To All Applicants:

The SETP Membership Committee in the past months has been observing an overall increase of applications with a general trend of poorly described testing activities.

The number of flights and the type of testing flown are the primary items that the Committee considers and evaluates in order to verify the minimum of 12 valid counters required for "Member" or 6 valid counters required for "Associate Member" status.

Specifically, in accordance with SETP Standard Operating Procedures (SOP) 4-4 (dated 2-16-72, revised on 1-24-08) and as included with the instructions on the Membership application form, for the initial application or for the upgrade to "Member" status, the applicant must show that he/she has served as a PILOT in the following categories:

1. PILOTS who are ACTIVELY ENGAGED and have been so engaged for NOT LESS THAN ONE YEAR in **EXPERIMENTAL or DEVELOPMENTAL** flight testing of aerospace vehicles, their engines, or associated components

2. PILOTS who, while engaged AS A CREW MEMBER in an **EXPERIMENTAL or DEVELOPMENTAL** manned space vehicle program, **HAVE RESPONSIBILITY FOR CONTROL** of the vehicle TRAJECTORY during a flight which achieves an altitude of at least 50 miles

The definition of Experimental and Developmental activity is once again emphasized and reported in the instructions provided with the application form. Specifically:

A. EXPERIMENTAL flight testing is defined as flight testing which investigates the characteristics of an aerospace vehicle or its components **under conditions not previously tested.** Examples include first flights, envelope expansion, and **initial** performance or flying qualities testing of **new** or **significantly modified** vehicles.

B. DEVELOPMENTAL flight testing is defined as flight testing which conducts the **initial** investigation of the effects of any **engineering** or **design change** to an aerospace vehicle or its components. Examples include structural changes, control law development, and certain systems tests. **For systems tests to qualify as developmental, the tests must be of systems under development that are used by the pilot to assist in the control of the vehicle.**

We have also had some confusion over the interpretation of ACTIVELY ENGAGED. If you check "no" in that block, and your application requires you to be actively engaged, the Membership Committee is predisposed to deny your application unless it's very clear from your description of your current duties that you did not really understand what constitutes being actively engaged. It's pretty clear that if you are regularly flying flight test flights or test support flights, you are actively engaged, even if there are months or years between projects. If you are in the flight test management chain involved in development or

design efforts, and you are on flight status and would occasionally participate as a flight test pilot, even if your primary duty is planning for flight testing but not flying, you are actively engaged. However, if you are not on flying status and are not expected to necessarily participate in flight testing, you cannot be considered actively engaged. If you are on the staff of a test pilot school, you are considered to be actively engaged.

Given that much of the on-going testing activity performed in several military test centers or civilian organizations is related to system testing, it has become a challenging task for the Membership Committee members to approve the reported activity when it is simply described as an upgrade to a new software for a specific weapon, flight control law or any aircraft system. For example, a pilot might describe that he/she took part in an OFP upgrade or Core System testing. This likely will not be accepted if it does not include some details of the system tested and the specific techniques used to evaluate the system. Bear in mind that to qualify as a test flight counting towards SETP membership, the system **must be used by the pilot to assist in the control of the vehicle**. For example, testing changes to a terrain following radar system to verify or develop actual terrain following flight counts. Flying patterns to evaluate radio reception capability of a new antenna does not count. However, if the new antenna has a significant effect on flying qualities, performance, or structural loads, and flight tests must apply flight test techniques to obtain and quantify the effect, it would count.

The Membership Committee frequently has little or no knowledge of your program, or of the system you tested, and a careful, plain language, unclassified description of the system is therefore necessary. The use of abbreviations and program names familiar only to you and your program must be avoided unless they are already explained elsewhere in the description of the activity.

Some bad and good examples are provided below for general Performance and Flying Qualities testing and for System/Weapons testing. These examples should provide the applicant with a clear distinction as to what the Membership Committee is expecting:

Bad Examples!

Month/Year	Number of Flights	Crew Position	Aircraft	Description of Testing
Jan 2013	4	Pilot	X-100	X-100: OFP C100C Build 2 SOF
Dec 2012	3	Pilot	X-101	X-101: GBU-49 drop at 15 dive
Nov 2012	2	Pilot	X-102	X-102: performance testing

Good Examples!

Month/Year	Number of Flights	Crew Position	Aircraft	Description of Testing
Jan 2013	4	Pilot	X-100	X-100: initial testing flights for a new Operational Flight Program (OFP) for the fly-by wire configuration of the C100C variable thrust control system. Envelope expansion included pitch spikes maneuvers at high angle of attack limits, with rudder frequency sweeps and doublets to verify Dutch Roll tendencies and spin susceptibility. Developmental flights #3 and #4 validated a further upgrade to the "Build 2 Software Operational Fixing – SOF" and during these flights the initial non-regression tests of the upgrade were completed at the newly expanded envelope at maximum angle of attack.
Dec 2012	3	Pilot	X-101	X-101: first single GBU-49 bomb release in a 15 deg. dive attack from the outer pylon of the aircraft in an unsymmetrical external load configuration; initial build-up approach included lateral directional Steady-Heading-Side-Slip points, to validate the lateral margin available before weapon separation at transonic speed. Flight #3 included developmental testing of the new Head Up Display (HUD) symbology for GBU-49 separation, with particular attention to HUD reactivity and intuitiveness on tracking Closed Loop Handling Qualities (CLHQ) tasks and pull-up guidance to the pilot. Unintentional maximum sideslip angle limit was exceeded on second flight at low transonic speed, bringing the flight to an early termination.
Nov 2012	2	Pilot	X-102	X-102: envelope expansion of climb performance in the extended range configuration of the X-102 tilt rotor aircraft with new conformal tanks; performance were determined with Sawtooth Climb Technique at low and medium altitude around the originally published Vy for the maximum take-off weight; testing showed an increase of 15% rate of climb above theoretical expectations and Computerized Fluid Dynamic (CFD) ground testing trials.

You are not constrained to only one line in the Description of Testing block! In the good examples above, a clear and concise description of the primary testing activities is shown. Where system testing is involved, as in the example of aircraft X-101 for the HUD, a detailed explanation of the maneuvers leading to the test of that specific item is also reported and it shows the importance of describing how a specific system is used to assist in the control of the aircraft. As another example of something that would

not be accepted, evaluating an upgrade to the HUD symbology that modifies the size of the numbers and/or symbols as a human factors enhancement would not be counted.

Such detailed explanations of the flight test activity will allow the Membership Committee to evaluate the real involvement of the applicant, and to properly acknowledge his/her technical experience and background as deserving of membership in SETP, especially for those applicants who are not graduates from a recognized Test Pilot School.

The Membership Committee would like to award membership on the basis of clear, unambiguous information from the applicant. Hopefully, the guidance provided here will help to avoid the need to return or even reject those which do not satisfy the requirements as per the SOP, or to minimize the risk of validating fewer qualifying leading to a denial of the application or awarding a lower grade of membership.

The Membership Committee