

ACLARACION DE [www.radarmalvinas.com.ar](http://www.radarmalvinas.com.ar)

El siguiente relato se encuentra en el sitio [www.naval-review.com](http://www.naval-review.com) donde usted puede leerlo directamente en su formato original y acceder al resto del sitio.

Copyright © the naval review 1982 4

LOGISTIC SUPPORT FOR OPERATION CORPORATE

Relata lo que se hizo desde el punto de vista logístico durante el conflicto de Malvinas

A efectos de preservarlo como documento histórico para el caso en que el archivo original o el sitio que lo contiene no figurasen más en internet, a continuación se ha realizado una copia.

THE  
NAVAL  
REVIEW

# Logistic Support for Operation Corporate

*(The following article is the result of a number of contributions from the staff of the Chief of Fleet Support—Editor.)*

## Introduction

**I**T HAS BEEN said that logisticians are a sad embittered race of men, very much in demand in war, but sinking into resentful obscurity in peace. Before that decline develops in the aftermath of the Falkland Islands campaign (Operation Corporate), it is appropriate to review the part logistics played in the operation. To most people logistics sounds dull and is thought of in terms of fuel, food, and stores. There is, however, much more including maintenance and repair, ammunition supply, transport (land, sea, and air), and medical services. In war logistics is far from dull and is the very lifeline of operations; indeed logistic constraints may well determine the conduct of operations.

The Falkland crisis brought with it special problems logistically. It was first and foremost an operation quite different from any envisaged in the North Atlantic. As it turned out it was also the largest operation for the Royal Navy since the Second World War. Speed of reaction was of the highest importance, which necessitated a heavy reliance on existing stocks and long and dedicated hours from all those connected with the Naval Service. Support of such a Task Force over 8,000 miles required large resources over and above those of the Royal Fleet Auxiliary (RFA), and the British Merchant Fleet was heavily drawn upon. The distance, and thus deployment times, also made major demands on material endurance and maintenance, and the provision of urgent spares necessitated the establishment of an 'air bridge'. Finally the prospect of casualties, both afloat and in the landing force ashore, gave rise to the need for hospital ships, a facility not used for many years. As will be apparent from what follows every aspect of logistic was tested, and tested vigorously.

## The initial phase

MOD Staffs went to 24-hour watchkeeping at the outset and when decisions were announced about the deployment and disposition of the initial task force and landing forces the entire logistic organisation from respective HQs through the depots and bases followed suit. The first task was to make ready and sail the warships and supporting vessels immediately available in the UK. This was the first major test of the Navy's supply organisation since the Suez campaign and in those first 3 to 4 days a total of 13 major warships were stored to war endurance in the naval bases and sailed, followed very quickly by their supporting RFAs.

In parallel with storing the Task Force the movements and logistics requirements of the assigned land forces committed had to be co-ordinated. Land Forces comprising 40 and 45 RM Cdos, 2nd and 3rd Paras, 5 Brigade and their supporting elements meant that the sea-lift resources available in the HM ships and RFAs were clearly insufficient. At an early stage, therefore, the two major liners *Canberra* and *QE 2* were requisitioned together with further vessels for the transport of the land forces' weapons, ammunition, vehicles, ordnance, stores and equipment, the majority of which came from army sources, were outloaded through the dockyards and Southampton.

Initial supply involved a tremendous increase in the number of demands placed upon the system and special action was taken to reduce the volume of low-priority demands, thus ensuring that the high priority demands could be handled in the required timescale. The pressures of those first few days are well illustrated by the activity at the bases, the problems of converting ships taken up from trade (STUFT), and the medical preparations.

## In the bases

The Base Supply Officers' staffs on the waterfront were involved from the outset

with the frantic rush to sail the major units of the Task Force. Ships, dockyards, and supply depots swung into action. The Base Supply teams played their normal role in support, but at twice normal speed, hastening, monitoring, and 'robbing' urgent stores required for OPDEF rectification; organising emergency reliefs for key personnel and providing stores parties (courtesy of RNDQs, amongst others!). The list goes on; the jobs were done and the first wave of ships sailed on time. That was the easy part.

