier air defense systems to thwart Argentine air strikes. Similarly, the decision to place the TRALA on the northeast corner of the TEZ was no coincidence. By locating it there, the British kept their vital support vessels out of reach of Argentine aircraft flying from the Argentina mainland.

The decision to withdraw logistics vessels from Falkland waters during daylight hours, following air attacks on the morning of 21 May, was also designed to protect the ability of the Task Force to provide continual sustainment to land forces and to protect limited logistics assets. The



effects of this withdrawal, delaying the buildup ashore and subsequent breakout, dismayed politicians in Britain who were bent on quick victory. None of the British commanders in the South Atlantic, however, were willing to risk the continuity of sustainment just to prosecute the war at a faster pace.

The British viewed operational sustainment as their center of gravity, and they took great care to protect large critical nodes in that sustainment system. It appears, however, that they overlooked the possibility that components or services within their sustainment system could possess centers of gravity of their own--which, if destroyed or disrupted, could affect not only that component but the entire operational sustainment system. Loss of the Atlantic Conveyor is one example. Aboard the Atlantic Conveyor was a concentration of stocks vitally important to the British war effort. Although they knew beforehand that helicopter transportation would be critical to the sustainment process, the British left themselves extremely vulnerable by permitting nearly all their heavy-lift helicopters to be concentrated, and subsequently lost, on a single vessel. With winter fast approaching, loss of all the tentage for the Task Force may have had an equally deleterious effect given different circumstances.

A comparable example presents itself in the British medical support plan. Successful medical treatment and evacuation hinged around Canberra, clearly the center of gravity of the initial plan and the first place casualties would receive comprehensive care. Canberra was also to be used to transport casualties to Uganda in the protected area as necessary. It is important to note that, according to British and Argentine agreement, any casualties taken to Uganda could no longer participate in the war.<sup>72</sup> Thus,

Canberra had an additional role of being the "buffer" in a mend-or-lose evacuation system. Consequently, once Argentine air attacks forced Canberra's withdrawal on 21 May, viability of the medical support plan was shattered. The clearing team ashore would have had to evacuate all casualties to the Uganda, which meant none would see action again. Since the British plan failed to dedicate any helicopters for medical use,<sup>73</sup> this evacuation would have been difficult, given the distance from Ajax to the protected area and assets available.

In effect, Argentine air attacks on 21 May destroyed the center of gravity in the medical component of the operational sustainment system. What had to happen--and what did happen--was placement of a field hospital ashore to be run by Medical Squadron of Commando Logistic Regiment. Strangely enough, operational planners did not see the importance of the field hospital. Reports indicate that the decision was made to establish the field hospital only after terse arguments by a tactical-level medical commander. Supposedly he risked court-martial in the process,<sup>74</sup> but in so doing, he insured the British could adequately care for their casualties.

Today, it is not uncommon to think of a center of gravity in terms of logistics. In fact, the latest draft of FM 100-5, Operations, leaves no doubt that logistics will frequently be involved in a combatant's center of gravity: "Campaigns will often be limited in their design and execution by the support structure and resources of a theater of war. Almost as commonly, the center of gravity of one or both combatants will be found in their support structures, and in those cases major operations or even entire campaigns may be mounted to destroy or defend those structures."<sup>75</sup> If the Falkland Islands War is taken as an example, it seems clear that U. S.

Army doctrine is indeed correct, particularly when it comes to conducting operations in remote areas. The British never lost sight of the vital importance of logistics to conducting war so far away from their homeland. They had a macro view of logistics being their center of gravity, and they judiciously protected vital nodes. It also seems important that a micro view was needed as well. With so many components comprising operational sustainment and essential to preserving combat power, planners can ill afford to let one stifle the entire sustainment system.

### **Air Superiority and Operational Sustainment:**

Establishing and maintaining air superiority has long been regarded as an essential element in war fighting. AFM 1-1, Basic Aerospace Doctrine of the U. S. Air Force, for instance, indicates that the "most precious thing aerospace forces can provide for an army or navy is control of the aerospace environment, since this enables surface forces to carry out their own plan of action without interference from an enemy's aerospace forces."<sup>76</sup> FM 100-16, Support Operations: Echelons Above Corps, goes so far as to state that early achievement of air superiority is "essential to the success"<sup>77</sup> of contingency support operations. There can be little doubt that the Falkland Islands War reiterated the importance of both these statements regarding air superiority and operational sustainment to remote areas. The British expected to establish air superiority early on. They failed to do so, and as a result, they had to alter dramatically their operational sustainment plan.

Planning for operational sustainment proceeded under the assumption

that once the Amphibious Task Group reached the South Atlantic, the Battle Carrier Group would have established British air superiority at least in the vicinity of amphibious landing sites. Implicit in both support options developed enroute was the assumption that logistics vessels would be free to operate close to shore during all hours of the day without threat of air attack, the basic difference between the two plans being the number of sustainment bases to be afloat immediately off shore. The first option called for one; the second, two. Whether such assumptions were reasonable is debatable, particularly in view of the ability of Argentina to project air power anywhere on the Falklands, not only with locally-based Pucarás, but also with mainland-based Mirages and Super Etendards.<sup>78</sup> In either case, what remains apparent is that the British did not fully anticipate the delays that would result when their assumption proved false. Sporadic Argentine air attacks slowed the buildup ashore to such an extent that it took nearly a week before sufficient supplies could be accumulated to justify the breakout of a force about 2,000 strong; and it took an additional week before a relatively low-volume refueling point could be established at San Carlos. Lack of air superiority slowed considerably the discharge and buildup process; loading problems created by the hasty departure from Britain made matters worse. In the meantime, many politicians on the homefront were yelling for commanders to "get on with it."

