

The Deputy Clerk's Report on Progress Towards Remote Tracking of Vessels Operating under Wash Fishery Order licences.

For some time the Joint Committee has been investigating the potential to use technology as a fisheries enforcement and management tool to track fishing vessels. Various technologies have been investigated including satellite Vessel Monitoring Systems (VMS) and VHF Automatic Identification Systems (AIS). There are advantages and disadvantages with each system, most notably the cost of their installation and operation and the ability for everybody to see a vessel's location respectively. Vessel tracking is globally becoming one of the most widespread and effective methods of managing activities (fishing, transport, aggregate extraction) operating within the marine environment. These systems enable managers to remotely monitor compliance with closed areas and to effectively deploy enforcement assets or instigate investigative procedures. Vessel tracking also provides marine managers with a powerful tool that can aid stock assessments and identify habitats and areas that are important to the fishing industry; this information can then be used to inform decisions with regards to marine spatial planning which obviously have the potential to impact upon commercial and recreational fishing activities.

The Clerk had previously asked the Joint Committee's solicitors, AMJ Jackson, for advice concerning the ability of the Committee to either make it a licence condition for vessels operating under the Wash Fishery Order or as a Byelaw for vessel owners to be required to install a system of vessel tracking. A detailed investigation was carried out into the applicability of the AIS system, which transmits a vessel's position using VHF radio waves to shore based monitoring stations. AIS systems can be purchased and installed for about £1,000 per vessel without significant on-costs as no airtime fees are incurred. It should be noted that it is mandatory for large commercial vessels greater than 300 tonnes to operate the AIS system.

The draw back with this system is that positional information (transmitted in real time) can be monitored by any individual with internet access for the payment of a minimal licence fee. However, in the situation where only those beds which can be fairly limited in size are open to fishermen to fish for prescribed species under the Wash Fishery Order 1992 (WFO 1992), this issue is not considered significant, particularly as the Joint Committee publishes and freely provides survey information identifying the location of stocks. Due to the fact that a vessel's position can be determined by people other than those employed by the Joint Committee it was deemed prudent to seek legal advice with regards to the implications of the Privacy and Electronic Communications (EC Directive) Regulations 2003 and the Data Protection Act 1998. The Joint Committee upon request authorised the Clerk to instruct Counsel to provide a legal opinion on this matter. On the basis of opinion and following a recommendation from AMJ Jackson solicitors, the Clerk wrote to Defra to inform them that the Joint Committee may wish to introduce a system to track fishing vessels using AIS through a licence condition or Regulation of the WFO 1992.

Defra responded to the Clerk's request for guidance in July 2008, indicating that it would be more appropriate to introduce vessel tracking as a WFO 1992 licence condition than as a Regulation. It was made clear that under a licence condition the Minister could provide direction to the Joint Committee if required. Consent would be required from the Minister if the Joint Committee were to introduce a vessel tracking system through a Regulation.

It was decided that it would be prudent for Officers to further investigate the cost and suitability of alternatives to AIS before making a recommendation to the Joint Committee to support a licence condition requiring AIS to be fitted to vessel operating under the WFO 1992.

Several alternative Vessel Monitoring Systems (VMS) are currently deployed across the UK fishing fleet. The primary VMS, uses Sailor Inmarsat Mini-C technology whilst the VMS Lite solution uses the Iridium satellite system for providing "airtime". The UK government went out to tender when commissioning both the national VMS system and the trial VMS Lite system - both tenders were won by Applied Satellite Technology Ltd. (AST) based in Great Yarmouth. Cefas houses the shore based control terminal for both systems. Vessel's positions are output to the Operations Division of the Marine and Fisheries Agency (M&FA) and subsequently provided to M&FA port offices. Both the Royal Navy and Sea Fisheries Committees receive VMS reports through the Royal Navy Surveillance System, which has been in use as enforcement and planning tools by the Joint Committee for the past two years with some success. Both VMS solutions provide confidential,

tamperproof spatial and temporal vessel data which can be provided at user established intervals (typically the VMS unit is polled at two hours intervals and the VMS Lite unit is polled at 15 minute intervals although both systems can provide real time data if required). Approximate costs per report are 12p and 5p for the VMS and VMS Lite systems respectively. Numerous fishermen attempting to tamper with VMS units have been taken to court and found guilty of contravening fishing licence conditions requiring the owner and skipper of a vessel to maintain an operational VMS unit at all times.

Representatives from AST met with the Clerk and the Deputy Clerk in September 2008 to provide detailed information on the VMS and VMS Lite solutions operated by the M&FA. The VMS system currently deployed on UK fishing vessels over 15m LOA is considered the most secure system operating within Europe. This system provides time and positional information for a fishing vessel to ensure compliance with spatial closures to protect particular fish stocks and compliance with days at sea legislation, in place to cap effort exerted by particular fishing vessels. These tamperproof units run on a 24 volt electrical circuit which enables an internal battery to be charged enabling the vessel's position to be logged continuously even if the power supply is interrupted. The cost of installing and purchasing each unit (approx. £3,500) on new vessels is met by the vessel's owner. The owner is also billed on a monthly basis (approx. £30/month). The cost of computer and administration support to the M&FA is unknown.

VMS Lite runs on a 12 volt system and does not incorporate an internal battery backup/charging unit, therefore if the power supply is interrupted the system stops recording its position; however, once power is restored, the unit automatically sends off the positions at which power was lost and restored. VMS Lite was developed to provide a tracking system that could be used on small fishing vessels taking part in the Environmentally Fishing Project managed by Cefas and funded by Defra. This system was commissioned on a "turn key" basis, costing approximately £90k for a one year trial involving the fitting of units to 30 vessels. This cost included rental and installations of the units, airtime (approximately £20/month), training, licensing of the software, computer and administrative support and hardware.

Officers of the Joint Committee discussed with AST representatives the possibility of developing a tamperproof, self contained system running on 12 volts and incorporating an internal battery backup/charging system so that a vessel's position will continue to be recorded in the event of a disconnection of the unit's power supply. The product development manager undertook to research this technology and report back to the Clerk. Subsequently AST representatives have informed the Deputy Clerk that they are confident that a solution can be obtained. Plans are currently being made to install a prototype onto *RV Three Counties* (the total cost of the trial including installation of the prototype and airtime has been quoted at £325). It is intended that a report on the effectiveness of the prototype unit and the cost of implementing this technology will be reported back to the Joint Committee at the next statutory meeting.

The Joint Committee is asked to receive the report.

Duncan Vaughan
Deputy Clerk & Fishery Officer
22nd October 2008

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985

Background papers:

1. Minutes of the Byelaw Subcommittee meeting 15/08/07.
2. Correspondence from AMJ Jackson Solicitors 01/02/08
3. Correspondence between the Clerk and Chief Fishery Officer and Defra 02/04/08
4. Correspondence between Defra and the Clerk & Chief Fishery Officer 21/07/08