



Ministry
of Defence

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Recycling of Ex-RFA Orangeleaf

Royal Fleet Auxiliary Support Tanker

Disposal Services Authority



Defence Equipment & Support

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The former RFA Orangeleaf departed from Liverpool on the 24 February 2016

Executive Summary

Former RFA Vessel Orangeleaf was declared surplus to the MOD requirements and made available for disposal to the DSA in September 2015. In accordance with the UK Governments Ship Recycling Strategy and following an open competition in October 2015 for the recycling of Orangeleaf, the Disposal Services Authority awarded preferred bidder status to the Turkish company LEYAL Ship Recycling Ltd whose formal proposal was to conduct the recycling of this vessel at their dedicated ship dismantling facility in Aliaga, Turkey.

The vessel was placed under commercial care and custody of Cammell Laird Ltd and was berthed in Birkenhead Liverpool. The vessel departed from Liverpool on the 24 February 2016 and arrived in Turkey on the 14 March 2016. On the 3 June 2016 LEYAL reported that Ex-RFA Orangeleaf had been completely dismantled and recycled in accordance with the relevant EU Waste Management Legislation and the UK's Ship Recycling Strategy in just 4 months.

EX-RFA Orangeleaf

Background

General particulars



Picture for illustration only

| | |
|-----------------------------|---|
| Date and Place of Build | Cammell Laird Shipbuilders Ltd, Completion Date 1975 |
| IMO No. | IMO Number 7342005 |
| Date ceased service | 29 September 2015 |
| Type of Vessel: | Single Hull Fleet Replenishment Tanker |
| Ex Pennant No. | A110 |
| Summary of condition | Sound of Towing, not in running condition. |
| Displacements and tonnages | Current: 16342.0 Loaded: 33751.0 Gross Register: 18854.0 Nett Register : 9043.0 Lightweight: 8080.0 |
| Draughts in feet (meters) | Current: 4.6m fwd. 5.8m aft. |
| Lengths in feet (meters) | 5.8m aft. Length OA Extreme: 170.69m |
| Breadth in feet (meters) | Extreme: 25.94m |
| OA height Mast-head to keel | 44.6m |
| Last Docking | June 2014 at Cammell Laid, Liverpool |
| Last Refit | June 2014 at Cammell Laid, Liverpool |

Historical Interest

Orangeleaf

RFA Orangeleaf was a single Hull Leaf-class fleet support tanker of the Royal Fleet Auxiliary.

In 1990 she supported the Type 42 destroyer HMS York following the Iraqi invasion of Kuwait.

A year later RFA Orangeleaf supported HMS Cardiff and HMS Campbeltown during a humanitarian relief operation in the West Indies following Hurricane Andrew.

Orangeleaf saw action in the Gulf War in 1991.

During early-to-mid-2004, the ship took part in a deployment with a French carrier battle group, centred on the aircraft carrier *Charles de Gaulle*, to the Indian Ocean.

On 23 October 2009, she was moved from Birkenhead dry-docks into the River Mersey and to the Cammell Laird shipyard to continue a major refit and completed her service in the port where she was built 40 years ago.

RFA Orangeleaf was one of four original Leaf Class tankers – together with Appleleaf, Brambleleaf and Bayleaf and RFA Oakleaf and was the last RFA Leaf Class Tanker to retire.

Background on the Disposal Services Authority (DSA)

- The DSA has delegated authority to dispose of all UK MOD surplus equipment in the UK and overseas.
- The DSA's role is to dispose of surplus assets identified by the owner for release into the commercial market.
- The DSA is the only Government Organisation offering a completely managed service for the Re-use, Recycling and ultimately disposal of surplus government assets.

The DSA's primary aim is to sell surplus ships for further use but where this is not possible (for instance, when ships are no longer seaworthy and only suitable for recycling) its objectives are to ensure that the vessel is recycled in a safe and environmentally sound manner, and in compliance with its legal responsibilities as a producer of waste.

Introduction

The DSA conducted a tender exercise for the recycling of the former RFA Vessel Orangeleaf in September 2015 and the vessel was sold on an 'as seen as lying' basis for recycling within the organisation for Economic Co-Operation (OECD) and in full compliance with the principles of the Basel Convention and all other associated EU & UK legislation including Regulation (EC) No 1013/2006 of the European Parliament and the Council of 14th June 2006 on Shipments of Waste.