In spite of these delays, the situation could have been far worse. As Rear Admiral Woodward has admitted, the Argentinians overlooked British vulnerabilities: "That we failed to achieve air superiority before the landings and that we stood to lose several ships was well recognized; that it would be the escorts we lost rather than the amphibious shipping was a stroke of luck and probably the enemy's single biggest mistake. Frigates

and destroyers were the only types of military kit we could replace quickly.<sup>79</sup> Argentine air attacks on D-Day were not aimed at logistics ships. Had they been, the bulk of 3 Commando Brigade's first-line ammo, fuel, and rations, not to mention Task Force lighterage that was being carried on the decks of LSLs, would have been lost. Examples of British "luck" abound. On 24 May, the LSLs Sir Lancelot and Sir Galahad were hit by two bombs each, none of which exploded. One bomb that struck Sir Lancelot skipped off the water, entered and passed through the vessel's structure, reentered the water on the other side, and still did not explode.<sup>80</sup> On 27 May, twelve bombs struck the Brigade Support Area at Ajax, but only four exploded.<sup>81</sup> It is now estimated that fifty percent of bombs dropped by Argentine pilots failed to detonate because pilots released them too late for fuses to activate.<sup>82</sup> Had Argentine pilots effectively attacked British logistics, the outcome of the war might have been different--and the war may have ended long before June 14.

Sir Galahad eventually ran out of its luck at Fitzroy. What happened there provides a capsule view of what can happen to operational plans without air superiority. Argentine pilots attacked Sir Galahad on 8 June. In doing so, they thwarted the British ability to move supplies forward to such an extent that it was not until 12 June that sufficient stocks were in place to justify an advance on Stanley.

One could come to a conclusion, after brief review of the Falkland Islands War, that initial air superiority is not that important to conducting operations in remote areas. After all, the British did not have air superiority when the initial landings took place on 21 May, and yet they won the war. Prudent planners, however, would not come to such conclusions, particularly after considering the buildup delays that resulted

for the British and the amount of luck they required. The British experience clearly reveals the importance of air superiority to operational sustainment to remote areas; it also reveals the chaos that can result if planners blithely anticipate that air superiority will exist when their forces arrive. Moreover, the Falkland Islands War underscores the importance of commanders and planners thinking what they will do if air superiority is not present. It would appear that the British failed to look beyond their assumptions. As a result, they may have succeeded less on the strength of their own planning and more on the weakness of their enemy's.

#### **Forward Basing:**

Prior to the start of the war, Ascension Island was regarded by the British as little more than an inhospitable outcrop of volcanic rock somewhere in the South Atlantic. By the end of the war, however, many came to regard it as one of the major reasons for British success. Major General Moore, for one, alluded to its importance with his remark, "Ascension rapidly became the centre of a colossal stores distribution network, which must be one of the major, if unglamorous achievements of the entire campaign."<sup>83</sup> Moore's comment, if anything, is an understatement. It is doubtful whether the British could have projected any credible combat power to the South Atlantic without this island. The critical role served by Ascension during the war underscores the importance of having forward support bases available and in operation as soon as possible when conducting operations in remote areas.

Ascension offered several benefits to the British, the most obvious, of

course, being its effect on lines of communication. Although it was not that close to the Falklands, Ascension nonetheless permitted them to halve the distance between their homeland and the battlefield. The existence of Wideawake Airfield there, despite its limited capability, permitted the British to reduce significantly order-receipt time for all supplies. Cargo travelling via sea line of communication (SLOC) to Ascension took ten days compared to slightly more than ten hours if travelling via air line of communication (ALOC).<sup>84</sup> Consequently, the British were able to get supplies half way to the Falklands much quicker than by SLOC, and they took advantage of it. They airlifted more than 6,000 tons into Wideawake by mid-June for transshipment further south.<sup>85</sup> Then, by using smaller and faster dispatch cargo vessels to transport cargo beyond Ascension, they were able to reduce further transit times to the TRALA for lower priority items.

Perhaps the most significant advantage of Wideawake, however, was the dramatic effect that it had on the line of communication from Ascension to the Falklands. Wideawake provided the British an ability to airdrop supplies, without which they would not have been able to provide high priority items expeditiously to the Task Force. Even with Ascension, airdropping supplies was no easy task because of the tremendous distance remaining to the Falklands.

The C130 Hercules aircraft to be used could carry a 15,000 lb payload about 2,000 miles before refueling.<sup>86</sup> This meant that without refueling in the air, they could travel only about 1/3 the distance to the Falklands before returning to Ascension. Substantial modification thus became necessary to increase the range of the aircraft. The British installed internal tanks in the C130s, but still found they had to modify C130s to

accept air-to-air refueling from Victor tankers.<sup>87</sup> In the end, it took a total of five Victor tanker sorties just to get one C130 to within 100 miles of the Falklands.<sup>88</sup> More importantly, though, the ability of the British to airdrop supplies into the war zone permitted them to reduce order-receipt time for high priority items from about two weeks to less than two days. Reports indicate that 44 such drops were conducted during the war, with cargo ranging from critical electronic components to a new commander for 2 Para after the death of that unit's battalion commander at Darwin.<sup>89</sup> By war's end, high priority cargo was being dropped near the TRALA, as close as 100 miles to East Falkland, within forty hours of request.<sup>90</sup>

