AERO-BURNING IN PINE PLANTATIONS

by J. McCormick.

The present advances made by the department in controlled burning operations will only be fully appreciated in the light of its future fire history. I now pause to wonder whether or not the department will be first in the air in so far as controlled burning of pine plantations is concerned. Who knows but that the future workhorse in plantation burning may be that most attractive of all man-made machines, the helicopter.

We can consider three stages at which a P. pinaster plantation may be control burned: firstly, the stand at about fifteen years of age, pruned but unthinned with fuel quantities ranging from five to eighteen tons per acre; secondly, after first thinning and after top disposal burning has been carried out - on foot; and thirdly, the stand at about thirty years of age and over with green crowns at about twenty to fifty feet above ground level. These statistics vary, yet I cannot foresee any great technical difficulty in controlled burning from a helicopter in any or each of the three stand categories mentioned. The danger of crown scorch would decrease with increase in tree height, thus ground area covered by burning would increase considerably with tree age. One assumes that top disposal burns have been carried out on foot whilst tops were in a semi-green condition, thus removing the major scorch element; also, that consideration is given to the moisture content of the 'hang-up' which reaches a critically low state early in September. However, the danger presented by hang-up ignition is virtually removed by thinning, and more so where high pruning has been practised.

Let us look at a plantation as a whole and view the manner in which fuel drying takes place immediately after rain which has caused complete fuel saturations. Firstly, the western edge dries out rapidly and all exposed edges of compartments follow suit, therefore compartment edges, particularly those bordering the west side of the plantation, would be given priority of burning. It will be appreciated that compartment edges will often carry a burn to a depth of one to two chains inward, but that very often several days' drying is necessary before the inside of a compartment will carry a burn. (This applies more so in unthinned compartments with dense canopy cover.) It will also be appreciated that where a spot fire is allowed to run out to a dry compartment edge that this is the area most susceptible to crown scorch.

We are thus presented with a picture of the order in which lighting by helicopter would take place.

(a). The helicopter would buzz plantation and compartment edges immediately they will carry a burn to a distance of at least one chain inward.

(b). On prescription, individual compartments would be taken out as a whole and the helicopter put down at a convenient spot to allow for inspection of the burn in progress and also compartment(s) next for treatment. Average flame heights greater than three feet would not be appreciated. The task of burning by helicopter could only be carried out by a specialised team and then only after considerable ground research.