It came as something of a surprise when BSO Portsmouth was asked at 23.00 one evening to begin organising the stores required for the SS *Canberra* and MV *Eik*. Where was he to begin? However, a hurried conference the next day soon sent various members of BSO's organisation scurrying off to fix the first essentials: a ship's office 'kit'; BRs; CBs; cash; postage stamps; life jackets; anti-flash, etc., etc. A dedicated storing team was set up in Portsmouth to back up those on the ground in Southampton and so began round-the-clock activity to prepare these ships for service with the Task Force. Similar activity was taking place at Devonport.

Ship Managers and Stores Teams were to play a major part in translating requirements from all quarters into hardware for the ships. There was a host of authorities involved in modifying the ships for their new roles and their requirements grew by the hour. Many requests tested the experience, professionalism, and ingenuity of the teams: 'something to cover portholes for darken ship'; 'a complete swimmer of the watch outfit' and 'everything we need to do an RAS'. Each had to be reduced to individual items, identified, and demanded.

The response from PSTO(N)s and stores depots was of the highest order. Corners were cut and many stores were instantly supplied on the strength of a telephone call. In addition to the stores organised through the Base Supply Team the ships were being loaded with vast quantities of military hardware, food, liquid refreshment, and, finally, troops. The jetties and adjacent

dock areas were crammed with vehicles and stores. Somehow it all found its way onboard and the ships departed, ready for war.

#### *Conversion of ships taken up from trade*

The part played by merchant ships in the Falklands campaign has been well publicised. Not so well publicised has been the fascinating story of how some 60 ships were converted for war. In some cases the conversion was minimal with the fitting of extra communications equipment and replenishment at sea (RAS) rigs, as was the case with many tankers and dry stores ships, which essentially continued their peacetime role. Where the role was changed, however, conversion was more complex and this work was done almost entirely in the Royal Dockyards.

The work of selecting ships to be taken up was a major exercise in itself. As the requirements became more or less clear, suitable candidates were identified, visited, and vetted. Dockyard and other officers were flown to Portugal, helicoptered into the North Sea, and found themselves meeting Channel Ferries at unsocial hours with only the shortest time to do the survey before the ship was off again.

The requirements varied from troop ships and hospital ships to aircraft transporters and mooring vessels, from repair ships and minesweeper support ships to despatch ships and munitions carriers. The one thing they had in common was that the time available to do the work was unbelievably short. At the beginning of the operation attempts were made to carry out major conversion work in a commercial yard, but the volume of labour and skilled resources required swamped the available facilities and the ship was moved to a dockyard. Fortunately the requirements did not arise simultaneously and with ships being converted on average in 4 days (and nights) a considerable throughput was possible. Nevertheless at one stage 7 ships were being converted concurrently and at the peak over 500 men were working round the clock in the Royal Yards.

In Gibraltar the SS *Uganda*, fresh from, her interrupted Mediterranean cruise, was converted in 2½ days to a hospital ship. The work included the manufacture of a helicopter pad and the provision of operating theatres and casualty gangways, in addition to bringing the ship up to Geneva standards (hull and superstructure painted white with large red crosses and extensive external lighting).

In Rosyth 5 deep-sea trawlers were converted to minesweepers. The conversions were under way before the fish had been removed from the holds. An oceangoing tug was also converted for duty in the South Atlantic and early in this project major hull cracks were found. A decision was taken that it was quicker to repair these by some very unusual welding than to start looking for another suitable ship. A diving ship was converted to act as a despatch vessel. Like most of the conversions the work included additional fresh water make-up and in nearly every case this took the form of reverse osmosis (RO) plants.

The major conversion work was done at Portsmouth and Devonport. The 13,000-ton ferry *Norland* was the biggest task at Portsmouth. She was converted to a troop ship and fitted with 2 helicopter pads, flight and communications facilities, extra fresh water make-up and RAS gear. The work was completed in just under 4 days. The *Nordic Ferry* and *Baltic Ferry* (roll-on roll-off passenger and cargo vessels) were converted to troop and support ships with 2 helicopter pads. Ballast tanks had to be converted to carry fuel and this involved major pipework to allow the fuel to be embarked at sea and transferred for use. RAS, RO, and communications were fitted. *Geest Port* and *Saxonia* (9,000-ton cargo ships) were converted as solid support ships. These were fitted with vertical replenishment pads, allowing helicopters to transfer stores without landing, and additional accommodation. Ballast tanks were converted for fresh water storage.