Ascension also afforded the British the opportunity to compensate for their original lack of contingency planning. In essence, it provided them a sort of leverage, offering them a location where they could "buy time" for politicians while showing military resolve and making up for planning and training shortfalls in the process. Ascension proved invaluable for the restowage of supplies following the hasty outload; for the replenishment of ships travelling south, in later weeks, when oversights were still being made about requirements; and for refuelling a multitude of cargo vessels transiting to the South Atlantic and tankers needed to refuel vessels already there. *The magnitude of refueling operations alone made Ascension invaluable since many vessels in the Task Force required refueling every three days.*<sup>91</sup>

The British had little warning of the Argentine invasion, and as a result, they had little time to prepare, but they knew the importance of Ascension--and they also knew that in order for Ascension to serve its purpose they had to get combat support and service support personnel into the island very early. Lead elements of BFSUAI were stepping off planes at



Wideawake about the same time that the first members of 3 Commando Brigade were being alerted for deployment. Consequently, work on facilities and receipt of cargo took place at Ascension several days before the first ship sailed from England, such that when lead vessels of the Task Force arrived, Ascension was indeed able to operate as a forward support base. Had the British not started deployment of BFSUAI as quickly as they did, it is likely that Ascension could have served as a brake for operational sustainment early in the war.

FM 100-5, Operations (Final Draft), states, "Time spent in deliberate preparation--moving units and stockpiling resources--can result in a greater operational capability in the future."<sup>92</sup> This is certainly true with respect to forward support bases and the British experience during the war. Forward support bases, to be effective and to guarantee timely sustainment, cannot be treated as an afterthought. There can be little doubt that much of what transpired during the Falkland Islands War in terms of operational sustainment was not deliberate, or in some instances, even carefully planned. Such cannot be said, however, about Ascension and the forward support base established there. The British seemed to appreciate, from the start, that projecting combat power required something between their homeland and the Falklands to lessen sustainment burdens caused by distance.

### **Logistics-Over-The-Shore Operations:**

One of the most frustrating aspects of operational sustainment for the British was the "agonizingly slow" movement of supplies from ships to

shore. They had expected to start their advance toward Stanley within a couple of days. Instead, nearly a week passed before the land force commander felt confident that sufficient supplies were in place to justify a breakout. Argentine pilots deserve considerable credit for this delay, their initial air attacks forcing an operational-level decision that confined unloading to hours of darkness or about fifteen hours a day.<sup>93</sup> But several other problems were built into the Task Force from the start, only some of which were correctable at Ascension.

Much of the slow buildup of supplies into the Brigade Support Area at Ajax Bay was attributable to the haste with which the Task Force had departed Britain and the inability to restow all that was needed at Ascension. Without complete manifests, logisticians found themselves unable to determine locations for some supplies. Even when they knew the locations of others, they were unable to get at them since, in the haste to deploy forces quickly, little attention was given to what supplies would be needed most by combat units. One Air Corps squadron, for example, had its necessary stores distributed between seven different vessels, and no records were available to indicate what stocks were on which ships.<sup>94</sup> As a result, ship-to-shore discharge approximated the initial outload in terms of its confusion--not knowing what was needed, stevedores had to offload as much as they could as fast as they could. The net result was that many supplies not needed were sent ashore, consuming not only assets but time. Additionally, Commando Logistic Regiment had to allocate time and personnel to re-sort the supplies once ashore before operational plans could be finalized. Meanwhile, tons of other supplies that were desperately needed sat at the bottom of holds throughout the war, simply because stevedores could not get at them or did not know they were there.

Exacerbating the logistics-over-the-shore (LOTS) operation further were other constraints caused by the many STUFT in the Task Force. Transporting supplies from the STUFT was difficult and slow. Most were non-self-sustaining vessels that required fixed port facilities to discharge their containerized cargo.<sup>95</sup> Without such facilities available, large containers had to be broken down aboard the vessels into smaller packages that could then be transported to shore, thus necessitating time-consuming double handling of cargo.<sup>96</sup> Other STUFT presented unique problems. For instance, logisticians found that stern doors on some roll-on roll-off vessels, like the Norland, could not be lowered sufficiently to reach the mexiflote lighters being used to transport supplies to shore.<sup>97</sup> By war's end, the British had learned that STUFT were no substitute for logistics ships designed for military purposes. When it came to putting equipment ashore, STUFT averaged only twenty tons per hour compared to ninety tons per hour for LSLs, a tremendous difference that would have affected the buildup even if the STUFT had been combat loaded.<sup>98</sup>

Problems created by the hasty outload and the use of STUFT were largely outside the control of operational planners. Others were not. One report states that the "operation of landing craft . . . was not a great success. They were not as tightly controlled as they might have been."<sup>99</sup> Undoubtedly, much of the reason for this was the inability of participants in the LOTS operation to communicate with each other. No communications existed between the discharging LSLs and their mexiflote lighterage taking cargo to beaches.<sup>100</sup> On some occasions, LSLs were ordered elsewhere while discharging operations were in progress. With no communications existing between LSLs and lighterage, lighters lost all contact with their mother ships. Even when in the area together, discharge ships frequently

lost track of lighter locations. More astounding still, apparently no communication existed between either the discharging ships or lighterage and beach control units.<sup>101</sup> As a result, Commando Logistic Regiment at Ajax and support echelons of maneuver units located at other beachheads seldom knew what cargo was arriving next.

