

**THE SELF ADAPTIVE FLIGHT CONTROL SYSTEMS
SYMPOSIUM**

SESSION VII

**Dr. John Aseltine, Chairman
Space Technology Laboratories**

Dr. John Aseltine
Space Technology Laboratories

I was thinking in connection with the various definitions that have been made of what an adaptive control is, of a book I read a few years ago called Weismannship by Potter. One of the terms in there was the OK word. You may recall that the OK word is a phrase or word that one uses in the practice of "Weismannship" to gain an advantage. It is a word of which no one is quite sure of the definition, but everyone feels that he should know it; therefore, when confronted with it, everyone feels a sense of embarrassment. I feel a certain ambivalence about destroying the utility of the word adaptive, but from the technical point of view I think that it might be well to work in the direction of defining it well enough so it could be taken off the list of OK words.

Professor Truxal this morning gave us as a definition of an adaptive system, one that was designed from the adaptive point of view. I think this is a pretty good one. I would like to say what I think the adaptive point of view is. I think you need three things in this design of an adaptive system. First, you must have a measure of system performance while the system is operating; second, you must have a means for converting this measure of performance into numbers or some measure of how good the performance is; then, finally, you must have a means of using this number to change the system itself.

I think that most of the systems that we call adaptive have these properties at least inherent in them. I would add this to Professor Truxal's definition. The system designed from this point of view would be an adaptive system. I think maybe we will have a little more to say about that during the panel discussion.