

**THE SOCIETY OF EXPERIMENTAL TEST PILOTS
STANDARD OPERATING PROCEDURES**

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SUBJECT: INSTRUCTIONS TO MEMBERSHIP APPLICANTS
AUTHORITY: BOARD OF DIRECTORS

I. GENERAL

Test pilots engaged in the practice of experimental or developmental flight testing, production flight testing, or in other flying which contributes to the advancement of flight testing techniques, aeronautical development and pilot safety shall be eligible for consideration for membership in The Society of Experimental Test Pilots.

Applicants must be actively engaged as test pilots at the time of initial application, but this requirement can be waived by the Board of Directors for cases of extenuating circumstances beyond the control of the applicant. Eligibility and grade of initial membership (ASSOCIATE or MEMBER) will be determined by the Membership Committee through review of the applicant's qualifying flight test experience as defined below. Consideration in grading is given to professional education and experience, publications, record of aeronautical achievements, and contributions to scientific knowledge. Eligible applicants are elected to membership by affirmative vote of the Membership Committee operating under approved rules and Standard Operating Procedures.

II. GRADES OF MEMBERSHIP

The full membership of the Society is divided into six grades, namely: (1) Honorary Fellow, (2) Fellow, (3) Associate Fellow, (4) Member, (5) Associate Member, and (6) Corporate Member. For initial acceptance into the Society (Member or Associate Member), requirements established by the Board of Directors in accordance with the Constitution, Article III are summarized in Table 1 below, and require that:

A. MEMBERS shall be PILOTS in one of 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.

B. ASSOCIATE MEMBERS shall be PILOTS in one of the following categories:

1. PILOTS or CO-PILOTS who are ACTIVELY ENGAGED in EXPERIMENTAL or DEVELOPMENTAL flight testing of aerospace vehicles, their engines, or associated components, with NOT LESS THAN 6 MONTHS experience or,
 2. PILOTS who are ACTIVELY ENGAGED in PRODUCTION flight testing with NOT LESS THAN 2 YEARS EXPERIENCE, or,
 3. PILOTS who are ACTIVELY ENGAGED in flying ENGINEERING EVALUATIONS and related tests with NOT LESS THAN 1 YEAR experience, or,
 4. PILOTS ACTIVELY ENGAGED in ASTRONAUT TRAINING for NOT LESS THAN 12 MONTHS in an EXPERIMENTAL or DEVELOPMENTAL space program AND HAVE COMPLETED AN SETP ACCREDITED COURSE OF TEST PILOT TRAINING.
- C. For ASSOCIATE MEMBER, qualifying experience shall be pro-rated for an applicant having a background in both categories two and three.
- D. SETP recognized schools: graduates of the Empire Test Pilot School, the U.S. Navy Test Pilot School, the U.S. Air Force Test Pilot School, the French Test Pilot School (EPNER), the National Test Pilot School (11 month course), the Indian Air Force Test Pilot School, or the Brazilian Test Pilot School, will be credited with up to six months experience toward the time requirements of categories two and three of ASSOCIATE MEMBER. Additionally, graduates of the above schools may be granted provisional ASSOCIATE MEMBERSHIP based solely on graduation for a period of up to three years, after which the applicant must document qualifying experience in accordance with paragraph II.A or B above to continue as a member of the Society.

Table 1; Minimum Membership Requirements Summary

Type of Experience	For MEMBER	For ASSOCIATE MEMBER
Experimental or Developmental Flight Test	12 Months and at least 12 qualifying flights	6 Months and at least 6 qualifying flights
Space Program	One flight as pilot in control at an altitude of at least 50 miles	12 months in astronaut training <u>and</u> a Test Pilot School graduate
Engineering Evaluation	Not applicable	12 months, with up to 6 months credit as a Test Pilot School graduate
Production Flight Test	Not applicable	24 months, with up to 6 months credit as a Test Pilot School graduate

NOTE: ATTENTION OF ALL APPLICANTS is invited to the fact that those who do not meet the requirements for the grade of MEMBER may be eligible for the grade of ASSOCIATE MEMBER as provided by the Constitution and By-Laws. An ASSOCIATE MEMBER is eligible for advancement to the grade of MEMBER upon subsequent presentation of evidence of the required qualifying experience; you need not be actively engaged at the time to subsequently upgrade.

III. DEFINITIONS OF QUALIFYING EXPERIENCE

The following definitions will be used to determine an applicant's eligibility for the grades of MEMBER or ASSOCIATE MEMBER. Flight test experience will be evaluated on a monthly basis to determine if the applicant has met the minimum time requirements. To determine flight test experience the pilot must be actively engaged in flight test activities which would include a minimum of 12 qualifying flights within the 12 required months for MEMBER, and at least 6 qualifying flights in the 6 months required for ASSOCIATE MEMBER. This does not imply a requirement for a qualifying flight in every month and the experience need not be consecutive. Actively engaged is further outlined below and in section II of SOP 4-2.

