Summary

Aviation gasoline is expected to be available in the foreseeable future, although as a low-volume specialty product. Distribution is seen as the major cost and availability problem.

Several speakers indicated that motor gasoline performance in low-compression ratio aircraft engines has generally been satisfactory. However, there are problems in assuring compliance with certification requirements for motor gasoline, particularly due to the use of oxygenates. Nevertheless, automotive gasoline specifications are not expected to be influenced by the relatively small requirement for aviation use.

One investigator found adequate performance of alcohols and other alternative fuels in 50-h exploratory tests. A Federal Aviation Administration investigation showed that vapor lock and phase separation characteristics make alcohol/motor gasoline blends unsuitable in today's engines.

Traditional aircraft engine manufacturers are not developing new engines to operate on alternate fuels because they cannot support research and development on current meager engine sales. These manufacturers will continue to certify engines on aviation gasoline and will not approve the use of motor gasoline. However, two emerging engine sources described differing new engines that will operate on readily available fuels. A third engine with multifuel possibilities could be developed for aircraft use as well.

From the standpoint of future ASTM work, there is no drive for major revisions of aviation gasoline characteristics. Instead, one airframe manufacturer proposed that ASTM consider the creation of one or more aviation grades based on motor gasoline, letting the marketplace decide on the practicality of this approach.

Kurt H. Strauss

Petroleum Fuels Consultant, Poughkeepsie, NY 12601; symposium cochairman and editor.