EXPLANATORY MEMORANDUM TO

THE GENERAL LIGHTHOUSE AUTHORITIES (BEACONS: AUTOMATIC IDENTIFICATION SYSTEM) ORDER 2006

2006 No. 1977

1. This explanatory memorandum has been prepared by the Department for Transport and is laid before Parliament by Command of Her Majesty.

2. Description

2.1 The Department wishes to update the powers of the three general lighthouse authorities (GLAs) to permit the development of modern marine electronic navigation systems. The adoption of Automatic Identification Systems (AIS) will permit the GLAs to work with the Maritime and Coastguard Agency to use the UK AIS network to transmit navigation signals. Apart from contributing to safety, this will lead to considerable economies over the next 20 years or so.

3. Matters of special interest to the Joint Committee on Statutory Instruments *or* the Select Committee on Statutory Instruments

3.1 None

4. Legislative Background

4.1 Part VIII of the Merchant Shipping Act 1995 provides that the GLAs have the superintendence and management of all lighthouses, buoys and beacons within their respective areas in the United Kingdom.. The GLAs are:

the Trinity House for England and Wales and adjacent seas and islands

the Commissioners of Northern Lighthouses for Scotland and adjacent seas and islands; and

the Commissioners of Irish Lights (CIL) for Northern Ireland and adjacent seas and islands

4.2 Section 223(3) of the Merchant Shipping Act 1995 enables the Secretary of State for Transport to provide by order subject to affirmative resolution that a reference to a buoys or beacon in Part VIII of the Act shall be construed as including equipment of a specified kind which is intended as an aid in the navigation of ships.

4.3 This Order specifies the Automatic Identification System (AIS) as an aid to navigation. This system will be operated in conjunction with the

Maritime and Coastguard Agency as a unified system and costs will be split between the GLAs and the MCA.

5. Extent

5.1 This instrument applies to all of the United Kingdom.

6. European Convention on Human Rights

6.1 The Minister of State for Transport, Stephen Ladyman has made the following statement regarding Human Rights:

6.2 In my view the provisions of The General Lighthouse Authorities (Beacons Automatic Identification System) Order 2006 are compatible with the Convention rights.

7. Policy background

7.1 The Department for Transport and the GLAs are developing a policy which reduces the costs of provision of marine aids to navigation while moving to an increasing reliance on modern electronic aids. Currently around 90% of operational expenditure supports traditional aids to navigation which are widely acknowledged as the secondary system to satellite navigation. Satellite navigation offers major advances in accuracy but brings with it a number of disadvantages. The US Global Positioning System is a defence-orientated system and is subject to adjustments to meet US requirements. It can fail or become inaccurate without the end user being aware of the failure or inaccuracy. Hence independent systems are required in support. Over a number of years and subject to international developments, the UK expects to be able to:

- reduce the reliance on traditional aids to navigation. This will be achieved by discontinuing some aids and reducing the range and size of others;

- use AIS signals to provide an electronic aid to navigation on shipboard AIS displays. This will permit aids to either be downgraded – for example from a lightship to a buoy – or in the longer term to be removed altogether with signals sent from the land creating a synthetic aid with no physical presence.

7.2 So far this policy has produced a reduction in costs and infrastructure. The industry has seen light dues - the charges levied on vessels calling at UK ports - set at 43p per net ton in April 1993 reduce to 35p per net ton in April 2006. This represents a fall of over 40% in real terms.

8. Impact

8.1 A Regulatory Impact Assessment is attached to this memorandum.

8.2 The impact on the public sector is expected to be a reduction in lighthouse authority activity and costs which is expected to develop over the next 20 years or so.

9. Contact

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REGULATORY IMPACT ASSESSMENT

1. TITLE OF PROPOSAL

The Merchant Shipping (Beacons: Automatic Identification Systems) Order 2006

2. PURPOSE AND INTENDED EFFECT

Objective

To permit the General Lighthouse Authorities (GLAs) to operate Automatic Identification Systems (AIS) for the benefit of marine navigation, whilst containing costs.

