PINE INVENTORY CHECK.

by J. Williamson.

The assessment of plantations for volume figures by Working Plan crews is now based on plots selected at random and measured by the angle count principle. The aim is to put in enough plots to produce an estimate with a sampling error of $\pm$ 5% (at the 95% confidence level) for the most important areas. Larger sampling errors are accepted for less important areas.

In order to test the angle count method and the computer program used to process the plot data, every tree in a selected compartment has been measured. The volume obtained from this complete enumeration has been compared with the estimate of volume from 100 plots measured in the standard way by the angle count principle as used in the pine inventory.

The relevant data and results are as follows:

A. Background information

Species:	P. pinaster
Location: Compartment 28 North Kendall,	Gnangara
Age at complete enumeration:	17 years
Area of Compartment 28:	26.7 acres
Total number of stems on 26.7 acres:	15,372

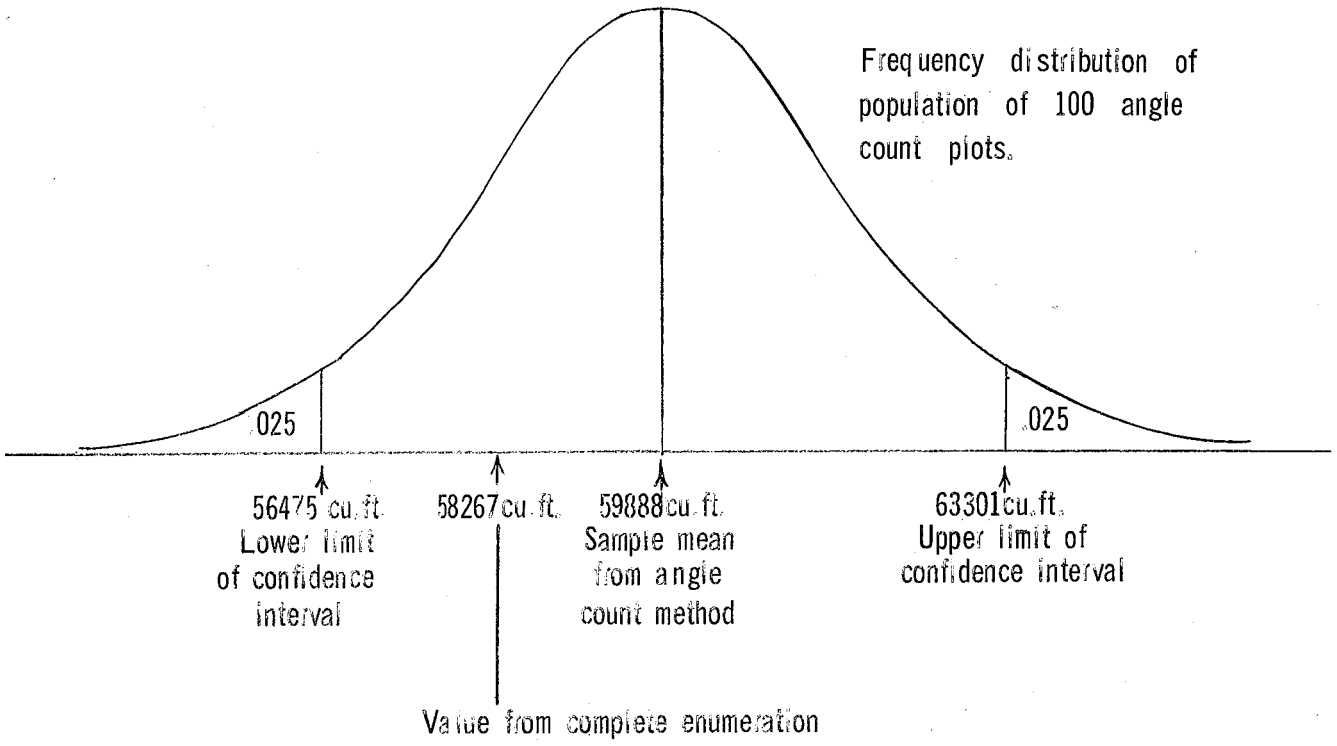
B. Volume information

Complete enumeration (volume U.B. to 2.5" T.D.L. on 26.7 acres)	=	58267 cu. ft.
Volume by angle count method (100 plots)	=	59888 cu. ft. $\pm$ 5.7%
i.e. confidence interval of angle count method = 56475 cu. ft. to 63301 cu. ft.		
Difference = 59888 - 58267	=	1621 cu. ft.
Difference % = 1621/59888	=	2.71%

C. Conclusion

The volume from complete enumeration (58267 cu. ft) lies within the 95% confidence interval of the sample mean from the angle count method. The angle count sampling method can therefore be accepted as quite satisfactory for our pine inventory work.

Diagrammatically, this can be shown as:


Frequency distribution of population of 100 angle count plots.
.025
.025
56475 cu.ft.
Lower limit of confidence interval
58267 cu.ft.
59888 cu.ft.
Sample mean from angle count method
63301 cu.ft.
Upper limit of confidence interval
Value from complete enumeration