The *St Helena*, which normally plies between St Helena and the UK, was

converted to a minesweeper support ship and left in that role bristling with as many guns as the yard could fit on her light superstructure. The passengers' sun deck extended nicely as a helicopter pad. Extra fuel storage and the obligatory RAS and RO completed the picture. The Post Office cable ship *Iris* was converted as a despatch vessel and prison ship, but perhaps the most unusual ship to be worked on at Portsmouth was the *Stena Seaspread*. This ship is designed as a 9,000-ton multi-purpose North Sea oil rig support ship. Her new role was as a forward repair ship and to achieve this she was fitted with workshops, machinery, a mobile crane on deck, extra generators, air compressors, and considerable stores and materials. Additional accommodation was added for the Fleet Maintenance personnel who were added to her ship's company, together with messing facilities for 500 people. Two helicopter pads were fitted and perhaps not surprisingly, 100 tons of extra ballast were installed. She came from the North Sea and such was the speed of the operation she still had divers in the decompression chamber on arrival in Portsmouth.

The big ships were converted at Devonport. One after another 4 large (up to 27,000 tons) container ships were converted to aircraft transporters. First was *Atlantic Conveyor* (15,000 tons and longer than HMS *Hermes*). Much of the work was planned aboard and in Bath during her 2-day trip to Devonport. There, in 5 days, she was converted to a Harrier and helicopter transporter. The main work was the clearing of all obstructions from the upper deck and strengthening of hatch covers, provision of protection for the aircraft on deck, 2 helicopter landing areas, accommodation for 100 additional people, and RAS and RO. The vast amount of space below decks was crammed with general support and military equipment with the intention that this be off-loaded in the South Atlantic via the stern doors. These had been specially strengthened to allow them to be opened at sea and utilised as platforms for helicopter transfers.

Three further ships, the *Atlantic Causeway* (identical to the first), the *Contender Bezant* (18,500 tons) and the *Astronomer* (28,000 tons) were converted in the same way, but with increasingly sophisticated facilities, including a hangar, workshops, and even fuel stowage. As was said at the time, provision of a ski jump and full operating facilities were starting to look perfectly feasible!

As the incredible was achieved in successive ships the excitement grew and the team spirit within the yards and between headquarters and yards was immensely satisfying to experience.

#### *Medical support*

In planning logistic support for Operation Corporate consideration was given to the likely injuries, casualty estimates, and the distance involved in resupplying the Task Force to meet the medical priorities to provide early surgery, replace blood loss, and to give specialised burns care.

These requirements were met from naval hospitals and establishments for medical personnel support, and from the Medical Supply Directorate, Medical Stores Organisation and hospital pharmacists for logistic back-up. In the event 103 medical officers, 15 dental officers, 15 nursing officers, 8 medical service officers 220 medical branch ratings, 38 medical technicians, and 26 naval nurses were deployed.

The Medical Supply Directorate co-ordinated medical procurement and, with MDG(N)'s and CINCFLEET's guidance, drew up new emergency scales of drugs, dressings, and equipment for supply to the Medical Support of the Task Forces both ashore and afloat. Such was the urgency of the situation that in the very early stages of the operation only 48 hours was available to define, procure, pack, and issue new emergency scales. This process of supplying new scales continued since the extreme distances involved meant that resupply packs needed to be embarked *en route* for the South Atlantic before hostilities began.

From the start it was obvious that a fully equipped hospital ship would be needed, and a total hospital package was agreed. Based on a 200-bed field hospital unit it was brought to a full state of readiness and delivered for onward shipping to Gibraltar in less than 48 hours. This massive effort relied heavily upon civilian staff working over the Easter bank holiday. Many medical officers and specialists arranged for their own equipment to be transported from their hospitals to Gibraltar to supplement these basic stores. This left the hospital pharmacists with the added problem of resupplying the base hospitals. The field hospital medical package weighed 90 tons, and together with the additional stores and equipment made a total package of 300 tons which was transported to Gibraltar.