The establishment of AIS as a beacon, a marine aid to navigation, within the meaning of Section 223 of the Merchant Shipping Act 1995. This order will provide a power for the Secretary of State for Transport to sanction expenditure from the General Lighthouse Fund to fund AIS technology as a marine aid to navigation.

Background

Under the Merchant Shipping Act 1995 the three General Lighthouse Authorities are responsible for the provision of marine aids to navigation. The Authorities are identified in section 193:

- The Corporation of Trinity House for England, Wales and the Channel Islands
- The Commissioners of Northern Lighthouses for Scotland and the Isle of Man
- Commissioners of Irish Lights for Northern Ireland. This body is an all Ireland body and provides similar services in Ireland.

They provide a mixture of traditional aids – lighthouses, buoys and beacons - and electronic aids - Racons, Differential Global Positioning Systems. The cost to the UK and Ireland (who operate a unified service) is £70 million per annum. The GLAs are funded from the collection of light dues, a system of user charges levied on commercial shipping calling at UK and Republic of Ireland ports. These dues are paid into the General Lighthouse Fund. The Secretary of State acts as trustee for the management of the Fund. He is not empowered to direct the GLAs on the provision of aids but is required to sanction GLA expenditure and any proposal to establish new aids.

The GLAs carried out a consultation exercise in 2003/04 to establish the users view on the required mix of aids to navigation over the period to 2020. The consultation suggested that the reliance on traditional aids was reducing as satellite based navigation became the primary system. However traditional aids retained an essential role as the back up system as safe navigation could not rely on current satellite systems. Two independent systems would continue to be essential and the only secondary system available was the expensive network of traditional aids. The GLAs set out a number of routes that could lead to a reduction in the traditional aids, bringing with it a significant reduction in costs. This included:

- The provision of a ground based radionavigation backup to satellite navigation that ensured that any failure of the satellite signal would not result in a total loss of an electronic position fixing. Powers exist for the GLAs to operate such a signal, known as Loran C, and a UK experimental signal has been transmitted since June 2005.
- The adoption of AIS to improve position fixing information.

AIS has been fitted to all SOLAS vessels over 300 tons on international voyages from January 2005. It transmits data from the ship identifying the name, destination, course, cargo etc to states for security purposes and to assist in ship and port management. The prime driver here is the increased security requirements developed after the attack on New York in September 2001.

The ship can also receive information on the movement of other ships. This can be shown on a visual display on the Bridge. AIS units can be fitted to aids to navigation so that they also appear on this display, showing information on their location with the possibility in the future of adding data on weather conditions tidal flow and depth of water. The aids to navigation will also be able to transmit information to the GLAs themselves if they fail or, in the case of floating aids, escape from their moorings and move off station. Thus the GLAs will be able to utilise technology already fitted to vessels for security reasons to enhance the aids to navigation service at no direct cost to the user.

A Strategy Paper, jointly prepared by the Department for Transport, the MCA and the GLAs, on making the best use of AIS was published in March 2006. It explains how the UK Government, through the MCA is taking the lead in the development and application of AIS. The GLAs have been exploring in parallel the potential of AIS for navigation. In the short term the GLAs will have to meet the development costs and equip a selection of the aids to navigation with AIS units. These costs will be met from light dues paid primarily by commercial shipping, who will be the principle beneficiaries of the system and benefits. The Department is responsible for setting light dues rates and does not expect to have to adjust rates to meet the costs of AIS provision, which can be contained within the GLAs operating costs.

In the longer term in the period up to 2020, the investment in AIS is expected to contribute (with the Loran C signal mentioned above) to a substantial reduction in overall costs. Savings are expected to come from:

- Reduced expenditure on traditional aids to navigation. Some will be discontinued, others down graded to smaller installations, for example the light ships delineating the Dover Straits Channel separation scheme could be down graded to buoys transmitting an AIS signal.
- Later developments of AIS will permit the transmission of an AIS signal from the land. This would allow a buoy or emergency mark to appear on the ships on board AIS display in the same way as a normal aid to navigation but it would not require a physical presence at sea. This would allow the immediate marking of wrecks rather than waiting for a ship to deploy a buoy. In the longer term, some buoys may be withdrawn altogether. This would enable substantial savings in the GLA fleet and labour costs.