Recently, the U. S. military has renewed efforts to upgrade its ability to conduct LOTS operations. In 1984 and 1985, for example, the Army and Navy signed Memorandums of Understanding that will lead to greater interoperability of service-owned watercraft and improved training programs.<sup>102</sup> And just last year, 3,000 soldiers, sailors, marines, and airmen participated in a joint LOTS exercise, called JLOTS II, at Fort Story, Virginia, in which a variety of new equipment was tested.<sup>103</sup> These and other initiatives have undoubtedly permitted the U. S. to strengthen its ability to project combat power to remote areas and to sustain them while there even if fixed facilities are not available. But if there is a single lesson inherent in the British LOTS experience that bears repeating and remembering, it is the tremendous potential for LOTS operations to delay the conduct of campaigns, particularly when non-military vessels are being used. It took the British about a week to amass sufficient stores ashore to justify the breakout of about 2,000 light infantrymen/marines; in the process of amassing these stores they faced only sporadic air attacks and no ground attacks. Had the campaign involved heavier forces with their much larger supply requirements, or had the enemy better exploited British weaknesses during this critical phase of the campaign, the buildup unquestionably would have taken much longer and been substantially more difficult.

## Protecting Future Sustainability:

Recognition of what happened once the British reached Stanley also yields an important lesson about providing operational sustainment in remote areas. Stanley was clearly the focal point of British attention, as it should have been since the bulk of all Argentine forces was concentrated there. Accordingly, operational sustainment focused on supporting a single battle. Given a different situation, though, perhaps with a comparably large enemy force on West Falkland, the British may have had to transition rapidly after the victory at Stanley to another battle in a different location. Such transitioning poses challenges to operational sustainment that are not unique to operations in remote areas; however, transitioning is perhaps more critical in remote areas because it occurs at a time when already fragile lines of communication are literally at a breaking point.

Approximately fifty miles of untrafficable terrain separated Stanley from the Brigade Support Area at Ajax, where the majority of land force stocks were concentrated at the time of surrender. Hundreds of tons existed in Forward Support Areas established at Fitzroy and Teal Inlet, but trafficability between those areas and Stanley was no better. When soldiers entered Stanley, having consumed much of the supplies taken with them, they were at the mercy of logisticians being able to quickly transport additional supplies to them. Preservation should have been the order of the day, as it should be on any objective, but this was not the case at Stanley. Reports indicate that uncontrolled consumption and looting "grew to epidemic proportions."<sup>104</sup> Widespread use of captured Argentine vehicles led to chronic shortages in petroleum for several days after the surrender.<sup>105</sup> Guards had to be posted to prevent British soldiers from

confiscating captured Argentine supplies.<sup>106</sup> And, contrary to provisions put forth in the Geneva Convention, the British had to destroy captured medical supplies to prevent misuse by their own soldiers.<sup>107</sup> The lack of discipline exhibited by tactical-level units at Stanley could easily have caused an abrupt halt to future operational sustainability.

What awaited operational planners was a situation that could have been disastrous. Supplies were needlessly being expended on the objective; transport assets remained scarce; and Stanley offered few more sustainment advantages than the sparse surroundings at Ajax. Damage to the airfield at Stanley precluded its immediate use, even if supply transports had the capability to reach East Falkland. STUFT were too large to enter facilities at Port Stanley, which necessitated establishment of another LOTS operation to get supplies ashore.<sup>108</sup> Emergency fuel handling equipment had to be emplaced since a pipeline did not exist.<sup>109</sup> The British even had to breach a minefield in the process of laying a new pipeline.<sup>110</sup> Additionally, water supplies were totally inadequate, necessitating establishment of water purification sites.<sup>111</sup> To make matters worse, 12,000 Argentine prisoners of war required care and provision. Bringing supplies forward to meet these demands proved to be a slow process.

As U. S. Army doctrine indicates, "sustainment planners . . . [must] visualize the entire course of a major operation or campaign while planning specifically for the phase that is under way."<sup>112</sup> As the war evolved, the British did not have to look beyond Stanley. There can be little doubt, however, that if the victory at Stanley had not produced a decision in the war, operational sustainment would have had to transition quickly from supporting Ajax to transferring supplies from Ajax or the TRALA into

Stanley. Furthermore, tactical commanders would have had to take actions to insure that their units preserved supplies while the transition was taking place.

### **Improvisation:**

Finally, the Falkland Islands War attests to the importance of people, at all levels, being able to find solutions to problems when time is critical and resources scarce. The final draft of FM 100-5 aptly indicates, "No matter how carefully commanders and planners try to anticipate events, unforeseen contingencies arise in every conflict. Enemy action, interruption of sea- or airlift, and natural disasters can all upset plans and require improvisation. . . . In such situations, normal operating procedures must be suspended, unusual sources of supplies and transportation exploited, and exceptional risks accepted."<sup>113</sup>

Reports indicate that improvisation figured prominently in the ability of the British to provide operational sustainment during the war. In fact, British readiness to improvise proved a key multiplier of combat power. Take, for instance, the air-to-air refueling that was necessary to permit airdrops south of Ascension. Even after probes were installed in C130s, the problem of refueling was still not solved since, at level flight, a C130 at full throttle could not reach the slowest speed of a Victor tanker. To compensate, the British conducted in-flight refueling while C130s were diving at full throttle. Refueling started at about 26,000 feet and sometimes was not completed until about 2,000 feet!<sup>114</sup> Or consider just a few of countless other improvisations. British soldiers filled a small

inflatable craft full of cornflake packets to help cushion an unexploded bomb that had been craned over the side of the LSL Sir Galahad.<sup>115</sup> Stevedores made a bridge between two STUFT using a mexiflote lighter, enabling them to drive vehicles and supplies from one ship to another and speed up the discharge process.<sup>116</sup> Navy divers changed the propeller of one ship while it was at sea during harsh weather.<sup>117</sup>

From the day Argentina invaded the Falklands, the British started improvising solutions that would permit them to project combat power so far south. Not having deployed large numbers of soldiers overseas for more than a decade, and even then only after a year of planning,<sup>118</sup> they unquestionably startled those who stereotype all British as ever-cautious Bernard Montgomery's. They were cautious in some respects during the war, but they also took tremendous risks throughout the entire operational sustainment process. Some would have said it was impossible to provide sustainment with the assets they had, over such great distances, even in peacetime. To provide operational sustainment during war, to do it so well and with such minimal interruption, was truly an achievement--one that required logisticians who were willing and able to improvise on a daily basis.

