



Ministry  
of Defence

de&s

# Recycling of **Type 42s**

Edinburgh, York & Gloucester

Disposal Services Authority



Defence Equipment & Support

# **Defence Equipment & Support Contents**

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# Executive Summary

In 2013 an open competition for the disposal of Type 42 Batch 3 Destroyers HMS Edinburgh, York & Gloucester was undertaken and 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 all these vessels at their dedicated ship dismantling facility in Aliaga, Turkey.

The vessels were towed independently and the first vessel Ex-HMS Edinburgh left HMNB Portsmouth under tow on the 12 August 2015 followed by Ex-HMS York on the 19 August 2015 and finally Ex HMS Gloucester on the 22 September 2015.

Ex-HMS Edinburgh was the first vessel to arrive at LEYAL Ship Recycling Ltd on the 7 September 2015 and she was fully recycled on 1st February 2016.

Ex-HMS York arrived in Aliaga on the 9 September 2015 and was fully recycled on the 4 March 2016 and finally Ex-HMS Gloucester arrived in Aliaga on the 15 October 2015 and was fully recycled on the 7 January 2016.

It took just 7 months to dismantle and recycle the 3 vessels with 96% of the vessels recycled.



Ex-HMS Edinburgh was the first vessel to leave Portsmouth on the 12 Aug 2015 under the tow of tug Spartan.



Ex-HMS York leaving HMNB Portsmouth under the tow of Diavlos Pride on the 19 Aug 2015.



Ex-HMS Gloucester was the last vessel to leave HMNB Portsmouth on the 22 Sept 2015 under the tow of tug Hellas.

# EX-HMS Edinburgh

## Background

### General particulars



*Picture for illustration only*

Date and Place of Build	1980 Cammell Laird Birkenhead UK. Launched 1983, commissioned 1985.
IMO No.	4907098
Date ceased service	11 July 2013
Type of Vessel: Ex Pennant No.	Formerly a Warship – Type 42 stretched (“batch 3”) Destroyer D97
Summary of condition	Considered sound for Towing, not in running condition, certain equipment, having been removed by MoD for further use.
Displacements and tonnages	Current displacement estimate: 4100 tonnes Lightship: estimate 3600 tonnes
Draughts in feet (meters)	Current: Fwd 12ft.(3.7m) Mid 13ft (3.9) Aft 13 ft (3.9m) Prop Sweep 18ft (5.5m)
Lengths in feet (meters)	Overall 463ft (141.1m) Mean light-waterline 434ft (132.2m)
Breadth in feet (meters)	Extreme:50ft 1in (15m) waterline (frame 34) 48ft (14.6m)
OA height Mast-head to keel	114ft (35m)
Last Docking	2010 Portsmouth
Last Refit	2010 Portsmouth

Historical Interest

## Edinburgh D92

Edinburgh was the last Type 42 Destroyers to undergo a refit in January 2010 emerging from her refit in September 2010 to undergo various sea trials.

In May 2011 Edinburgh began an eight-month deployment visiting Cape Verde & the Falkland Islands.

On the 13 April 2012 she fired the last ever operational Sea Dart Missiles after a thirty year career.



Her Funnel Badge depicts a triple turreted castle mounted on rock and her nickname was 'Fortress of the Sea'.

During the 2010-2015 Conservative Liberal Democrat Coalition government a petition containing 2,867 signatures was launched campaigning for her to be kept as a 'floating Museum' in Leith Docks in Edinburgh besides the Royal Yacht Britannia.

The 30 year old warship clocked up nearly 800,000 miles and decommissioned on June 6 2013 after her farewell tour calling at Edinburgh and Cammell Laird, Birkenhead where she was built to make way for the new batch of Type 45 Destroyers.