At the current time traditional aids account for around 95% of running cost expenditure. Light dues have been either held at current rates or reduced since 1993. The combination of Loran and AIS opens the option of further reductions or maintaining current rates for the foreseeable future following the latest reduction in April 2006.

Rationale for government intervention

The safety of shipping in European waters is of crucial importance: 90% of the European Union's trade with third party countries is seaborne. The risk of accidents due to the concentration of traffic in the main European seaways is particularly high in areas where the traffic converges, such as the Dover Strait. Environmental consequences from an accident at sea can be disastrous for the economy and the environment of all coastal EU Member States. The clean up after an accident such as the Erika costs of the order of a million pounds.

Any adjustment in the provision of aids to navigation must ensure that navigational safety standards are maintained or improved. The ships using UK ports and using the major navigation lanes are now approaching the maximum draughts that can pass through key traffic lanes such as the Dover Strait. In some cases this is increasing the requirement for traditional aids to navigation to more precisely mark navigation channels. AIS will permit tighter control of the sea lanes.

The UK has welcomed the introduction of AIS and Loran C as a significant contribution to maritime safety while offering the prospect of reducing costs.

3. CONSULTATION

Public Consultation

The GLAs consulted users during 2003/04 to establish views on the overall requirement for marine aids to navigation for the period up to 2020. This accepted that satellite navigation was established as the major aid to navigation but support was required from an independent system. At present this could only be delivered by the retention of traditional aids to navigation as the secondary system. These were expensive to operate but were and remain the only available alternative system that was truly independent. The consultation noted that this position could change if:

- An independent ground based radionavigation system was available
- AIS could be developed as an aid to navigation.

The consultation received wide support and was formally adopted as UK policy by DfT Ministers in October 2004. Accordingly the GLAs are operating a trial of an independent ground based radionavigation system, known as Loran C in conjunction with other European countries. It seeks to take advantage of the AIS infrastructure to supplement traditional aids to navigation in the short term and to replace selected aids in the longer term. In March 2006 the Minister announced the development of a UK electronic navigation policy to encompass both Loran and AIS leading to less reliance on the traditional aids. It was accepted that significant progress was dependent on international acceptance and adoption of new systems.

4. OPTIONS

Option 1: do nothing

The UK would be out of line with international policy. It would have to retain the existing expensive infrastructure of traditional aids to support satellite navigation. UK light dues would have to rise in line with engineering inflation rates from about 2009 to meet costs. Most of the AIS infrastructure is required for security purposes and the UK would loose the benefit of the enhanced navigation capability.

Option 2: Declare AIS to be marine aids to navigation

UK aids to navigation will be in line with international standards. Cost savings should be achieved as traditional aids are decommissioned and reduced in range.

5. COSTS AND BENEFITS

Sectors and groups affected

AIS users identified include Government Departments, statutory bodies and the shipping and ports industries and other potential commercial customers. The MCA will engage these stakeholders and customers to explore their full requirements. The system will be developed to supply data in a variety of formats and types, though responsibility for importing this data into customer/stakeholder systems will rest with the customer/stakeholder and not with the MCA.

AIS has been fitted to all vessels over 300 tonnes since January 2005. The prime driver here is the increased security requirements required since September 2001. There is no additional cost for industry resulting from the use of AIS for safety purposes.

Benefits

Option 1:

We are unable to identify a benefit from this option.

Option 2:

The application of AIS will maximise the safe and efficient operation of shipping through the provision of improved vessel identification and vessel traffic information services.

Environmental benefits will result through improved marine safety and a reduction in energy usage of existing aids together with reduced environmental cost of servicing.

Ports and shipping industries will benefit from an increase in safety and an improvement in efficiency, together with a reduction in GLA costs.