Competition

Information and Requirements

Previously preparation for HM Vessels has been carried out by the MOD's Disposal Reserve Ship Organisation (DRSO) in Portsmouth who play a vital part in the process producing an Inventory of hazardous materials (IHM) highlighting the hazardous material on board along with an independent Asbestos Management Survey provided by Lucion Environmental Ltd, both of which were included as part of the tender documents.

In this sale Orangeleaf was under the custody of Cammell Laird Shipbuilders Ltd who carried out the de-commissioning activities.

Tenders were limited to bidders from within the EU and the OECD – as recommended by the UK Ship Recycling Strategy (SRS).

The recycling of ships is covered by a range of UK and EU legislation for which Department for Environment, Food and Rural Affairs (DEFRA) is the lead department in the UK. This Legislation includes but is not limited to:

- The Waste Shipments Regulation (EC)
- No 1013/2006 of the European Parliament and of the Council of 14 June 2006
- Parts of the Radioactive Substances Act 1993
- Environmental Protection (Duty of Care)
- Regulations 1991 SI 2839
- Hazardous Waste (England and Wales)
- Regulations 2005 SI 894
- Health & Safety at Work etc 1974
- Control of Asbestos at Work Regulations 2006

Ship Recycling Evaluation

Following the recommendations of the SRS, the DSA once more convened a Ship Recycling Evaluation Committee, involving representatives the Maritime Coastal Agency (MCA), DRSO and the DSA to assess the tender responses against set criteria called for in the Strategy. Prospective purchasers were required to produce a detailed Ship Recycling Plan, demonstrating their understanding of all the requirements involved in Ship Dismantling against each of the following:

- Facilities & dismantling methodology
- Health & Safety
- Environmental plans
- Operations, sub-contractors
- Licences & permits
- Media and Trans-Frontier Shipment of Waste (TFS)

The Ship Recycling Plan is paramount to the consideration of offers to purchase and should provide evidence to enable the Evaluation Committee to score against.

Award of Preferred Bidder Status

The DSA awarded preferred bidder status to LEYAL Ship Recycling and a formal contract was awarded in December 2015 once the appropriate consents were obtained, in accordance with the provision of the EC Waste Shipments Regulation 1013/2006.



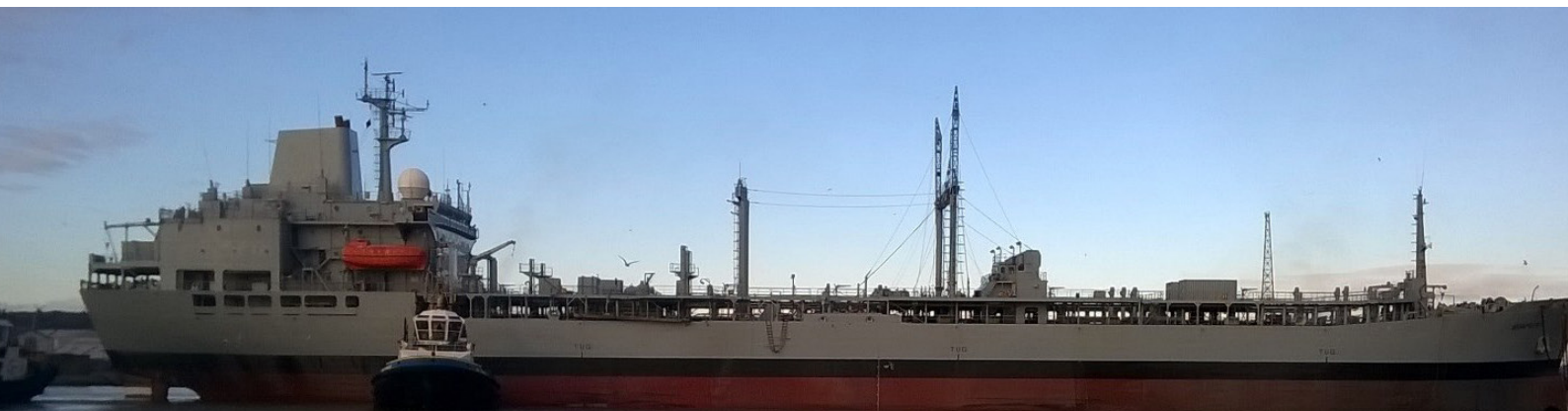
Orangeleaf was manoeuvred in to position by local port tugs who assisted in the towing of Orangeleaf out on to the River Mersey.

