KITTAWAT TANGBOONTINA : COMPUTER PROGRAM FOR AIRPORT 3-LAYER FLEXIBLE PABEMENT DESIGN. THESIS ADVISOR : ASSO. PROF.BOONSOM LERDHIRUNWONG, Ph.D., PROF.DIREK LAVANSIRI, Ph.D. 245 pp. ISBN 974-578-789-2

This research is to develops a program to aid in the design of airport 3-layer flexible pavements for multiple wheel aircraft. The method is based on a model in which the pavement structure is regarded as a linear elastic multi-layered system of which the materials are characterised by their modulus of elasticity and Poisson's ratio.

The microcomputer programs were written in Fortran 77 consist of

1. A program to analyze stress and strain within pavement.
2. A program to design thickness for airfield pavement to insure against repetitive load which induced fatigue cracking in asphalt concrete layer and rutting in subgrad layer.

The programs are run to analyze stress, strain and making a check on deformation at a proper boundary layer condition. Layer strains which are the result of the analyzed output are retrieved in the design of pavement thickness for 3-layer system. Pavement thickness by this programs and by manual calculation by MS-11 (manual desing of The Asphalt Institute) were compared.

Thickness of asphalt concrete for 3-layer design of flexible pavement correspond to the existing design method.