# EX-HMS York

## Background

### General particulars



*Picture for illustration only*

Date and Place of Build	1980 Swan Hunters Wallsend-on Tyne UK. Launched 1982, commissioned 1985.
Date ceased service	8 November 2012
Type of Vessel: Ex Pennant No.	Formerly a Warship – Type 42 stretched (“batch 3”) Destroyer D98
Summary of condition	Considered sound for Towing, not in running condition, certain equipment, having been removed by MoD for further use.
Displacements and tonnages	Current displacement: 4300 tonnes Lightship: estimate 3800 tonnes
Draughts in feet (meters)	Current: Fwd 12ft.(3.7m) Mid 13ft (3.9) Aft 13 ft (3.9m) Prop Sweep 18ft (5.5m)
Lengths in feet (meters)	Overall 463ft (141.1m) Mean light-waterline 434ft (132.2m)
Breadth in feet (meters)	Extreme:49ft 1in (15m) waterline (frame 34) 48ft (14.6m)
OA height Mast-head to keel	114ft (35m)

Last Docking	2010 Portsmouth
Last Refit	2009 Portsmouth
Historical Interest  <b>York D98</b>	<p>The Type 42 Destroyer was the 12th ship to bear the name HMS York and was the last of the Type 42 Destroyers to be built for the Royal Navy. She was the fastest and she clocked up more than 750,000 miles protecting the UK's interests across the world before being decommissioned to make way for the hi-tech Type 45 Destroyers.</p> <p>In 2003 she took part in the Invasion of Iraq.  In 2006 she joined HMS Gloucester, carrying out evacuations from Lebanon &amp; Libya and made a number of deployments to the Falklands.</p>  <p>Her funnel badge, a red cross with lions passant was based on York's city of coat of arms, and her crest was the White Rose of York. Her motto 'Bon Espoir' means Good Hope.  The ship was awarded the Freedom of York in 1991.</p> <p>The ship's company exercised its Freedom of York for the final time in 2012, with a farewell parade through the city centre.</p>

# EX-HMS Gloucester

## Background

### General particulars



Picture for illustration only

Date and Place of Build	1979 Vosper Thornycroft, Woolston, Southampton UK. Launched 1982, commissioned 1985.
Date ceased service	5 August 2011
Type of Vessel: Ex Pennant No.	Formerly a Warship – Type 42 stretched (“batch 3”) Destroyer D96
Summary of condition	Considered sound for Towing, not in running condition, certain equipment, having been removed by MoD for further use.
Displacements and tonnages	Current displacement: 4300 tonnes Lightship: estimate 3800 tonnes
Draughts in feet (meters)	Current: Fwd 12ft.(3.7m) Mid 13ft (3.9) Aft 13 ft (3.9m) Prop Sweep 18ft (5.5m)
Lengths in feet (meters)	Overall 463ft (141.1m) Mean light-waterline 434ft (132.2m)
Breadth in feet (meters)	Extreme:49ft 1in (15m) waterline (frame 34) 48ft (14.6m)
OA height Mast-head to keel	114ft (35m)

Last Docking	2007 Rosyth
Last Refit	2007 Rosyth
Historical Interest  <b>York D98</b>	<p>Launched on the 2 Nov 1982 by the Duchess of Gloucester she was one of the last four of the class to be built having a lengthened hull design giving her better sailing qualities and greater endurance.</p> <p>HMS Gloucester was known throughout the fleet as the Fighting 'G' and after she was decommissioned on the 30 June 2011 she had done more than a quarter of a century's service.</p> <p>Gloucester served in the 1991 Gulf War, and during the 2006 Israel-Lebanon conflict Gloucester was the first Royal Navy vessel to evacuate British nationals from Beirut making 3 trips taking evacuees to Cyprus.</p> <p>During a visit out to the Falklands Islands in 2010 she intercepted the yacht 'Tortuga' who was smuggling £4 million of cocaine.</p> <p>The ship retains links with the Royal Gloucestershire, Berkshire &amp; Wiltshire Regiment and the City of Gloucester.</p> <div style="text-align: center;">  </div> <p>The ship's crest features a horseshoe, part of the City's Tudor Arms.</p>

# 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 HMS Edinburgh, York & Gloucester in December 2014 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.



Ex HMS Edinburgh at HMNB Portsmouth undergoing equipment removals prior to the disposal sale, showing her in a rusty state after the removal of the Radar Absorbent Sheeting.

# Competition

## Information and Requirements

The preparation for HM Vessels is 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. The activity conducted by DRSO demonstrated to ship owners the value in investing in the preparation of vessels for disposal which is of enormous benefit to the UK MOD as it continues to set standards for the dismantling of Government owned vessels.