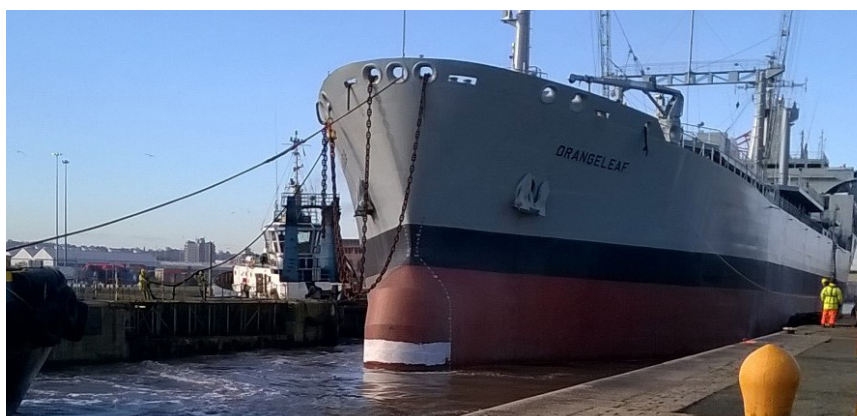


24 Feb 2016 Representatives from DSA and the UK Environment Agency Waste Shipments Team viewed the departure of the vessel.



The Tug Diavlos Pride was the tug chartered to tow Orangeleaf to Turkey. She had been used previously to tow HM Vessels – RFA Oakleaf & HMS Edinburgh from HMNB Portsmouth to Turkey.





Recycling of RFA Orangeleaf

LEYAL Ship Recycling Ltd was required to provide a monthly breakdown of the outturn of metals and waste during the recycling programme.

Audits were conducted by DSA staff during the life of the project which involved a physical inspection of the yard in Aliaga Turkey, together with an audit of weighbridge tickets, licences and consignment notes which were checked against the reported outturn.

Photographic evidence was provided at key stages of the dismantling process, which ensured that the DSA could be confident on the method and manner in which the Vessels were dismantled and recycled in accordance with the aims of the SRS.

Photographic Evidence

The photographic evidence shows the dismantling progress and this coincides with the monthly reports, Demo Schedule and the sales progress.



22 March 2016 The first stages of Ex-RFA Orangeleaf being dismantled showing the dismantling of the accomodation and bridge.





31 March 2016 The ship is now on the slipway. The vessels superstructure is dismantled while the vessel is afloat reducing its weight.



Dismantling and progress of works dated 13 April 2016.



10 May 2016 The ship is now on the slipway where materials are segregated and processed.



23 May 2016 The remaining part of the keel is winched on to the slipway.
Ex-RFA Orangeleaf was fully dismantled on the 3 June 2016

Final Outturn

At the start of the project an Inventory of Hazardous Materials (IHM) is produced, the purpose of this was to identify what hazards were contained in the vessel which is then compared with the final outturn figures reported to the DSA by LEYAL Ship Recycling Ltd.

A detailed outturn of materials (ferrous, non-ferrous, plastics, asbestos, oils etc) is recorded by the company and this information is communicated to the DSA on a monthly basis, with hard copies available for inspection during the regular visits by DSA personnel.

