Memoirs of a special assistant

Donald F. Hornig

Sputnik, Scientists and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology. By James E. Killian, Jr. Pp. 315. (MIT Press: Cambridge, Massachusetts and London, 1977.) $18.75; £10.50.

IN 1957 the Cold War was at its height and the United States was very conscious of the role of science in determining the relative power of nations, particularly the power of the NATO countries *vis à vis* the Eastern bloc. Radar, sonar, the proximity fuze, the jet engine and nuclear weapons had already changed the nature of warfare. Long range rockets, the feasibility of which had been demonstrated by Germany during the war, were emerging as the nuclear weapons carriers against which there was no known defense. Furthermore, the confidence of the United States in its scientific and technological supremacy had been shaken when the USSR detonated a fission weapon in 1949 and a fusion weapon at substantially the same time as the United States.

Under these circumstances, the feat of the USSR in orbiting a 184-lb satellite, much bigger than that planned by the United States, on October 4, 1957, shocked the American public as well as the political and military communities. Its impact reverberated around the world as others re-assessed the technological and strategic balance and extrapolated what seemed to be extraordinary scientific progress by the Soviet Union to a fear of its impending military superiority.

Dr James R. Killian, Jr, was appointed the first Special Assistant to the President for Science and Technology in the aftermath of Sputnik. This memoir is an account of the events that led to his appointment by President Eisenhower, including his considerable previous contribution leading such efforts as the Technological Capabilities Panel, and his subsequent experiences in shaping a new place for science in the government of the United States. Although he kept no diary, the chronicle is meticulously documented and presents an intimate picture of the way the Eisenhower White House functioned and of the people who participated in it.

Dr Killian initiated the structure of a President's Science Advisory Committee, supported by numerous specialist panels, in the White House, together with science officers at the Assistant Secretary level in the Cabinet departments, which was to continue until the White House science office was terminated by President Nixon in 1973. The longest section of the book is devoted to the work of the President's Science Advisory Committee (PSAC). It was a remarkable group of dedicated, talented people who worked very hard to analyse and understand numerous issues. It participated in and influenced significantly the debate which brought NASA into being and helped to devise a space program. It was deeply involved in the choices among missiles, including the decision to proceed with solid-propellant missiles such as Polaris. It played an important part in evaluating the scientific feasibility of a nuclear test ban. Among other matters in its far-reaching agenda were the formation of an Arms Control and Disarmament Agency, the evaluation of the nuclear-powered aircraft (the cancellation of which it did not recommend until several years later), the establishment of the Federal Council for Science and Technology to secure interagency coordination, and the conduct of a nuclear test outside the atmosphere. Throughout its life, it was deeply interested in the quality of higher education in science and encouraged federal support of basic research.

This memoir gives a picture of a smoothly operating government in which conclusions are reached and decisions taken with little rancour and none of the in-fighting which sometimes characterised the later White House with which this reviewer was acquainted. However, a somewhat different picture emerges from another work, *A Scientist at the White House* (Harvard University: Cambridge, Massachusetts and London; reviewed in *Nature* **266**, 778; 1977), the daily diary of Dr Killian's successor, Professor G. B. Kistiakowsky, who participated in many of the events chronicled in this memoir. In contrast to Dr Killian's detached, Olympian view, which recognises some disagreement and some error but rarely identifies stupidity and certainly not evil, Kistiakowsky's day by day account reveals a human struggle for influence and power in which ego and passion sometimes supplant generosity and reason. Dr Killian's memoir portrays an orderly world in which, for the most part, good sense prevails and the PSAC experiences little but success. Kistiakowsky describes a relative jungle in which advances are followed by retreats and progress is won painfully.

Eisenhower (left), Killian (right) and staff member (centre)

The two accounts supplement each other and together offer an excellent insight into the work of the science advisor and PSAC.

The advisory apparatus set up by Dr Killian is considered by many to be a model for the participation of science in government at the highest level. Dr Killian and the PSAC participated in difficult and important decisions and had the confidence of the President who referred to them as 'my scientists'. Yet, this influence was not maintained in later years; and as recently reconstituted, the office has been restructured and the PSAC eliminated. It is interesting to speculate on the reasons and Dr Killian's memoirs shed light on the factors involved. In part the times were opportune; in part the personal skill and integrity of Dr Killian gained him credibility and helped him to enlist devoted efforts from exceedingly able scientists. Furthermore, the PSAC agenda was focussed on defense, space and arms control. Correspondingly, the PSAC consisted largely of physical scientists with War-time and post-War experience with government and the military, men who knew each other and could work well together.

Now the science advisor must be concerned with economic growth, health, urban problems, and so on. He is asked to coordinate the numerous centres of scientific advice in the government and to provide oversight for a $25x 10^9$ research and development budget. A homogeneous, deliberative PSAC for doing this is hard to imagine. Nevertheless, Dr Killian established the importance of scientific advice at the Presidential level and most of what he initiated has been perpetuated.

This clear and well written memoir ought to be read by anyone interested in science policy and the role of science in government. □

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