### **Conclusion**

Questions occasionally arise as to how much the U. S. military can learn from the experiences of others, particularly when clear disparities exist in preparedness and technology. It seems clear that the capability of the U. S.



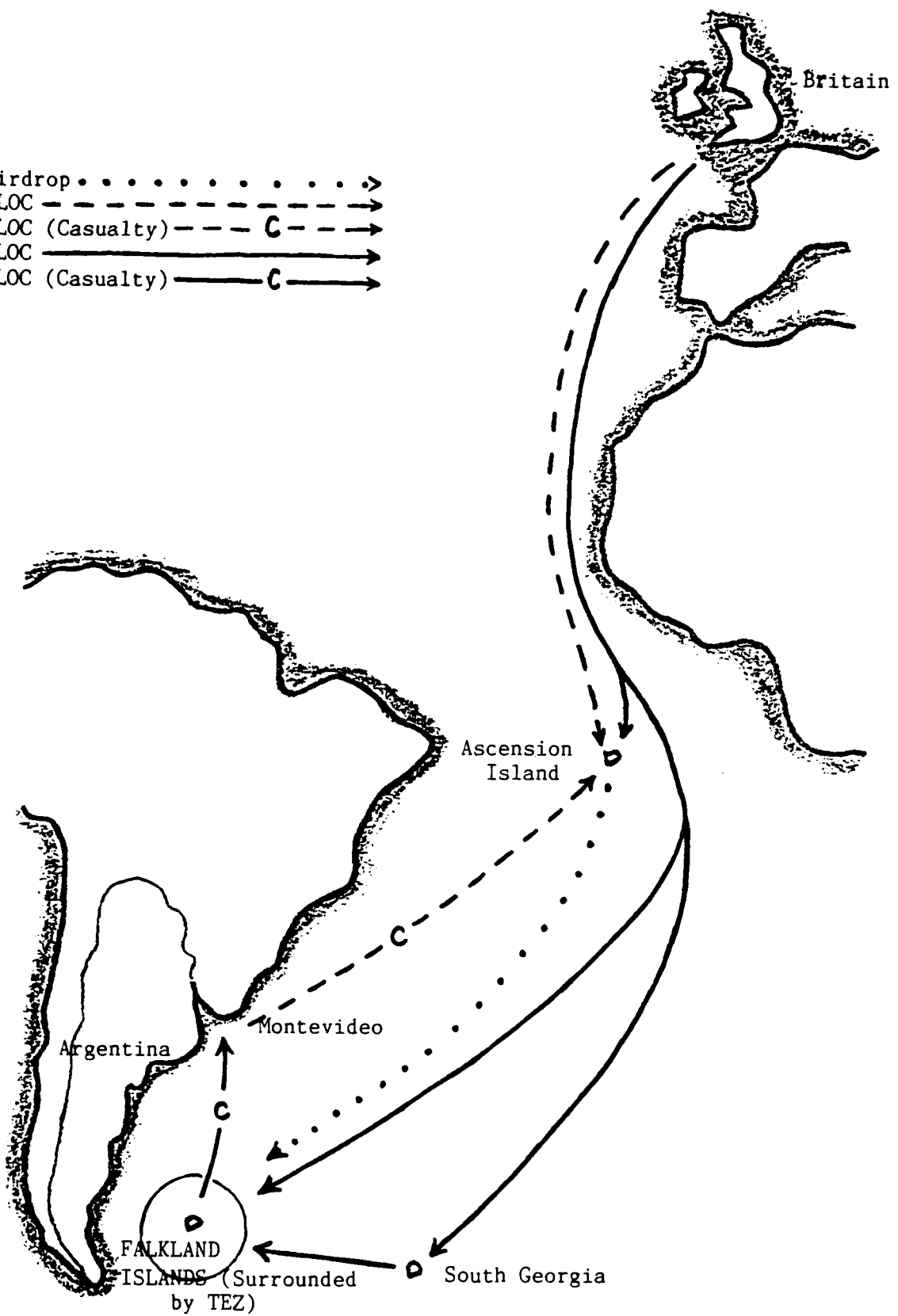
to project and sustain combat power into remote areas far exceeds that of the British. For years, the Joint Chiefs of Staff, unified commanders, and service components have been heavily involved in contingency planning for various troublespots. Host Nation Support agreements have been established in many parts of the world to assist services in overcoming the immense burdens associated with sustaining forces in remote areas. Recent activation of the U. S. Central Command evidences continuing interest in contingency planning, particularly with respect to Southwest Asia, where the presence of the Near-Term Prepositioning Fleet near Diego Garcia can ease sustainment burdens.

