ABSTRACT

In this thesis, the author has considered the problem of recruitment in a multi graded organization which is subjected to reach the breakdown point due to the exodus of personnel with regard to the policy decisions taken by the organization.

For a two graded manpower system involving two independent random thresholds the author has constructed two mathematical models. The univariate policies of recruitment, based on the shock model approach for these two models are given below:

**Policy 1 (Model 1)**

In Model 1, recruitment is made whenever the cumulative loss of manpower crosses the maximum of the two thresholds.

**Policy 2 (Model 2)**

In this policy recruitment is made whenever the total loss of manpower crosses the minimum of the two thresholds.

For the above two models the author has obtained the mean and variance of the time to recruitment under suitable conditions.

Next, the author has constructed an optimization model for a manpower system wherein the optimal reserve inventory level between two grades is obtained.
Finally, for a three graded manpower system, the author has obtained the mean time for recruitment under suitable conditions using the recruitment policies 1 and 2 appropriately.