

# Computer To Aid Engineers

In the not too distant future, the Central and Southern Florida Flood Control District will have a mathematical model of the Kissimmee River Basin to be used in their electronic data processing system that is expected to provide considerable assistance in the management of water in the river basin.

And within a few years it may be possible that the IBM computer, located at the FCD main office in West Palm Beach, will have the ability to open and close structures throughout the District, change water elevations in various basins, and provide detailed hydrological data, upon the command of the operator sitting in the main office.

W. V. Storch, director of engineering,

points out that the tie up between computer and the telemetric system now being installed, does not mean that water in central and southern Florida will be controlled by an electronic brain. But it does mean that engineers will have a valuable tool, that they do not now have, to assist them in making judgement decisions.

The telemetric system will make it possible by electronic means to operate most structures by radio beam from the main office. On the other side of the coin, water gauges, rainfall gauges and other hydrological equipment throughout central and south Florida will also be linked with the telemetric system and will send gauge readings by radio to a tape

punching machine that in turn can feed all of this information directly into the computer without manual processing.

First goal in the computer program will be to build a mathematical model of the Kissimmee River. If the results are as favorable as expected this will be followed by a model for the Upper St. Johns Valley and possibly with a model for the entire Flood Control District.

To build the first model, engineers will use excellent data obtained during past recorded history in the Taylor Creek Basin. The basic model will then be fit to the various sub-basins of the Kissimmee area where past records are not as complete. After the model has been constructed, it will be "tuned" by feeding historic water conditions into it and determining if the end results predicted by the computer are the same as those recorded. From this point it is only a step to test the model by feeding it current statistics and seeing if the computer accurately predicts the results.

Under the original concept, the FCD was concerned with only one problem, that of floods. Water control was fairly simple. The Corps of Engineers has developed a management plan for these facilities. Certain water stages were established and water was held, or released automatically to fit in with certain dates.

However, since that time, the number of water use categories have been increased, and this increase has complicated the management problems. Now being considered by the FCD in its water control are such factors as flood control, fishery values, wildlife values, weed control, recreational and navigation use, water quality control, domestic water supply, irrigation and esthetics. It can readily be seen that with the addition of these numerous beneficial categories, the number of possible choices for decision making is staggering.

Some of the information necessary to put into the computer includes: precipitation at various locations, groundwater



**WORK ON MATHEMATICAL MODEL** — Engineers Bob Hamrick, left, and Len Lindahl plan a mathematical model of the Kissimmee River to be used in the data processing system to give aid in water management practices.

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