Prior to the planned removal date of the vessels, the purchaser who is responsible for arranging the removal of the vessel submits a towing plan. DRSO play an important part in supporting the towing and rigging preparations on deck and contributed to the successful sale and departure of these vessels whose disposal preparations can take many months of hard work to complete. All the necessary formalities for departure including Export Licence Clearance are also the responsibility of the purchaser.

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 May 2015 once the appropriate consents were obtained, in accordance with the provision of the EC Waste Shipments Regulation 1013/2006.

## Recycling of Ex-HMS Edinburgh, York & Gloucester

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

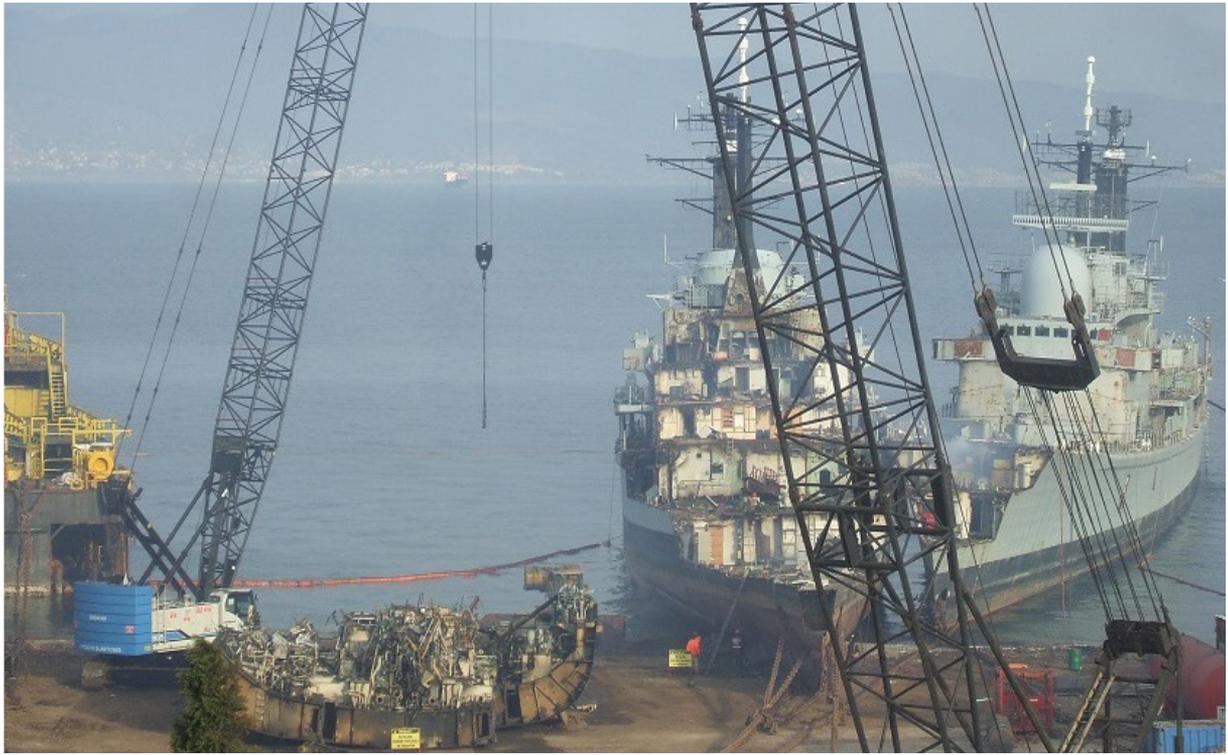
The photographic evidence shows the dismantling progress and this coincides with the monthly reports, Demo Schedule and the sales progress.



11 Dec 2015 – Progress of works showing evidence that dismantling has started on all 3 vessels from left to right Ex-HMS Gloucester, Edinburgh & York.



