CHARGE NUMBER: 4009

PROJECT TITLE: Development Smoke Studies

PROJECT LEADER: B. Goodman

PERIOD COVERED: May, 1981

I. HUMAN SMOKER SIMULATOR

A. Extended Smoking Study

The long-term study is progressing well. Ninety sets of profile recordings have been collected along with weekly subjective ballots from the twelve panelists. They will continue smoking Merit Ultra Lights for another month before they change back to their original brands for final recordings. At the completion of data collection in September, the changes in smoking patterns will be analyzed for trends.

B. Simulator Equipment

A horizontal single-port prototype was tested briefly. The initial experiment indicated that a larger drive motor was needed to meet the maximum desired flow rate of 7000 cc/min. Such a motor has been ordered and will be installed with only minor mechanical changes.

C. Computer Equipment

The new microprocessor and related hardware have been moved into the Simulator lab for evaluation. Computer personnel are modifying software and applications before the final calibration against the original system in the computer room.

II. WRAPPER AND FILLER MODIFICATIONS

A. CO Reduction

Cigarettes were made with 4% and 5.5% shredded aluminum foil in the blend. Delivery determinations showed reductions in the static burn time, puff count, CO, HCN and aldehydes, both per puff and total deliveries. The concept of adding a substance acting as a heat sink will be pursued further by adding aluminum in other forms to reduce the visibility of the shredded foil.

B. Puff Count Studies

With the objective of determining what the number of puffs means to a smoker, two series of models were made for consumer testing. One set of samples was designed around the Merit 85 mm cigarette and another around the Merit Ultra Lights specifications. Puff count increases and reductions of half a puff were achieved by changing the cigarette wrapper with only minor variations to the cigarette RTD or dilution. A series of VP tests has been requested to determine if the consumer can tell the difference of half a puff or even a full puff on otherwise equal cigarettes.