





















# PAFI Steering Group (PSG)

## *Purpose*

Facilitate, coordinate, expedite, promote and oversee the Piston Aviation Fuels Initiative (PAFI) based on the recommendations of the UAT ARC Final Report

## *Members*

AOPA - Aircraft Owners and Pilots Association

API - American Petroleum Institute

EAA - Experimental Aircraft Association

GAMA - General Aviation Manufacturers Association

NATA - National Air Transportation Association

NBAA - National Business Aircraft Association

FAA - Federal Aviation Administration











# Q & A (2)

- Q - We know our industry is keen to achieve replacement for Avgas as soon as possible. **The SIR appears to be able to allow fuels to progress into phase 2 earlier than 2016 (at least by 1<sup>st</sup> April 2015)** given they are able to demonstrate a more mature state of readiness and to have its performance verified. Can you confirm this is the case and will the SIR be modified formally to reflect this important detail?
- A - The SIR does indeed allow us to request fuels for entry into Phase 2 as early as April 2015. Therefore the SIR does not need to be modified to reflect this. If fuels accepted into Phase 1 have an extensive data package that is evaluated and deemed to meet Phase I data requirement, it is the intent of the FAA to consider utilizing such test data. If it turns out that offeror-provided data does allow PAFI to accelerate the test program, the SIR has the flexibility to accommodate that. It is worth noting, however, that the current PAFI test program schedule is quite aggressive. Flexibility to accelerate the program was built into the SIR, but the makeup of the fuels submitted will have a large impact on the Phase 1 and Phase 2 test program, and will strongly influence our path forward, and therefore our ability to alter the currently anticipated test schedule.

# Q & A (3)

- Q - More recent available information on fuel development programs suggest that at least one fuel has a state of readiness significantly in advance of that apparently assumed by the SIR. **In what ways will the SIR be modified to reflect current states of readiness?**
- A - The ultimate objective of the SIR is to provide technical data to support both ASTM specification development and FAA fleetwide certification. Therefore, even a fuel with an existing ASTM specification will still need to be tested to generate the data necessary to support the FAA fleetwide certification approval. As noted above, the SIR already allows the FAA significant flexibility in when the various Phases will take place. It is the intent of the program to perform some minimum set of tests in both Phases 1 and 2 to provide validation of offeror data and to ensure standardized comparable data in critical areas. Currently we do not see a need to modify the SIR. However, if programmatic changes beyond those currently afforded by the SIR are indicated, we will incorporate needed changes and post such changes in a revised SIR on the FAA contracting website.

# Q & A (6)

- Q - I note the ARC states - a selection process will need to be established in order for FAA to select a limited number of the most promising fuels for testing. **What will be the criteria used for selection of fuels as they move from phase 1 to phase 2. in the SIR phases?**
- A - The entrance criteria for Phase 1 and 2 are published in the SIR. Phase 1 data will be evaluated to select candidate Phase 2 fuels based on the selection criteria published in the SIR. The TEC will again develop an evaluation plan for Phase 2 and utilize this plan to select the fuels with the least impact on the current piston engine fleet. Note that the offeror may update their preliminary feasibility assessment prior to Phase 2 evaluation, based on the Phase 1 data.

## Criteria

### **Factor 1: Fuel Properties and Performance**

Fuel Performance, Aircraft Engine Performance, Rig/Component Testing, Materials Compatibility

### **Factor 2: Fuel Deployment Feasibility**

Impact on Existing Aircraft Fleet, Environmental Impact of the Candidate Fuel, Fuel Definition and Control, Producibility and Cost of Candidate Fuel, Impact on Existing Avgas Distribution Infrastructure

# Q & A (8)

- **Q - Fleet Wide Certification/Approval:** The UAT ARC recommends the FAA develop specialized policy and procedures to facilitate the most efficient approach possible for fleet-wide approval of aircraft and engines to use a new aviation gasoline and calls for a replacement fuel for leaded aviation gasoline being available by 2018. Others have said that the approval process should be achievable in 3-4 years from now.
  - What is FAA view of when fleet-wide certification is possible?
  - What will be process and key milestones for achieving fleet wide certification?
  - When can you confirm that this approval will be completed by the FAA?
- **A -** The FAA considers the development of a fleet-wide certification plan to be a critical element of the PAFI process. The extent of the fleet that will be covered by “fleetwide certification” will be dependent upon the fuel properties, composition, and fleet impact, as determined by the Phase 1 and Phase 2 test programs. We recognize that each fuel exiting Phase 2 may require a unique fleetwide approval plan. The level of similarity or deviation of the unleaded fuels to 100LL will drive both the impact on the fleet and the available fleetwide certification options. We will be better able to identify and develop available options when we know the properties and compositions of the fuels that are accepted into Phase 1. We will provide a fleetwide certification data package and process for each fuel as an output of the Phase 2 test program – currently scheduled to complete not later than 2018.