Perhaps the U. S. military would not be caught off guard quite like the British were when, in early April 1982, they found Argentinians occupying East Falkland and themselves without plans and adequate resources. Operational planners would be ill-advised, however, to consider the Falkland Islands War as some type of aberration that could not happen to the U. S. military. It is dangerous, for example, not to recognize the parallels between Diego Garcia and Ascension; between vessels in the Near-Term Prepositioning Fleet, most of which are administratively loaded with little consideration for stock dispersal, and the Atlantic Conveyor or Canberra; or between present U. S. Central Command assumptions that these same vessels will discharge cargo in a benign environment and comparable, false assumptions in the British plans.<sup>119</sup>

At least one U. S. Army general questions some of the assumptions regarding operational sustainment and much of current contingency planning. General Paul Gorman, former commander of U. S. Southern Command, has stated: "Our structuring for wars where ports are commodious, and airfields are big and plentiful has provided redoubtable

capabilities to deliver cargoes to those foreign countries which have the seaports for RO-RO and container ships, and the long runways and parking aprons to accommodate our C-5A and C-141 behemoths. But since most Third World nations are strapped for such facilities, getting to one of the latter is not easy, and moving onward is even more difficult."<sup>120</sup> Gorman's comments speak to one aspect of the Falkland Islands War that all military planners should recognize. British logisticians awoke to the harsh reality behind these words in April 1982. They discovered, belatedly, that wars do not necessarily take place where expected or as predicted.

- Airdrop . . . . . >
- ALOC - - - - - >
- ALOC (Casualty) - - - C - - - >
- SLOC ——— >
- SLOC (Casualty) ——— C ——— >



Lines of Communication

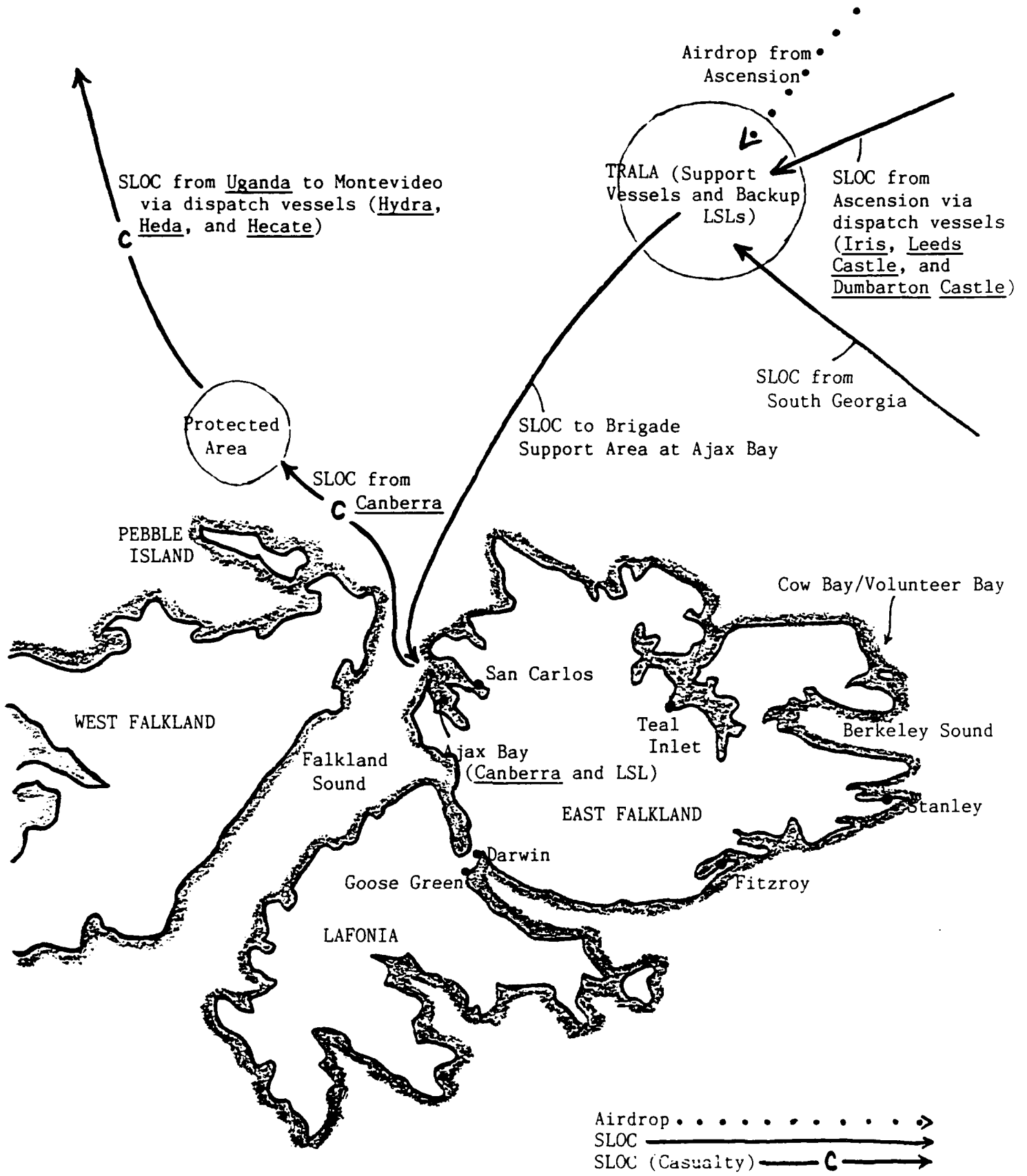


Diagram of Initial Operational Sustainment Plan

## Endnotes

1. Adrian English with Anthony Watts, Battle for the Falklands: Naval Forces, Men-at-Arms-Series (London: Osprey, 1982), p. 4.
2. MG Sir Jeremy Moore and Rear Admiral Sir John Woodward, "The Falklands Experience," RUSI (March 1983), p. 25.
3. FM 100-5, Operations (Final Draft), Fort Leavenworth, Kansas, 28 October 1985, p. 4-14.
4. Neville Trotter, "The Falklands and the Long Haul," Proceedings (June 1983), p. 108. The last time Britain had conducted a deployment exercise over any sizable distance was in 1970 when, after a year of planning, 20,000 soldiers deployed to Malaysia.
5. Charles W. Koburger, Sea Power in the Falklands (New York: Praeger, 1983), p.19.
6. W. J. Tustin, "The Logistics of the Falklands War, Part I," The Army Quarterly and Defence Journal (July 1984), p. 296.
7. Ibid.
8. The Falklands War (London: Michael Cavendish, 1983), p. 29; Valerie Adams, "Logistic Support of the Falklands Campaign," RUSI (September 1984), p. 44.
9. LTC M. J. Wellings, "The Role of the Defence Operational Movements Staff in Operation Corporate," The Royal Corps of Transport Review (March 1983), p. 9.
10. Adams, p. 45.
11. Trotter, p. 109.
12. Keith Speed, Sea Change: The Battle for the Falklands and the Future of Britain's Navy (Bath: Ashgrove, 1982), p. 123.