Applicants should describe their flight test experience as thoroughly as possible, listing actual dates on a monthly basis; in the appropriate section of the application (see the samples in Table 2 under item VI below for specific examples). The more information provided on test experience the better the ability of the membership committee to evaluate the application. Descriptions should support the Membership Committee Guidelines' basic competence criteria:

- A. Active engagement in flight test activities implies participation in one or more of the following: planning, preparation, execution and/or reporting of results, such as:
1. Test plan author, safety or technical review
 2. Simulation, test card design and review
 3. Flight and control room support
- B. Performance of duties as a test pilot occupying an air vehicle and in control of that vehicle (i.e. pilot flying ; pilot in control does not require pilot in command, rather pilot performing the flight test). Test pilot duties would routinely include one or more of the following:
1. The pilot employing specific flight test techniques,
 2. The data quality would depend on the pilot's proper execution of those flight test techniques,
 3. And the specific flight conditions would require tight (non-operational) tolerances.

Further definitions and guidance are:

- C. 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, where:
1. "Initial testing" means that the data to be gathered is previously unknown.
 2. "New vehicles" means a new type of aircraft.
 3. "Significant" modifications would be such of such magnitude that performance, flying qualities or operational capability would be expected to be affected.
- D. 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, where:
1. "Initial investigation" means that the data to be gathered is previously unknown.
 2. "Engineering changes" are those that do not alter vehicle basic structure or operating principles.
 3. "Design changes" are those that alter basic structure or operating principles of the vehicle.

Examples include structural changes, control law development, propulsion system changes, some weapons testing (such as new weapon or new release conditions or new weapon software that require new separation testing) 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, and is limited to initial development, which is defined as testing preceding fielding of the system.

- E. PRODUCTION flight testing is defined as performing the duty of pilot in command during the first flight following manufacture of an airplane to determine airworthiness. The definition specifically excludes pilots who fly only as co-

pilots or in any capacity subservient to pilot in command. This definition is also intended to specifically exclude pilots who only fly production aircraft after the first airworthiness flights have been accomplished (i.e. government plant representative pilots or customer representative pilots sent to accept aircraft for their employers).

- F. ENGINEERING EVALUATIONS are test flights which cannot be considered EXPERIMENTAL or DEVELOPMENTAL, but may gather previously unestablished data for purposes of validation or certification.
- G. Service testing and operational evaluation are not treated as EXPERIMENTAL, DEVELOPMENTAL or ENGINEERING flight testing.
- H. Flights conducted solely to provide environmental, conditions, i.e., as a test bed for the testing and/or development of systems, components, or other equipment which are unrelated to the test aerospace vehicle, shall not be considered as qualifying experience.
- I. Experience as a pilot of chase aircraft, missile control aircraft, or other test support aircraft shall not be considered as qualifying experience unless special factors justify designation of such chase, control, or support flights as EXPERIMENTAL or DEVELOPMENTAL in nature on their own merit.
- J. Endurance (reliability, durability) testing and purely maintenance testing (functional check flights) shall not be considered as qualifying experience.
- K. Job title or position held by the applicant or test program titles alone shall not be construed as satisfactory evidence of qualifying flight test experience. Actual description of flight test duties and accomplishments is required.

Flying performed on an irregular basis in a supervisory capacity for the purpose of program familiarization shall not be considered as qualifying participation.

L. IV. APPLICATION INSTRUCTIONS

A. GENERAL

Information on your application should be as complete as possible. Accurate and detailed records are essential to prompt processing of your application by the Membership Committee. Errors in grading are generally caused by vague or insufficient information. Incomplete applications or those containing only sketchy information may cause a delay in processing or result in the application being returned for further information. SETP has nine geographic Sections, seven in the US, one in Canada and one in Europe. Each of these Sections has at least one voting member of the Membership Committee who is designated to assist applicants in preparing and reviewing your application prior to submittal. Contact your Section Chairman or SETP headquarters for the name and contact information of this person to assist you. If you are not located in one of those nine geographic Sections, a member of the Committee will be assigned by HQ to assist and review your application prior to submittal if you desire.

B. PROFESSIONAL RECORD, Items 2 and 3

1. Descriptions should include reference to some or all of

- a. Active engagement with the various aspects of flight test from planning to preparation to execution to reporting of flight results

- 1) Test plan author, safety or technical review,
- 2) Simulation, test card design and review
- 3) Flight and control room support

b. Some examples

- 1) Data collection for a research program studying icing airflow patterns and wingtip flow separation to be extended to aircraft of similar class.

- 2) Detailed test plan was generated and data cards matrix were built for different CG and Weight conditions.
- 3) Test Hazard Analyses were conducted to minimize risks.
- 4) Participated in flying photo and safety chase.