# Q & A (9)

- Q - The complexity of the technical challenge for Fleet Wide Certification appears to recommend the PAFI program have access to a wide range of experts. We note that some UAT ARC member organization have been excluded from the TAC while arguably almost every sitting member has a vested interest in the decisions taken. **Will TAC participation be reviewed in near future for increased inclusiveness?**
- A - The TAC consists of a diverse group of industry members chosen by the FAA including OEM product manufacturers and other key stakeholders who can be called upon to provide “in-kind” support in the form of Subject Matter Experts (SME’s) as need to support specific PAFI tasks. In addition, TAC members may be requested to furnish “in-kind” support in the form of materials, equipment or services. Due to the competitive nature of the SIR solicitation as governed by FAA contractual and legal guidelines, inclusion on the TAC of a representative from a respondent to the SIR poses a potential conflict of interest relative to those respondents not represented on the TAC, or could create the appearance of a conflict of interest. It is our intent to invite all participants in Phase 1 and 2 to participate in the TAC. As indicated on the FAA Website, the current TAC membership represents an initial listing and is subject to change as the program progresses. Availability of the TAC is crucial to the ultimate success of the program. PAFI management will continue to monitor the TAC for necessary adjustments as may be required to meet program needs. **NOTE: The FAA takes the conflict of interest principle very seriously and the process will be carefully monitored by the Contracting Officer and the FAA’s legal office. Any questions presented by the evaluation team for TAC consideration will go through the Contracting Officer, to ensure responses to same will not prejudice/unfairly benefit any offeror.**

# Q & A (13)

- Q - There is likely to be some sensitive intellectual property. How is that going to be handled? It can sometimes take years for a patent to issue. And the holder of the IP may want to revise the scope of the patent work late in the process - - and any earlier public disclosures would possibly prevent that follow on intellectual property protection.
- A - The members of the Technical Evaluation Committee (TEC) that evaluate the proposals have been vetted for Conflict of Interest and will have signed Non-Disclosure Agreements. Per the FAA Employee Code of Conduct, FAA employees (i.e. the employees in AIR-20 and at the FAA Tech Center) must safeguard proprietary information. Offerors should clearly mark their data as appropriate, and FAA procedures require checking with the owner of the data before the release of any information. As candidate fuels are accepted for entry into the various phases of the test program, agreements will be signed which will address the safeguarding of proprietary information, and will include provisions regarding when data can be made public. All the provisions of the agreements for Phase 1 and Phase 2 will be understood before any offeror commits to participate.

# Q & A (15)

- Q - Impact on the fleet - - how will cost verses % of fleet that can use (cannot use) the fuel be weighed such as deviation from historic deviation properties?
- A - The SIR includes a requirement for submittal of a Business Plan, which should address the issues of cost and % of fleet that can use the fuel. Cost and fleet applicability are just two of the criteria that will be used in the assessment of fleet impact. The TEC has been established and is in the process of finalizing the Evaluation Plan for candidate fuels for entry into Phase 1. The Evaluation Plan will have grading criteria for each of the individual core elements contained in the SIR and each of these individual grades will be combined for an aggregate grade of each submitted fuel. The reviewers will make use of the offeror's Business Plans and other data submitted in the data package when grading the proposals for fleet impact.

# Q & A (17)

- Q - How will low levels of toxicity be evaluated? Compared to TEL? Or otherwise?
- A - We are going to compare candidate fuels relative to 100LL and other conventional transportation fuels. The goal is to remove lead due to environmental concerns. Any new fuel formulation should not present toxicological or environmental risks. Environmental impact is an evaluation element in the Phase 1 selection process and it is not anticipated that the evaluation will be limited solely to comparisons to TEL toxicity.

# Q & A (18)

- Q - Will any toxicity level that is less severe than TEL be deemed acceptable ?
- A - Fuels can present other hazards besides lead emissions. We will strive to make the best, informed decision that we can with regard to potential safety, environmental, and toxicology risk associated with the fuel. The details of the evaluation criteria for environmental impact are currently being developed. As background, in the 1990's MTBE was introduced into automotive fuels as an oxygenate. It was then found to contaminate ground water, and it was banned by many states. We don't want the piston engine aircraft industry to be challenged with changing future aircraft fuel formulations due to environmental or toxicology concerns, such as those posed by MTBE or the current addition of TEL.