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**MARITIME TRAFFIC SURVEY - 2004**

**THE MINCHES**

**REPORT**

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**Marine and Risk Consultants Limited**

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**THE MINCHES**

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## SUMMARY

MARICO Marine was commissioned in 2003 by the Maritime & Coastguard Agency (MCA) to conduct maritime traffic surveys, of either fourteen or twenty-eight days duration, at a series of designated areas around the UK coastline. The work covered a period of two years, performed during the summer season. The purpose of the surveys was to inform decision-makers about potential risk arising from passing ships to sensitive coastal areas. It allowed routing recommendations to be developed where evidence provided justification. The surveys provide a record of vessel routes taken in the sea area surrounding the chosen locations, whilst obtaining key information and data about passing vessels and craft.

This report presents the findings and conclusions from the maritime traffic survey undertaken in the area of the Minches during the period 3<sup>rd</sup> June to 1<sup>st</sup> July 2004.

The radar coverage required in the Minches area could not be achieved from a single vessel, thus two land based radars were deployed linked by a long distance wireless connection. This allowed the traffic profile along an area of coastline some 60 miles in length and stretching across both sides of the Minches to be recorded. The size and coverage of this survey exceeded all other marine traffic surveys produced to date in UK waters.

Neist Point Lighthouse on Skye and Eilean Glas Lighthouse on Scalpay in the Outer Hebrides, were identified as suitable locations. Permission was granted from Northern Lighthouse Board for access and installation of surveillance equipment at the two sites. Prior to commencement of the survey, scaffold mounted radars with PC based systems were installed at both lighthouses.

Neist Point Lighthouse was used as the manned base for the survey and a temporary AIS Station, Electronic Chart System (ECS) and VHF communication was installed. As there was no direct line of sight to Eilean Glas Lighthouse, it was necessary to establish a relay station for the wireless link of the radars. The MCA site at Rodel on Harris was identified as a suitable location and a relay station installed. The wireless system allowed both radars and all data to be handled at Neist Point.

The MARICO team contacted each passing vessel by VHF radio to acquire voyage information. With experienced mariners collating the data, the survey achieved a target identification rate of 99.6% providing a high quality data set for the track analysis. The recording system tracked 1654 individual targets during the study period from which 1641 were positively identified.

A high level of fishing activity and a multi-national naval exercise occurred within the survey area, which unless isolated, would skew the results of the traffic analysis. Their removal allowed the levels of merchant traffic to be assessed. This resulted in a pool of 496 vessel targets passing through the Minches. Data processing removed items such as rain squalls, land acquisitions or duplicate targets acquired by the recording system (see **Section 3.4** for further details). The

data-set has been analysed to provide statistical data on overall traffic and breakdown by vessel type/size, etc.

Accident data and close-quarter incident reports were obtained for the survey area from the Marine Accident and Investigation Branch (MAIB) archives. The incidents have been overlaid onto a plot of the survey area using a geographical information system (GIS) (see **Annex B**). Plotting of incidents against traffic flows allows risk to be derived in incident frequency terms.

## CONCLUSIONS

The conclusions of the survey and data analysis are as follows:-

1. The levels of traffic were higher than expected compared with previous surveys in the area.
2. A high degree of compliance with the IMO recommendations was observed with nearly all tankers of 10,000 GT and above using the Hebrides deep water route. One laden tanker greater than 10,000 GT was tracked through the Minches during the survey after declaring the reason to be (in accordance with IMO Recommendations) 'stress of weather' to Stornoway Coastguard.
3. The survey was conducted in the summer months; however during the winter, laden tankers are more likely to seek routes through waters that are relatively calmer and offering more protection from the weather as are offered by the Minches, thus avoiding greater stress of weather to the West of the Hebrides. However, the IMO Recommendation on use of the Minches by laden tankers is in operation all year round.
4. There are many small fishing ports along both sides of the Minches and fishing is a key component of the local economy. The track plots for the study area indicate there is significant fishing vessel activity in the Minches, much of this occurring to the west and south of the Neist Point light.
5. Despite the recommended tracks being marked on the charts, many vessels proceeded along them against the indicated direction. A number of large vessels, including passenger ships, ignored the recommended tracks and sailed through the centre of the Minch passing to the east of the Shiant Islands.
6. The current deployment of aids to navigation (lighthouses and buoys) favours use of the recommended tracks.
7. Vessels passing close to Neist Point in opposing directions risk using the same or very similar waypoint positions, causing northbound vessels to be short of sea-room should they need to alter course to avoid collision or a close-quarters situation.

## RECOMMENDATIONS

1. With the economic and environmental importance of the area and the levels of traffic observed, it is appropriate to consider introducing more extensive IMO routeing measures through the Minches. A system including a separation scheme commencing off Neist Point and with further measures extending north to the Shiant Islands to clear the shallows of the Little Minch would assist in separating traffic moving in opposite directions. Fishing vessel activities need to be taken account in any decision to develop such a routeing system.
2. The ETV on charter to the Coastguard does on occasion, escort large vessels through the Minches, though the current instruction or operating criteria does not specify when this should occur and at what position in or beyond the Minches escorting should terminate. The risks would indicate subject to other duties, that current operating policy should be reviewed, for guidance under the control of the MCA District Operations Manager (and HQ Counter Pollution); as it applies to escort duties carried out by the ETV, as a proactive mitigating measure when large vessels (e.g. laden tankers) are in transit through the Minches.

*MCA Note: Passive escorting is already included in the contract for the Western Isles ETV and she undertakes in excess of 100 passive escorts per year. A trial is in hand to increase the efficiency of these escorts by concentrating on the area of the narrows past the Shiant Isles and stationing the ETV off Tarbert (subject to the weather conditions).*