As the first British hospital ship for 29 years *Uganda* spent 113 days at sea. Her Naval complement was 135 officers and ratings most of whom were medical, and included 41 members of the QARNNS. A helo pad was fitted and a ramp was installed to allow rapid transfer of patients to the main hospital area on the promenade deck. All the public rooms were converted to set up the hospital and because of the wide expertise and the specialist equipment brought on board most hospital facilities were available. They included an operating theatre, wards, intensive care unit, burns unit, X-ray department, ophthalmic department, dental surgery, dispensary, and a pathology laboratory which occupied pride of place in the cocktail bar. Two special de-salination plants were supplied. In addition to *Uganda* three survey ships were designated ambulance ships; these were HMSs *Hydra*, *Herald* and *Hecla* and they were staffed and stored accordingly.

#### **Sustaining the force**

Getting the Task Force away was one thing, sustaining it on task was another. At the height of the operation a total of 26 warships and 54 STUFTS were deployed in the operational area involving a total of 25,000 men. All supplies, both solids and

fuel, had to come from UK and be passed down the 8,000 mile chain, maintenance had to be on station and considerable medical support was required.

*Supply and distribution of solids*

Supply and distribution of armaments, food, and stores (comprising general naval stores, electronic, avionic and weapon system spares; ship's hull, engine and auxiliary equipment spares; uniforms and protective clothing) over ranges in excess of 900,000 separately identifiable line items involved:

(a) replenishment at sea via the afloat support provided by the solid support ships (RFA and STUFT); and

(b) use of the Ascension Island logistic facility with urgent items being airfreighted via RAF Lyneham and Brize Norton.

Replenishment at Sea (RAS) from front line AFS(H)s provided the facility to top-up ships on passage to the Falklands and provide logistic support whilst the ships were on station in the Total Exclusion Zone. One RAS by an RFA lasted for 26½ hours involving a number of HM ships and preparation time for the RAS increased the total elapsed time to 40 hours — a tremendous feat of skill and endurance. Other RFAs were also involved in lengthy periods of preparation and replenishment. This in turn posed problems with the increased demands placed on mechanical handling equipment, slings and cargo nets. However, our concept of solids support at the front line in an operational environment was well proven.

Storing to war endurance of warships already deployed at the outset provided a considerable challenge to the supply system and a forward logistic base was set up at Ascension Island. Initially this provided an air link with ships proceeding south immediately and then later an invaluable means of rapid delivery of urgent stores, spares and mail. It was possible to deliver an urgent item to a ship in 24 hours if it was

within range of Ascension Island and for those further south airdrops enabled delivery within 3 to 4 days. This operation was run by the RAF operating Hercules and other aircraft from Lyneham and by Chinook helicopters based in Ascension Island. During the period 2 April to 4 June a total of 5,000 helicopters and 975 fixed-wing flights were made in and out of Ascension Island and several thousands of tons of stores and equipment were moved forward in this way. Drops took place out to 3,000 miles from Ascension Island and all three services were involved in the allocation of priorities and the movement forward.

Armaments stores, because of their very nature, were loaded primarily in the UK onto the Fort- and Regent-class RFAs although some urgent items and back-up requirements were supplied and distributed via Ascension Island. Production of some major weapon systems were also stepped up to match potential usage rates.

The supply of food and general naval stores posed its own problems because of the length of the supply chain, period of deployment and changes in consumption resulting from operational activity. In addition to the 100,000 man-months of general messing items deployed, over 1 million combat rations were deployed in RFAs and 3 solid support ships from trade, the *Geest Port*, *Saxonia*, and *Avalona Star*. These packs were provided not only for the land forces' campaign in the field but to provide a contingency feeding arrangement for prisoners-of-war, if required. In mounting the food supply chain NAAFI's role was very important particularly in the area of their canteen supplies, like beer, cigarettes, chocolate, etc. A full liaison was made and their requirements built in to the loads of the STUFT food ships to match the level of supply of the standard services food range.

It was also necessary to provide a constant flow of stores of a lesser priority and bulkier nature than could be

airdropped. This was achieved by providing three despatch vessels (CS *Iris*, HMS *Leeds Castle*, and HMS *Dumbarton Castle*). These vessels plied up and down between the TEZ and Ascension Island, sometimes diverting via South Georgia, to deliver mail and essential stores.

#### *The fuel pipeline*

The Task Force sailed on 6 April 1982 with sufficient fuel for its immediate needs. At a distance of 8,000 miles from our fuel stocks the solution of the resupply requirement was vital to the success of the Task Force.

The scale of the problem was twofold: to procure a sufficient volume of fuel and to find suitable shipping to transport it. The market place was to our advantage: there was a glut of oil which enabled the speedy purchase of the initial large quantities needed.