13. In all about 28,000 British service members participated in war.
14. Max Hastings and Simon Jenkins, The Battle for the Falklands (New York: Norton, 1983), p. 120.
15. "Despatch by Admiral Sir John Fieldhouse, GCB, GBE, Commander of the Task Force Operations in the South Atlantic: April to June 1982," Supplement to The London Gazette, Monday, 14 December 1982, p. 16111.
16. John Reed, "Commando Logistic Regiment Royal Marines," Armed Forces (May 1983), p. 180.
17. Adams, p. 44. Adams indicates that seven C130s flew from Britain on the afternoon of 1 April. Some transported naval supplies to Gibraltar; others transported air controllers and equipment to Ascension Island. English and Watts (p. 16) indicate that Royal Fleet Auxiliary tankers were also dispatched to the South Atlantic on 1 April. It is not clear what information the British had that led to these early decisions. It is interesting to note that a Navy captain initially commanded the BFSUAI; he was replaced later by an Air Force officer because of the increasing importance of airlifting supplies into and out of Ascension. Major P. M. R. Hill, "Operation Corporate--Sappers on Ascension," The Royal Engineers Journal (March 1983), p. 225.
18. LTC I. J. Hellberg, "An Experience with the Commando Logistic Regiment Royal Marines," The Royal Corps of Transport Review (March 1983), p. 16.
19. Adams, p. 45.
20. Ibid.; Julian Thompson, No Picnic (London: Leo Cooper, 1985), p. 24.
21. Adams, p. 45.
22. Ibid.
23. Ibid.
24. Ibid.
25. Thompson, p. 24.

26. Ibid.

27. Argentine leaders thought the British would not land at San Carlos because it was so far away from Stanley. They expected the British to land first on West Falkland, to attempt to establish land-based air capability there, and then to land on East Falkland. See Dr. Juan Carlos Murguizur, "The South Atlantic Conflict: An Argentinian Point of View," International Defense Review (June 1983), p. 137; Lawrence Freedman, "The War of the Falkland Islands," Foreign Affairs (Fall 1982), p. 205.

28. Hastings and Jenkins, p. 123.

29. Admiral Woodward's Flotilla had been participating in Exercise Spring Train. Those ships still at sea split into two groups depending on whether ships were seaworthy enough to make the voyage south. A twelve-hour cross-decking operation took place with northbound vessels handing all available ammunition, food and spare parts to southbound vessels, and southbound vessels returning all drill ammunition. Southbound vessels then headed to Ascension to rendezvous with other Carrier Battle Group vessels departing Britain. Ibid., pp. 84, 119.

30. Thompson, p. 16.

31. Captain R. N. Whittaker, "Combat Logistics: The South Atlantic," Air Force Journal of Logistics (Fall 1984), p. 6.

32. Thompson, p. 16. Ascension is a dependency of St. Helena, a British colony.

33. Ibid.

34. Since there was limited fuel storage on the island, the British flew in 180,000 gallon storage bladders, which engineers installed near the airfield. The pipeline connecting St. Catherine's Point, where tankers discharged their fuel, and the airfield had common discharge and reception piping, which meant that when fuel was being discharged from tankers, it could not be pumped to the airfield 3 1/2 miles away. Initially, the British transported fuel to the airfield using tankers, but the road soon proved inadequate to handle the traffic. They eventually laid a temporary pipeline to augment the pipeline already in place. Adams, p. 46; Hill, p. 226; Whittaker, p. 5.

35. Major Roderick M. Kippen, "Out of Area Logistical Support and Amphibious Operations during the Falkland Islands Crisis--Reflections, Reconsiderations, and Reinforcements," Unpublished Paper, Center for Advanced Research, Naval War College, Newport, RI, p. 19.
36. Tustin, p. 298.
37. Thompson, p. 21.
38. Thompson, p. 47.
39. LTC R. F. Grevatte-Ball, "Operation Corporate by HQ 3 Transport Group (Line of Communication)," The Royal Corps of Transport Review (March 1983), p. 19.
40. Koburger, p. 93.
41. "Logistic Support for Operation Corporate," Naval Review (October 1982), p. 269.
42. Reports indicate the British armed forces, unlike the U. S. military, had little experience in airdropping at sea. Logisticians had to fabricate containers suitable for dropping and to solve a host of other problems. BFSUAI insisted, at first, that it had insufficient personnel at Ascension to rig loads for airdrop. Thus, loads were rigged in Britain. This system proved too inflexible. As a result, BFSUAI assumed rigging functions on 6 May. Major R. C. Gardner, "47 Air Despatch Squadron, RCT," The Royal Corps of Transport Review (March 1983), p. 26.
43. "Logistic Support for Operation Corporate," p. 270.
44. "The South Atlantic Conflict: Lessons Learned (U) Findings, Conclusions, Recommendations," Report of Falkland Island Study Group to Secretary of Navy, 8 March 1983, p. XIV-3.
45. The Falklands War, p. 178.
46. LTC G. W. Field, "Operation Corporate--The Falkland Islands Campaign," The Royal Engineers Journal (March 1983), p. 234.