A summary of this information made by LEYAL to the DSA is presented in the tables below.

| (All figures in Tonnes) | Expected | Actual | Destination |
|--------------------------------|-----------------|------------------|----------------------|
| Ferrous Metals | 7,000 | 7,049.351 | Recycled |
| Non-Ferrous Metals | 50 | 80.380 | Recycled |
| Cables | 30 | 27.920 | Recycled |
| Other Products | 200 | 127.160 | Sale/Recycled |
| Waste | 140 | 198.130 | Disposed |
| Total | 7,420.00 | 7,482.94 | |

| Final Destination | Tonnes | Percentage age of Total |
|--------------------------|-----------------|--------------------------------|
| Sold or Recycled | 7,284.81 | 97% |
| Disposed | 198.130 | 3% |
| Totals | 7,482.94 | 100% |

The prevailing regulation on Waste Management of Turkey entered into force on 2nd April 2015. This regulation based on European legal texts (namely, Directive No. 2008/98/EC and Decision No. 2000/532/EC), aiming for synchronization of the Turkish law with the EU acquis. This regulation has abrogated three previously valid Turkish regulations and unified them in a single legal framework, according to the EU waste framework. Turkey, in its continuous efforts to improve its standards regarding Environmental management, has launched an extensive accession program that has been implemented in co-operation with the European Commission. Turkey being an OECD Member, an EU Member candidate and party to major international conventions (such as The Basel Convention, The Stockholm Convention and the Rotterdam Convention) has established a robust legal framework and industrial infrastructure that is broadly equivalent to relevant international and EU standards.

While the vast majority of the materials originating from the dismantling process are recycled/recovered (97%), the operation also yields a small fraction of non-hazardous and hazardous wastes streams. These materials are identified, removed, handled and temporarily stored with the support of the Ship Recyclers' Association of Turkey, which is an organization specifically licensed for this activity by the Ministry of Environment and Urban Planning and the Ministry of Transportation, Maritime Affairs and Communications of Turkey (i.e. the two competent authorities in Turkey regarding this recycling and waste management). At the same time the final disposal of wastes is done by specialized waste facilities which are also licensed for certain waste disposal methods and accepting corresponding waste categories. Both the DSA and the Environment Agency of the UK review the proposed waste disposal routes in Turkey prior to granting permission for the export of the vessel, with the process being controlled by the Environment Agency of the UK under the TFS waste shipment regulation (European Regulation (EC) No. 1013/2016) pre-informed consent export procedure.

| The main waste recovery and disposal methods utilized in relation to ship recycling in Turkey | Materials | Weight |
|--|--|------------------------|
| D1/D5: Regular/Industrial engineered Landfill | Asbestos, Insulating Materials, Remnant Waste, General wastes & recyclables | 180.61 tonnes |
| D10: Incineration at high temperature for disposal | Fluorescent lamps & Lights | 1 tonne |
| R1: Incineration for power generation | Fuel/Oils (liquids) | 17.52 tonnes |
| R4: Metal reclamation/seperation | Electric & electronic waste, Batteries & Cables containing hazardous insulation | 7,157.65 tonnes |

The Waste related activities classed as (R) or disposal (D) are defined in the EU Waste Framework Directive 2008/98.

Conclusion

Ex-RFA Orangeleaf was completely recycled on the 3 June 2016 just 4 months after arriving at LEYAL. The whole process from start to finish took just 9 months from start to finish with the TFS process alone taking up to 6 weeks.

Ex-RFA Orangeleaf was fully dismantled with just 3% being disposed of and over 97% of the vessel recycled & recovered.

The DSA have now successfully conducted the sale of 28 vessels in which all have complied with all international agreements and principles concerning environmentally sound management of waste. Since 2008 LEYAL Ship Recycling Ltd has won 12 Recycling projects which included 2 Aircraft carriers Ark Royal & Invincible, 4 RFA Tankers Oakleaf, Bayleaf, Fort George and Orangeleaf and Type 22 Frigates Cumberland, Campbeltown & Chatham and 11 Type 42's.

The report will be sent out to senior internal stakeholders and a growing number of other foreign Governments as they view the UK MOD as the lead when it comes to recycling warships.

The DSA would like to extend their thanks to Cammell Laird Ltd where Ex-RFA Orangeleaf was placed under commercial care and custody berthed in Alexandra Dock, Liverpool until the disposal sale process took place. This was the second successful sale of a surplus RFA vessel sold for recycling direct from Cammell Laird and the professionalism, flexibility of all those involved helped to achieve such a tight schedule.

The report can be found on the DSA website

<https://www.gov.uk/government/collections/dsa-ship-recycling>



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