Initially 9 commercial tankers were needed. Of these 3 had been chartered, fitted, manned, and sailed by 13 April. A further 6 sailed in the next 12 days. Later the number of tankers in the supply chain increased to 14. One was stationed as a bunkering vessel at Ascension Island and another became a depot ship firstly at South Georgia and subsequently at the Falkland Islands. Ships were also provided to deliver water afloat and ashore and to provide RAF and Army needs on reoccupation.

As the Task Force had to be fuelled at sea and as all RFA tankers were committed to direct fleet support, the commercial tankers were fitted to receive the RFA tankers abeam rigs thus allowing replenishment of the latter. In addition 2 were also equipped as convoy escort oilers with a capability to RAS HM ships direct.

All commercial tankers were equipped with a communications fit operated by RFA radio officers; and RFA deck and engineer officers were appointed to manage RAS operations. Civilian oil fuel depot staff managed stocks on the depot ships. RAS routines were thoroughly practised by

the merchant crews under RFA direction on the southward journey and the system worked very efficiently, even under extreme weather conditions.

#### *Maintenance and repair*

Among the urgent requirements addressed by the Chief of Fleet Support's department was the need to provide the Task Force with maintenance and repair facilities of the sort they would normally find alongside in a naval base. There being no suitable facilities ashore, ships had to be found. With the close co-operation of the Department of Trade, three merchant vessels were taken up and fitted out to fulfil this role, including the provision of overside services such as electrical power and fresh water; they were also equipped for RAS(L) and VERTREP. Two, MSVs *Stena Seaspread* and *Stena Inspector*, were designated forward repair ships and the third, RMS *St Helena*, an MCMV support ship.

*Stena Seaspread*, first identified as potentially suitable by the Admiralty brokers on 7 April, is a multi-purpose North Sea oil rig support ship of considerable endurance and strength, well-equipped with workshops, cranes and, should it be needed, a comprehensive diving capability. This vessel came very close to the Navy's requirement and was duly requisitioned two days later while on task in the North Sea. Her conversion has already been mentioned and the ship deployed on 16 April under the civilian Master with a Naval party embarked. It soon became evident that, with any prolongation of hostilities, *Stena Seaspread* required a back-up. Accordingly the *Stena Inspector*, which was completing a contract in the Gulf of Mexico at the time, was chartered in May.

*Hunt*-class MCMVs are designed for support by a mobile forward support unit which is transportable in container-sized modules by road, rail, sea, or air. When the need to deploy MCMVs arose the most suitable ship available to embark this FSU with its specialist personnel was the *St Helena*, a passenger and general-purpose

cargo ship servicing Ascension and St Helena Islands. While arrangements for a replacement went ahead, the ship was chartered towards the end of May and sailed for fitting out in Portsmouth. In all 16 modules were placed on board providing workshops and stores, together with other special equipment: at the same time the opportunity was taken to enhance certain ship services, notably the fresh water distilling capacity. RMS *St Helena* deployed on 9 June with a Naval party embarked.

South Georgia was initially chosen as the repair base for the Task group. On arrival there teams from the *Stena Seaspread* were set to work in the old whaling stations at Leith and Stromness, which had been abandoned some twenty years ago. At Stromness, which had been the repair yard for the whale catchers, there was a wealth of ship repairing material and equipment. The generator station was set to work, the canteen cleared and galley range restored to working order and fresh water supplies surveyed.

However, as the crisis developed it became apparent that the repair team would need to be closer to the battle group. Then the work really started, repairing battle-damaged ships in uncomfortable and hazardous conditions of sea and weather. Despite the difficulties and hardships much excellent work was achieved. Additionally, teams were despatched to ships in 'Bomb Alley'; they carried out on-site repairs and maintenance while the battle went on about them. The aim was to return a ship as an effective fighting unit. If the damage was too severe for that, repairs were made to allow the ship to complete the 8,000-mile journey back to the UK in safety. It would be impossible to detail all the work that was done, but there were many ships requiring some sort of assistance as a result of battle or weather damage. Some incidents stood out, such as that of HMS *Plymouth*. Having spent 4 days repairing damage caused by 3 bombs, all of which fortunately failed to explode (though one set off a depth charge on deck), *Plymouth* sailed back for the battle area capable of 85 per

cent power and with all weapons except her mortar serviceable. One of the ships damaged was HMS *Glamorgan*. Much effort went into re-establishing the integrity of the hull, and into restoring 70 per cent of the main galley. Whilst their own galley was being renovated, HMS *Glamorgan's* ship's company was fed from the *Seaspread*. It was no mean feat to feed nearly 700 men from a galley designed to feed 70.

