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SOLAR ENERGY, WIND POWER AND GEOTHERMAL ENERGY

Agenda item - Point de l'ordre du jour

II.B.3(a) - Recent developments and potential
improvements in wind power utilization:
For household and other individual uses

Utilisation de l'énergie éolienne:
progrès récent et améliorations possibles:
Usages domestiques et autres usages individuels

**EXPERIENCE WITH JACOBS WIND DRIVEN
ELECTRIC GENERATING PLANT, 1931-1957**

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(See notes overleaf)

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(Voir notes au verso)

EXPERIENCE WITH JACOBS WIND DRIVEN ELECTRIC GENERATING PLANT, 1931-1957

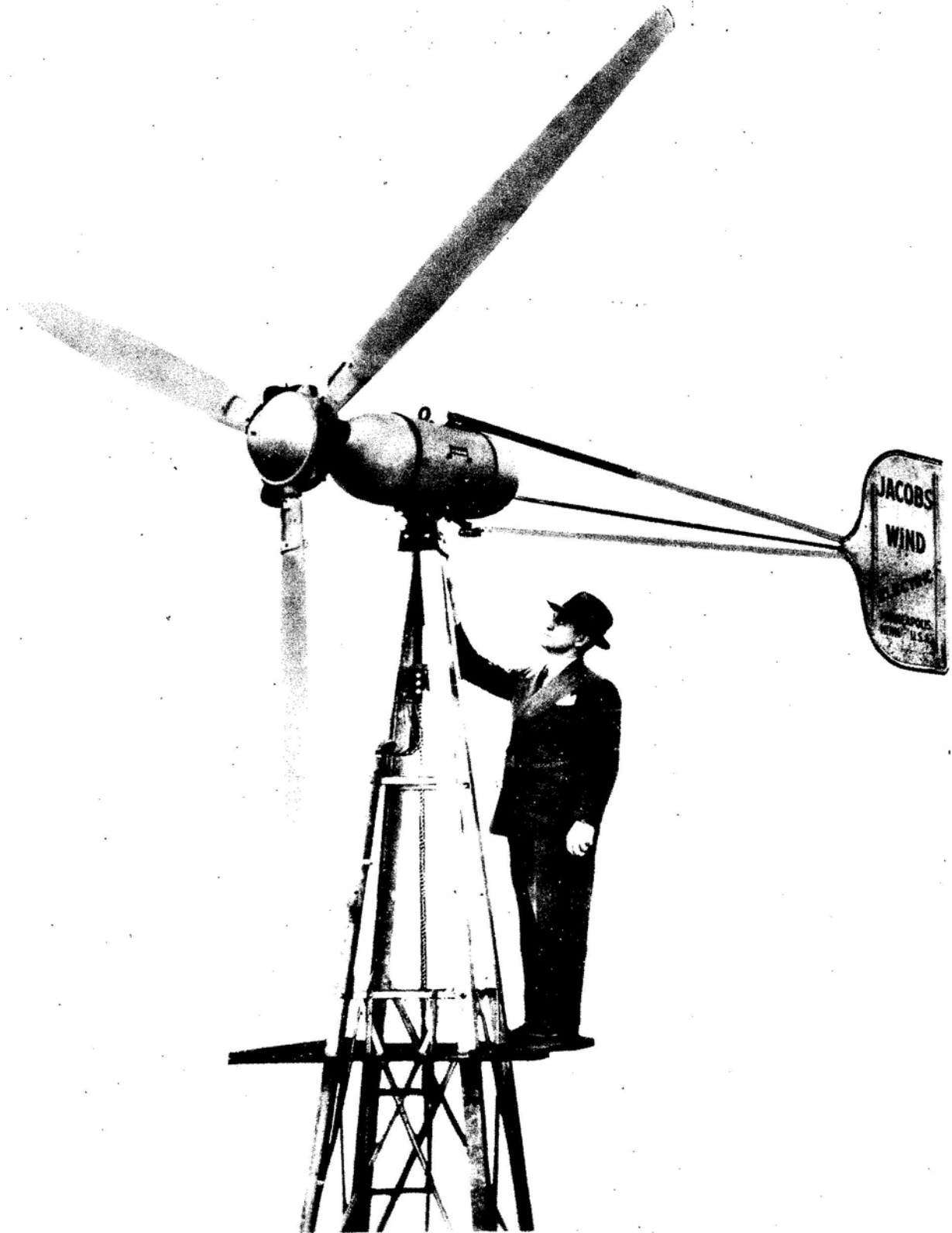
Summary

After several years of testing different types of windmills, a three-blade aeroplane type propeller developed in 1927 was found to be far superior both in power output and in minimizing vibration. A propeller diameter of 15 feet was found to produce ample power, developing 400 to 500 kwh per month in most areas of the western United States with wind speeds ranging from 10 to 20 miles per hour for two to three days per week.

Dual sets of heavy grounding brushes were installed on the armature shaft and a large capacity oil filled condenser connected across the generator brushes and frame to eliminate the otherwise considerable static discharge and damage from lightning, while aluminium painted (copper edged) spruce wood propellers reduced trouble with frost and ice formation.

The total factory cost of the plant of \$1,025, or about \$400.00 per kilowatt, included \$490.00 for a 2500 watt 32 volt plant as well as, optionally, \$360.00 for a 21,000 watt storage battery with a ten-year guarantee and \$175.00 for a self-supporting steel tower. Operating and maintenance costs of the plant are largely limited to the replacement of the storage battery, while according to records kept for more than 1,000 plants over a ten-year period the repair costs have been less than \$5 per year.

Hundreds of these plants, with specially designed generators, are used for the cathodic protection of underground steel pipe lines in several countries.



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