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May 27, 1986

TO: Mr. J. A. Herberger
FROM: A. T. Sterling
RE: Project ATF - Development Status

The purpose of this memo is to summarize the status of the ATF technology and review next steps.

At a recent status meeting, R&D reviewed progress to-date which generally confirmed that the technology is feasible and practical. This document will present the key issues that will need to be addressed as product development progresses.

STATUS/ISSUES

Product development is essentially proceeding on two avenues, filter technology and blend development.

Filter Technology

- R&D has concluded with Marketing's concurrence that future development should be directed solely against the shredded filter versus the particle filter. In early prototypes, the particle filter had a tendency to break apart, releasing tobacco into the smoker's mouth. This is a major drawback from a consumer standpoint and one that is avoided with the shredded tobacco technology.
- The filter will be made with flue-cured tobaccos. This will provide the lighter color desired to reinforce perceptions of milder and smoother tobaccos.
- Production equipment (tobacco shredder and filter maker) will be operational by the end of June. This will enable production prototypes to be consumer tested. The equipment is of sufficient size to support a limited market introduction when necessary.

At this point in time, two issues have been identified with respect to filter technology - moisture and filter performance.

- Prototypes constructed to date have either been too dry (8% moisture), resulting in dry, stale, harshness related comments in qualitative testing to too moist (14-15% moisture) causing manufacturing problems. The target is 10% which will be evaluated in July for production feasibility as well as product performance.

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Filter Technology (continued)

- The actual performance characteristics of the filter remain a critical issue. While filter efficiency is comparable to cellulose acetate with respect to tar removal, differences are apparent in the removal of other compounds. At issue is how this difference is manifested in taste delivery. Development efforts are concentrated on learning the taste and delivery impact of the filter, rather than duplicating the characteristics of cellulose acetate filters. Once this learning is attained, the appropriate direction can be taken to formulate final prototypes.

Blend Development

- Blend development is proceeding with low nicotine blends in recognition of the taste perceptions inherent to ATF, i.e., strong, harsh, etc. The mild, lower strength delivery of a low tar blend will be used to offset the perceived delivery of ATF.
- FFLT development to date has been in the 11-12 mg. range. In R&D's opinion, the early prototypes revealed a tendency for the flavor from G-7 to pass through the filter. This suggests that a greater understanding of the filter's actual performance is necessary and that blends must be formulated in recognition of the filter's qualities.

NEXT STEPS

Equipment

- Filter production equipment is anticipated to be operational by the end of June. At that time, prototypes will be produced in the same conditions as would be encountered in a full production facility.

Prototypes

- A variety of prototypes will be produced for testing that encompass the following range of filter configurations as well as blend variations.

Four filter configurations

- Tobacco alone
- Tobacco mouthpiece/Cellulose acetate plug combination (to determine impact on filtration and taste)
- Cellulose acetate mouthpiece/Tobacco plug combination
- Cellulose acetate control

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NEXT STEPS (continued)


Five blend variations

- 10-11 mg. tar, low nicotine blend
- CAMEL 70 based blend
- Two low nicotine blends to counteract harshness perceptions
- Increased dilution on 10-11 mg. blend to reduce tar level and perceptions of strength

Prototype Testing

- Prototypes will be subjected to the following internal and consumer tests to evaluate the perceived and actual properties of ATF:
 1. Informal, internal smoking session to screen blend differences.
 2. Internal diagnostic panel evaluation on blind and identified basis to describe smoking characteristics of ATF.
 3. Qualitative consumer evaluation coincident with the internal panel study to provide an assessment of the differences between perceived and actual taste characteristics and the magnitude of those differences.
 4. Aging study to determine the physical stability of ATF over time and the effect of aging on smoking characteristics.

In summary, progress to date suggests that the ATF technology is feasible and practical. By the end of June, equipment will be operational to make production quality prototypes. Internal and qualitative consumer testing of these prototypes will provide learning as to the perceived and actual smoking characteristics of ATF. Based upon that learning, blend development will proceed in preparation for quantitative consumer testing of prototypes in the 4th quarter, 1986.


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