Costs

Option 1: DfT estimates that light dues will have to be raised in line with inflation from 2009 if the current network of traditional aids is retained. All other economies – notably the streamlining of ships and depots will have been achieved by 2009. Assuming 3% per annum inflation in engineering costs, light dues income would have to rise from an estimated £75 m per annum in 2009 to around £100 million by 2020. With an estimated 95% of expenditure dedicated to traditional aids, future savings must be derived from the streamlining of traditional aids. This progression relies to a large extent on international progress in adoption of AIS and Loran.

Option 2: Costs will be met from the GLF reserve in the short term, and recovered from efficiency savings. This will come from the predicted reduction on expenditure on traditional AtoNs.

Experimental costs prior to declaring AIS as an AtoN are estimated at £300k per annum, a total of £600k, from the GLF reserve funds. When AIS is deployed as a statutory aid to navigation, we estimate capital costs of £2 million to roll out the installations, spent over around 3 years from 2006. This is equivalent to about an additional 1p on the current light dues charges, currently 35 per net ton for a single year. This expenditure will not be passed onto the industry as a direct increase.

Other costs

The MCA are providing shore infrastructure for receiving AIS signals and electronic data from ports as part of the AIS security network. The MCA has so far spent £1.1m out of a total committed expenditure to 2006/07 of £2.7m. We are not aware of any other costs.

6. SMALL FIRMS IMPACT TEST

The economic impact of light dues on UK economic activity is minimal. The installation of a core AIS national network has the potential to reduce traditional aids to navigation and ensure that DfT can maintain light dues at reduced levels over the longer term.

7. COMPETITION ASSESSMENT

All SOLAS registered countries are developing the use of AIS for both security and navigation purposes. AIS will have no adverse implications for UK competitiveness.

8. ENFORCEMENT, SANCTIONS AND MONITORING

AIS will provide information to ships about the type, position and functioning of aids to navigation to ensure vessel and mariner safety. As an aid to navigation no enforcement is required.

Monitoring of the introduction of AIS for safety of navigation will be achieved by inclusion in the GLA annual plans and by the annual light due review.

9. IMPLEMENTATION AND DELIVERY PLAN

Ships will require an AIS graphic display to take full advantage of the AIS aids to navigation support. Vessels over 300 tons are already required to fit AIS and enhanced displays can be expected to be added in line with international requirements. There are no direct costs to the ship owner as a result of the UK adopting this policy.

10. POST- IMPLEMENTATION REVIEW

As there are no costs associated with this SI, no specific review is proposed. The overall marine navigation requirement is reviewed by the GLAs and DfT every 5 years.

11. SUMMARY AND RECOMMENDATION

Option 2, the adoption of AIS as an aid to navigation is recommended. It builds on the UK AIS infrastructure that is already in operation, providing an enhanced aid to navigation service. It has negligible costs in the short term while offering significant savings in the longer term.

Summary Costs and Benefits Table

Option	Total benefit per annum, economic, environmental, social	Total cost per annum: - economic, environmental, social - policy and administrative
1	No benefits have been identified from this option.	Lights dues will be raised in line with inflation from 2009 if the current network of traditional aids is retained.
2	Reduction in GLA costs for provision and maintenance of traditional aids to navigation. AIS puts in place an effective vessel identification, vessel movement and traffic information service. AIS will provide a safety related information system that will allow the sending and receiving of safety messages, such as navigational warnings. This will facilitate passage planning and enhance safety of the marine environment. Enables efficient co-ordination and response to search and rescue and counter pollution	Experimental costs for development of AIS are estimated at £300K per annum, a total of £600K. Capital costs for AIS installations are estimated at £2m over 3 years. These costs will be recovered from GLA efficiency savings obtained through the reduction on expenditure on traditional aids to navigation.

	incidents.	

12. DECLARATION AND PUBLICATION

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed…***Stephen Ladyman***

STEPHEN LADYMAN

Minister of State
Department for Transport

Date: 8th June 2006

Contact

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