26 Dec 2015 – From left to right Ex-HMS Gloucester on the concrete slipway, Ex-HMS Edinburgh & York.



2 Jan 2016 – The remains of Ex-HMS Gloucester which was the first of the vessels to be recycled on the 8 Jan 2016.



7 Jan 2016 – Ex-HMS Edinburgh in the foreground & Ex-HMS York in the background. Showing stages of pre-cutting ready for the hull to be winched up the dry slipway. Heavy Machinery is used to remove large pieces of the vessel for processing.

14 Jan 2016 – Ex-HMS Edinburgh is winched on the slipway and shows the dismantling of the top deck and accomodation.





14 Jan 2016 – 3 Photographs showing the recycling of Edinburgh on the slipway.  
The superstructure completely removed.





14 Jan 2016 – Ex HMS York in her early stages of dismantling.



14 Jan 2016 – Ex HMS York showing remains of the engine room.  
The vessel is dismantled from 'top to bottom' while afloat and from 'bow to stern' on the dry slip way.

27 Jan 2016 – Ex-HMS Edinburgh  
on the slipway in her final stages of  
dismantling with Ex-HMS York waiting  
in the background.





2 Feb 2016 – Ex-HMS York showing the start of the superstructure being removed.



15 Feb 2016 – Ex-HMS York showing the dismantling of the top deck and accommodation. The large blocks removed from the vessel are with the use of heavy lift cranes. Secondary cutting and further processing and material separation takes place.



23 & 29 Feb 2016 – Ex-HMS York nearing completion, she was fully recycled on the 4 March 2016.



Final dismantling of the pump & engine room. The final recycling of the hull takes place completely on dry land where the remaining part of the keel is winched on to the landing area.

# 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.

## Total for all 3 Vessels

(All figures in Tonnes)	Expected	Actual	Destination
<b>Ferrous Metals</b>	<b>9,000</b>	<b>8,588.950</b>	<b>Recycled</b>
<b>Non-Ferrous Metals</b>	<b>450</b>	<b>512.700</b>	<b>Recycled</b>
<b>Cables</b>	<b>75</b>	<b>77.800</b>	<b>Recycled</b>
<b>Other Products</b>	<b>150</b>	<b>622.360</b>	<b>Sale/Recycled</b>
<b>Waste</b>	<b>345</b>	<b>357.700</b>	<b>Disposed</b>
<b>Total</b>	<b>10,020</b>	<b>10,159.51</b>	

Final Destination	Tonnes	Percentage age of Total
<b>Sold or Recycled</b>	<b>9,801.81</b>	<b>96%</b>
<b>Disposed</b>	<b>357.700</b>	<b>4%</b>
<b>Totals</b>	<b>10,159.51</b>	<b>100%</b>

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 (96%), 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.

<b>The main waste recovery and disposal methods utilized in relation to ship recycling in Turkey</b>	<b>Materials</b>	<b>Weight</b>
<b>D1/D5: Regular/Industrial engineered Landfill</b>	<b>Asbestos, Insulating Materials, Remnant Waste, General wastes &amp; recyclables</b>	<b>268.64 tonnes</b>
<b>D10: Incineration at high temperature for disposal</b>	<b>Fluorescent lamps &amp; Lights</b>	<b>1 tonne</b>
<b>R1: Incineration for power generation</b>	<b>Fluorescent/Oils (liquids)</b>	<b>89.06 tonnes</b>
<b>R4: Metal reclamation/seperation</b>	<b>Electric &amp; electronic waste, Batteries &amp; Cables containing hazardous insulation</b>	<b>9,179.45 tonnes</b>

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

# Conclusion

Ex-HMS Gloucester was completely recycled on the 7 January 2016 and Ex-HMS Edinburgh was completely recycled on the 1st February 2016 and Ex-HMS York was completely recycled on the 4 March 2016. All 3 vessels collectively were fully dismantled with 96% of the vessels being sold or recycled.

The DSA have now successfully conducted the sale of 27 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 11 Recycling projects which included 2 Aircraft carriers Ark Royal & Invincible, 3 RFA Tankers Oakleaf, Bayleaf & Fort George and Type 22 Frigates Cumberland, Campbelltown & Chatham.

LEYAL have now successfully recycled 11 Type 42's which include Cardiff, Newcastle, Glasgow, Exeter, Southampton, Nottingham, Manchester & Liverpool.

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 report can be found on the DSA website**

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



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