47. Koburger, p. 43.
48. Major W. J. Tustin, "Logistics of the Falkland Islands War, Part II," The Army Quarterly and Defence Journal (October 1984), p. 398. This source hereafter cited as Tustin, Part II.
49. Field, p. 232.
50. Ibid.
51. Ibid.
52. Ibid.
53. Ibid.
54. Hellberg, p. 16.
55. Lawrence S. Germain, "An Appendix: A Diary of the Falklands Conflict," in Military Lessons of the Falkland Islands War: Views from the United States, ed. Bruce W. Watson and Peter M. Dunn (Boulder, CO: Westview, 1984), p. 158.
56. Thompson, p. 79.
57. Ibid.
58. Ibid.
59. Hellberg, p. 19.
60. Thompson, p. 69.
61. Tustin, p. 300.
62. John Nott, "The Falklands Campaign," Proceedings (May 1983), p. 125.
63. Tustin, Part II, p. 403.
64. Hastings and Jenkins, p. 273.

65. "Despatch," pp. 16117-9.
66. Roger Villar, Merchant Ships at War (Annapolis: Naval Institute Press, 1984), p. 34.
67. Carl von Clausewitz, On War, ed. Michael Howard and Peter Paret (Princeton: Princeton Univ. Press, 1976), pp. 595-6.
68. Tustin, p. 299.
69. Ibid.
70. The Falklands War, p. 54.
71. Koburger, p. 93.
72. "The South Atlantic Conflict: Lessons Learned," p. XIV-3.
73. Ibid., p. XIV-2.
74. Robert Fox, Eyewitness Falklands (London: Methuen, 1982), p. 126.
75. FM 100-5, p. 4-1.
76. AFM 1-1, Basic Aerospace Doctrine of the United States Air Force (Washington D. C.: Department of the Air Force, 16 March 1984), p. 2-2.
77. FM 100-16, Support Operations: Echelons Above Corps (Washington, D. C.: Department of the Army, 16 April 1985), p. 1-11.
78. Koburger, p. 43.
79. Moore and Woodward, p. 30.
80. Grevatte-Ball, p. 20.
81. Rick Jolly, The Red and Green Life Machine: A Diary of the Falklands Field Hospital (London: Century, 1983), p. 70.
82. Anthony Cordesman, "The Falklands Crisis: Emerging Lessons for Power Projection," Armed Forces Journal International (September 1982), p. 35.

83. Moore and Woodward, p. 37.
84. Wellings, p. 10.
85. The Falklands War, p. 57.
86. FC 100-181, U. S. Air Force Basic Data Book (Fort Leavenworth, KS: CGSC, May 1984), p. B-8.
87. Gardner, p. 26.
88. Ibid. Each C130 required two refuelings. The Victor tanker conducting the first refueling required one refueling itself; the tanker conducting the second required two. The flights required two C130 crews on board and being airborne for up to 28 hours, which established a new world endurance record for C130 Hercules. Trotter, p. 111.
89. Trotter, p. 111; "The South Atlantic Conflict: Lessons Learned," p. XIII-20.
90. Whittaker, p. 6.
91. Kippen, p. 9.
92. FM 100-5 , p. 4-17.
93. Koburger, p. 93.
94. "The South Atlantic Conflict: Lessons Learned," p. XIII-13.
95. Ibid.
96. Ibid.
97. Villar, p. 165.
98. Tustin, Part II, p. 408.
99. Field, p. 232.

100. CAPT Robert W. Kesteloot, "Force Projection by Sea: Cornerstone of Contingency Planning," Defense 85 (August 1985), p. 20.
101. Ibid.
102. See concise discussion by Jim Tice, "Army, Navy Agree on Actions to Move Troops, Equipment," Army Times, 5 August 1985, p. 49.
103. Ibid.
104. MG John Frost, 2 Para Falklands--The Battalion at War (London: Buchan and Enright, 1983), p. 155.
105. Tustin, Part II, pp. 405-6.
106. Frost, p. 155.
107. Jolly, p. 132.
108. Grevatte-Ball, p. 20.
109. Field, p. 341.
110. Ibid.
111. Ibid.
112. FM 100-5, p. 4-8.
113. Ibid., p. 4-10.
114. Gardner, p. 26.
115. Grevatte-Ball, p. 20.
116. Ibid.
117. Koburger, p. 98.
118. Trotter, p. 108.

119. Conversation between Colonel Peter F. Dabrowski, J4 staff member of U. S. Central Command, and Major Kenneth L. Privratsky on 22 January 1986. Dabrowski provided the unclassified information that the Near-Term Prepositioning Fleet is not combat loaded, that most contain single commodities or systems, and that plans assume unloading in a benign environment. Another source indicates that aboard one breakbulk vessel in the fleet are two 400-bed field hospitals and one 200-bed combat support hospital. If true, this vessel probably contains all the field hospital equipment that would be available to forces deployed in the region. Destruction of this one vessel could jeopardize the survivability of land forces. See Dov S. Zakheim, "The South Atlantic: Evaluating the Lessons," in The Regionalization of Warfare, ed. James Brown and William P. Snyder (New Brunswick: Transaction, 1985), p. 49.

120. LTG Paul Gorman, "Low Intensity Conflict: Not Fulda, Not Kola," in FC 100-39, Low Intensity Conflict (Ft. Leavenworth, KS: CGSC, December 1984), p. 66.

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