A typical example of the improvisation necessary to provide a full repair service despite logistic difficulties was provided during the repair of one of *Glamorgan's* galley machines. A weld was required in a piece of stainless steel; although the welding equipment was suitable, no stainless steel welding rods were carried. The problem was overcome by using a pair of stainless steel dessert spoons to provide the welding filler!

#### *Medical*

The first casualties received by *Uganda* were from HMS *Sheffield* on 12 May and final casualties were received at Port Stanley on 13 July. In total 730 casualties were treated including 150 Argentines. Over 500 operations and surgical procedures were carried out before casualties were evacuated to the UK.

Supplies were required to give immediate casualty care in other ships of the Task Force by ships' own medical officers or medical branch ratings before evacuating casualties to larger ships carrying a surgical support team, for example HMS *Hermes* or to *Uganda*. Ashore, medical support was provided most effectively by 3rd Cdo Bde Medical Squadron and 16 Field Ambulance RAMC, who cared for 450 casualties.

At the beginning of the operation the army blood supply depot provided a total of 800 pints of whole blood for the Task Force; *Uganda* received 400 pints and 16 Field Ambulance 400 pints. After this, blood was donated by 1st Welsh Guards and 3rd Cdo Bde whilst on transit to the Falkland Islands. A further 350 pints were taken on board HMS *Hermes* and *Invincible* for the land forces. Later on in the conflict other blood donor sessions were held with blood being donated by



servicemen, medical staff, and ships' crews.

#### **The aftermath**

The fighting may be over, but logistic support is still required. Routine and urgent supply of all commodities are of course continuing for the ships on station, and the requirement for forward maintenance remains. First the two *Stenas*, and now the *Stena Inspector* have remained on station carrying out defect rectification. During the initial period two Royal Navy 'firsts' were achieved by the *Stena Seaspread*: the first controllable pitch propeller blade change carried out afloat, and the first 'gas turbine change unit' exchange for a destroyer or frigate at anchor. Both of these jobs went as planned and well within the allocated time schedules.

In the UK the Royal Dockyards have carried out much battle-damage repair and on the human, as opposed to the material, side everything possible was done for the welfare of survivors from ships lost in the Falklands campaign on their return to the UK. For survivors repatriated through Ascension Island some 5 tonnes of uniform clothing were sent to the island so that men could complete their journey properly clad. Shirts, trousers, jerseys, windproof jackets, underwear, towels, hosiery, footwear, and badges were all available (but we forgot the kit bags). Survivors from HMSs *Coventry*, *Ardent*, and *Antelope* who returned in the *QE 2* were met closer to home. Three 706 Sqn Sea Kings were used to vertrep 9 loads of clothing each weighing some ¾ tonnes to the ship as it steamed up the English Channel to Southampton.

The survivors were also offered a number of other special facilities including a new cheque book, £150 advance of pay in cash and a cheque for up to £500 in advance compensation so that they could replace their civilian clothing and effects without waiting for settlement for their claims. These arrangements ensured that the survivors could be sent directly on well-earned leave immediately on arrival in UK. After leave they all returned to their parent base for full rekitting, before being posted to new units.

#### **Epilogue**

In an operation of this magnitude, however successful, there are inevitably lessons to be learned. Detailed evaluation is still continuing and this includes the field of logistics. That said, the Falklands operation showed that our logistics organisation (across all support areas) was flexible, responsive, and on the whole soundly based, and undoubtedly contributed in no small measure to the success of the operation.

Speed of reaction was greatly enhanced by firm decisions being taken early, which included the provision of finance. This demonstration of resolve engendered goodwill and hard work amongst those intimately involved in the Naval logistic machine. Thus in this operation the necessary ingredients existed to achieve success: firm resolve, adequate finance, practice in peace, goodwill, hard work, ingenuity, and luck. But then an element of luck is often the reward for firm resolve.

SUPPORTER