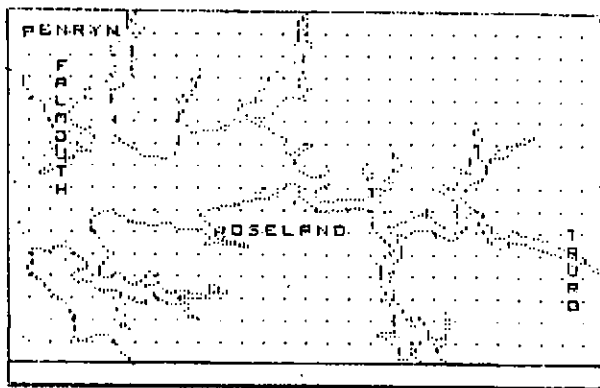


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A NOISE APPRAISAL OF THE FAL ESTUARY

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INTRODUCTION

The Fal Estuary in Cornwall, well known for its leisure industry, is visited by over a million people each summer. Its fine views, its unpolluted environment and almost unparalleled holiday amenities enables visitors to re-charge their batteries after the knocks of urban life.

However, the public visiting the Falmouth and Truro area would be wrong in thinking that the area is always one of seclusion and peace.

What follows is a description of the circumstances which give the residents of the Fal estuary and surrounding areas cause for concern.

In the winter season, from an average of two or three vessels anchored in the bay and the Carrick Roads, there is a sudden increase up to a hundred or more vessels. These consist of factory ships, freezer trawlers and transporters. They will arrive from the main eastern block countries, i.e. Russia, Bulgaria, Rumania, Poland and other countries such as Egypt, positioning themselves so as to permit transshipment of fish from British and Norwegian trawlers.

The main sources of noise associated with this type of shipping are (a) generators for lighting (b) pumps for water and other liquid handling (c) fans providing ventilation to the workforce below decks (d) Tannoy's used for ship to ship communication.

Vessels known as factory trawlers, though not permitted to fish in British or Continental waters, are allowed to tranship from British trawlers (the majority of which are Scottish) freshly caught mackerel. This is then frozen into blocks or is processed for animal food (the smell of which leaves much to be desired!) or simply packed in ice for sale in this country or for export to the continent. It is this activity which has an overall effect on lifting the mean noise background level by 5dB over the whole fishing season in the areas surrounding the anchored vessels.

SPRING AND SUMMER

With the fishing season ending in February the waters again return to September's peace.

Now is the time when pleasure vessels known as 'disco boats' become the cause of disturbance to coastal residents. These mobile discotheques travel around the estuary in the evening and night, much to the delight of their 'lubricated' patrons, less so for the sober locals.

MONITORING BACKGROUND LEVELS

Special arrangements have been made to monitor changes in noise background levels. Carried out with the use of Bruel and Kjaer environmental analysers 'hooked up' to sound level switches, these enable an audible record of noise 'events' to be recorded on tape for later analysis. The attachment of a P.C. Data capture digital recording terminal to the analyser has enabled a capability to store percentile data recordings on a computer disc file. These recordings have been taken on site over a typical measurement period of one to two weeks. Data is then brought off the file and used to demonstrate background level trends throughout the seasons in differing areas.

This specific monitoring is still in progress and is to be continued. Findings, so far, indicate that ships of more than ten years old are most likely to give cause for complaint in low background areas. Activities which are the noisiest and most likely to increase background levels are transshipping operations and the generation of power

Just as one might expect the pattern changes with the seasons and this appraisal is sub-divided accordingly.

AUTUMN

The inhabitants of a hamlet located on the bank of the principal river feeding into the estuary have been subjected to a harrowing noise produced by a variety of generators located on ships laid-up in the vicinity of the King Harry Ferry. The night-time background noise level of this area rarely exceeds 25 dBA (excluding storms) as it is sheltered by hills and from winds below force 3. However, the ships' generators when used (which during this time of the year is two or three times per week) lift the low frequency 31.5 to 400 Hz band, to a level of 50 dBA.

Notice under the Control of Pollution Act 1974 would seem to be the most appropriate course of action. Options open to the recipient are (a) to acoustically shield the generator (b) to provide a land line mains cable (c) to have the vessel removed to a more suitable anchorage point.

Loud low frequency bangs are heard over most of the estuary at this time of the year, the cause being Concorde or other supersonic flights. Damage to residents' houses is becoming more likely although so far as is known no private legal action has been taken.

In the dock area at Falmouth a hovercraft gives rise to complaint - its level exceeding 90 dBA in the immediate environs of the docks. Band saws, tree felling, house and ship building operations also result in complaints from nearby residents and, this being an estuary, also from those on the opposite side of the channel.

Temperature inversion conditions around the Fal estuary and up through adjoining valleys add to any noise produced in the docks area.

WINTER

New light industrial factories are subject to close scrutiny by the officers of the Environmental Services Department and a great deal of consideration is necessary in the low background level areas around the estuary. The night-time background noise levels do not normally exceed 25 - 30 dBA and the day-time L_{90} rarely exceeds 45 dBA, more commonly it is of the order of 30 dBA. An L_{eq} in some quiet areas may be 40 dBA - owing to seagulls and other bird life; later on in the night falling to 35 to 30 dBA. For this reason factory units need to be of a type which can effectively reduce noise levels from light industry. In some situations levels as low as 16 dBA have been recorded - highlighting those areas so easily disturbed by any alteration in the environment. It is against this background that the changes brought about by the winter fishing season and the consequent influx of vessels must be judged.

for ships' lighting.

CONCLUSIONS

With the assistance of the Harbour Master and the Council's Maritime Officer it has been possible throughout the past three years of monitoring to arrange for shipping regarded as suspect to be anchored at a respectable distance from exposed housing areas. It has been determined that when this almost unique floating factory activity began some four years ago, background levels were increased by 8 to 10 dB and many complaints were received about the increase in noise due to these vessels. The fishing season over the past two months i.e. January and February, has been responsible for only a 2dB increase in quiet areas (as a mean average) although there is still cause for concern. A 2dB average increase consists of noise elements which approach nuisance levels in certain areas.

Monitoring operations carried out in previous years, have made it possible to build up a data bank which can be called upon to determine suitable sites for further industry and to work out the likely impact of an oil field exploration base proposed for the Falmouth area.