



# PACIFIC REGION TECHNICAL NOTES

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Okanagan Lake Wind Project

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## INTRODUCTION

Okanagan Lake is one of the most heavily used recreation areas in the province with a wide variety of water related activities 12 months of the year. Winds along this 90 mile long lake are quite variable in both speed and direction. Several times each year winds on the lake attains gale force speeds with little warning. It was therefore a "prime" requirement to expand our wind network from two sites (at Penticton Airport and the Okanagan Lake Lift Bridge) to several if we were to monitor conditions over the water area. An experiment in acquiring wind data at a remote location on the lake was proposed to the Regional Office by a staff member of the Kelowna Weather Office in the fall of 1981. The project was subsequently approved and funds and equipment were supplied in the early spring of 1982. The project was completed and in operation in May of 1982.

## LOCATION

The site of the prototype is on the Federal Government breakwater at Peachland, B.C. and was chosen for its reputation of having strong gusty winds and therefore a potentially hazardous area for small boats (Figure 1).

## EQUIPMENT

The equipment consists of a model 45B anemometer and an electronic package which converts the wind data into audible tones. These tones are received by the Kelowna Weather Office over commercial telephone equipment. The anemometer is located at the top of a tower, 25 feet above the waters of Okanagan Lake and approximately 150 feet from the shoreline.

## OPERATION

The wind data is recorded 5 times a day by the Kelowna Weather Office. The times are: 9:00 AM, 12:00 NOON, 3:00 PM, 6:00 PM, and 8:00 PM. The information is appended to the hourly weather observation from the Kelowna Weather Office (YLW) in the remarks section and is labelled 'Peachland Wind'. The wind is observed to eight points of the compass and the speed is reported in knots.

ASSESSMENT

In assessing the success of the project, several things have been learned. Firstly, the electronic package along with the model 45B anemometer have operated exactly as expected and have been 100 per cent reliable to date with no mechanical or electrical failures. Secondly, the only problem of any significance has been with the exposure. The location is somewhat sheltered to the west by trees of 50 to 75 feet in height which line the shore and by a ridge of hills to the west and northwest. As the prevailing summer winds are from the north, speeds have been light compared to those observed at the Okanagan Lake Bridge site at Kelowna and those observed at the Penticton Airport. It is anticipated that the prevailing southerly winds through the winter months will be picked up fairly well by this location. It should be understood that the most ideal location for exposure is not always practicable when one considers the availability of commercial power, telephone lines and security from vandalism.

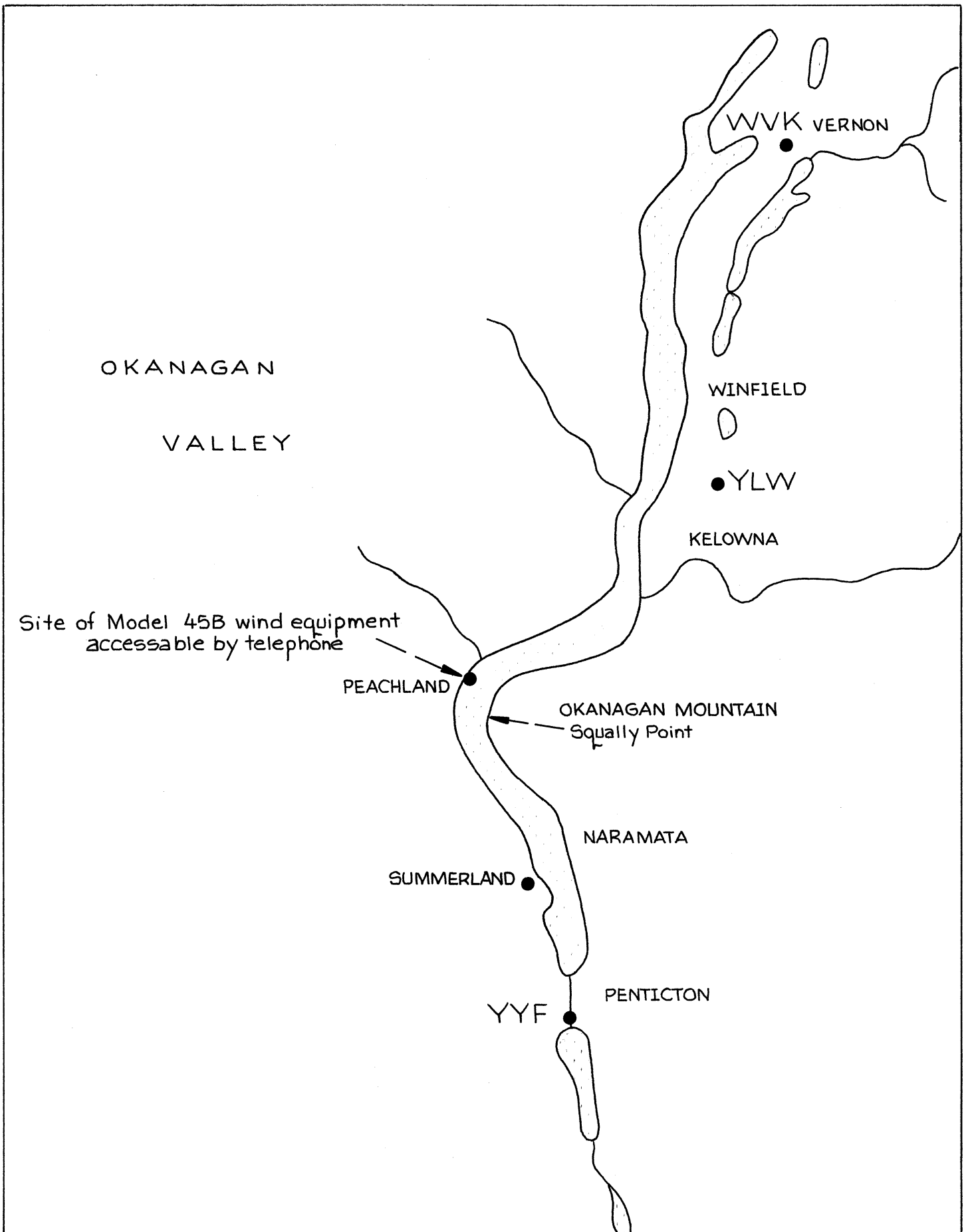


FIGURE 1.