Engineering Brief # 37

November 18, 1986

Subject: INFORMATION: Engineering Brief No. 37,
         Computerized Pavement Design

From: Manager, Engineering and Specifications Division, AAS-200
To: All Regions

Attn: Managers, Airports Divisions

Engineering Brief No. 37, Computerized Pavement Design, provides
information and guidance on the use of draft computer programs
for the design of airport pavements.

FAA has contracted the Corps of Engineers to develop computerized
pavement design procedures to assist FAA field engineers in the
review of pavement designs submitted for A.I.P. participation.
The programs are in draft form and are subject to change.

We would appreciate your comments at your convenience.

ORIGINAL SIGNED BY
ROBERT BATES

Robert Bates

ENGINEERING BRIEF NO. 37
COMPUTERIZED PAVEMENT DESIGN

In early 1986 a contract was initiated between FAA and the U. S.
Army Corps of Engineers, Waterways Experiment Station, Vicksburg,
Ms. , to develop a computerized version of the FAA pavement
design procedures. The purpose in developing computerized
procedures is to assist the FAA field project engineers in
reviewing pavement designs.   These computer programs should save
field engineers time in checking proposed design sections. Once
fully developed the programs will be available to the general
public. Distribution details and costs have not yet been
determined.

Enclosed is a diskette which contains a copy of the "first cut"
of the pavement design programs. The programs are set up to run
on a personal computer using MS/DOS. The diskette contains both
flexible and rigid pavement design procedures. The programs are
code named F6llFAA and R6llFAA. The codes stand for the
following:

F = flexible pavement
6 = 1986
11 = November
FAA = Federal Aviation Administration

R = rigid pavement
6 = 1986
11 = November
FAA = Federal Aviation Administration

To execute the programs, insert diskette into the disk drive and
at the prompt enter, either F6llFAA for flexible pavement design,
or R6llFAA for rigid pavement design. The appropriate program
should come up on the screen. There are no manuals for the
programs. Instructions will appear as prompts on the screen.

The programs are in draft form and may contain some "bugs". We
have not yet tested the programs.

Also some of the proposed changes contained in the draft version
of AC 150/5320-6D are included and are subject to change. For
example, the draft of AC 150/5320-6D allows the use of Item P-208
as base course for heavy load flexible pavement, F611FAA also
allows P-208 base course. This may change as a result of the
comments we receive during the review of AC 150/5320-6D.

Note that the frost design considerations are based on the military frost design procedures and may not make sense to FAA users.

The programs are not validated as extensively as the earlier PCN program. Erroneous data can be entered and the programs will still execute - example, unrealistic CBR values can be input and the f6llfaa program will run. This represents a trade-off we are trying. A validated program is generally slower to run as each input is checked for reasonableness; an unvalidated program takes the data and runs.

The draft version is being sent out at this time to illustrate how the programs work, to allow the field offices to become familiar with them, and to test the programs before they are released to the public.

We would appreciate your comments on the programs (usefulness, errors, omissions., etc.). Bear in mind that the results should be considered as draft and not used as the basis for approval of designs funded under A.I.P.

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