

Dr. BATES. We have been making increasing use of consultants in the Department of the Interior. My judgment is we should do a great deal more of this. As I will try to point out in these hearings, I think we are moving into an age where Interior is coming into its own. However, this age of environmental quality must involve not only the scientists and engineers in Interior but all the scientists and engineers in the country who can help in giving our people the right environment and properly managing natural resources.

As I will point out, we must not hesitate to put everybody on this team in any way we can. This means extended use of consultants.

The CHAIRMAN. Very good.

Dr. BATES. I would like to add to the Secretary's remarks my sincere appreciation for this invitation. It resulted in a very critical self-analysis of our program which is very good. I would like also to say in light of your remarks this has not been an easy job because in Interior the line of responsibility goes directly from the man at the top, the Secretary, down through the administrators, operators, and managers, to the engineers and research scientists. Thus, it is very difficult, for an operation like this, to pull out a particular cut because of the completeness of the spectrum. We have done it on a rather arbitrary basis but we think you will be interested.

I would like to say that in addition to the testimony and briefing book, we have, as you observed, various exhibits. I would like to make special mention at this time of the rather inconspicuous electric typewriter in your back room. This typewriter will be "on line" with a computer in Santa Monica, Calif. at the end of the hearing session. It is part of an experimental research program in the Department which will eventually permit any scientist or engineer to attach a portable acoustical device and electric typewriter to a telephone receiver, dial a certain number, and be on the line with a computer just as if he were sitting in front of it. We are just getting into this experiment. I hope if you have a moment you will stop and type out an appropriate question on the typewriter and get an answer from the computer in Santa Monica. We have a limited data base so we cannot answer all the questions.

The CHAIRMAN. We expect you to have that answer at the next meeting.

Dr. BATES. Yes, sir.

In these hearings we are purposely trying to take a forward look as if we were sitting in an automobile in our Department and looking out the windshield. As the Secretary mentioned there are tremendous challenges and opportunities on the horizon. However, there are no paved roads, no easy way we can see to get there. We have a small rear view mirror in front of us which we use to look back on the accomplishments of the past, not so much to cherish them but to take advantage of what we have learned.

As is the case in the business world, there must be a sound investment in order to ultimately realize any opportunity. I want to talk to you about the investment you and the Nation have made in the Department of the Interior. The most important part of this investment, as you have mentioned, is the people.

Let me turn to the first chart which shows the nature of the science and engineering manpower mix in the Department of the Interior.