C. FLIGHT TESTING RECORD, (Professional Record Item 6)

- 1 Dates Flown: List month and year tests were flown. Testing over several months must be separated and listed under each month flown (e.g. do not use: APR-JUN 75).
- 2 Number of Flights: List number of flights flown in that one month in support of the described test.
- 3 Crew Position: PILOT or CO-PILOT/ PILOT FLYING (PF), PILOT NOT FLYING (PNF). PILOT typically indicates the applicant was at the aircraft controls and flew the test points. CO-PILOT typically indicates applicant was at the aircraft controls, aided in the planning for each test point, but did not fly the actual test points. Where sortie role was CO-PILOT but test points were flown the applicant should indicate so by adding PF. Application for MEMBER must use Crew Position of PILOT or PF. Application for ASSOCIATE MEMBER may use PILOT or CO-PILOT (CO-PILOT for EXPERIMENTAL or DEVELOPMENTAL Test flights only).
- 4 Aircraft Flown and Description of Testing:
 - a. List project title. If project is classified, but a code name is not, the applicant should provide the project code name.
 - b. Describe test flown. For classified programs, give the name of an SETP MEMBER that can verify each flight and their validity towards SETP membership. **INSURE THAT ONLY UNCLASSIFIED MATERIAL IS INCLUDED IN THE APPLICATION.** Accurate and detailed information is essential for prompt processing of the application. Applicant must be specific in the description of each test flight.
 - 1) Application for MEMBER. Test flights must be EXPERIMENTAL or DEVELOPMENTAL (PILOT) with 12 qualifying months (one qualifying flight for SPACE PROGRAM applicants).
 - 2) Application for ASSOCIATE MEMBER. Test flights may be:
 - a) EXPERIMENTAL or DEVELOPMENTAL (PILOT or CO-PILOT) with 6 qualifying months.
 - b) PRODUCTION (PILOT) with 24 qualifying months (up to 6 months credit as a Test Pilot School graduate).
 - c) ENGINEERING EVALUATIONS (PILOT) with 12 qualifying months (up to 6 months credit for Test Pilot School graduate).
5. Descriptions should include reference to some or all of
 - a. Performance of duties as a test pilot occupying an air vehicle in control of that vehicle, in some or all of the following ways:
 - 1) Precise flight conditions and non-operationally tight tolerances
 - 2) Specific specialized test techniques
 - 3) Production of objective engineering data
 - 4) Data not known previous to the test
 - 5) Data quality dependent on the performance of pilot duties

D. A recent photo should be submitted with your application. A high quality digital photo is preferred.

V. ADDITIONAL INFORMATION

A. From the references listed by the applicant, or the membership in general, the Membership Committee may select at least three members with a minimum of four years in the Society, in the grade of MEMBER or higher, who may be

asked to state in writing to the Committee that the applicant does definitely meet the requirements of the Constitution, and that they (the references) are intimately familiar with the applicant's work.

- B. The applicant and references should be cautioned that all completed applications forms are handled by the Society as private information. Any member, however, is free to review his own application and personal file at any time.
- C. Applications will be placed in a HOLD status if additional information is required. If the additional information is not provided to the Membership Committee within a period of 60 days, the application will be placed in an invalidated file.
- D. Status of membership election will be communicated to the applicant after action by the Membership Committee.
- E. Applicants should carefully review the enclosed materials and application itself to familiarize themselves fully with the membership process, obligations, dues, and maintenance of membership status. You are encouraged to contact any available member or SETP Headquarters if you have any questions regarding completion of the membership application.
- F. An application sent by facsimile (FAX) is acceptable if followed up within 30 days by an original copy.
- G. It is recommended that all flight test experience be detailed on the FLIGHT TESTING RECORD whether it is considered by the applicant as qualifying or not. A complete record gives the Membership Committee a feeling for the applicant's background and some testing not considered qualifying by the applicant may be considered qualifying by the Membership Committee.

VI. EXAMPLES OF APPLICATION EXPERIENCE ENTRIES

Table 2; Application Experience Entry Examples

<u>Month/Year</u>	<u>Number of Flights</u>	<u>Crew Position</u>	<u>Pilot Flying/Not Flying</u>	<u>Aircraft</u>	<u>Description of Testing</u>	<u>Issue (not on application form)</u>
NA	NA	NA	NA	NA	<p><u>Do not categorize experience as experimental etc; the membership committee will adjudicate qualifying experience.</u></p> <p><u>Speak to some or all of the requirement for specific flight conditions, data tolerances, test techniques, relationship of data quality to flight test skill and unknown character of the data being sought</u></p> <p><u>Do not presume membership committee familiarity with the aircraft, weapons or systems being tested or the tests being performed</u></p>	GENERAL
<u>Mmm/yyyy</u>	<u>x</u>	<u>Pilot</u>	<u>PF</u>	<u>X-100</u>	<u>X-100: Classified testing; Messrs./Madams and SETP members John Doe and Mary Jones have direct experience and knowledge with regard to the testing performed</u>	<u>Classified test</u>

Table 2; Application Experience Entry Examples (cont'd)

<u>Month/ Year</u>	<u>Number of Flights</u>	<u>Crew Position</u>	<u>Pilot Flying/ Not Flying</u>	<u>Aircraft</u>	<u>Description of Testing</u>	<u>Issue</u>
<u>Mmm</u> <u>yyyy</u>	<u>x</u>	<u>Pilot</u>	<u>PF</u>	<u>X-102</u>	<u>Software Build 3 Tranche 2 of Core System: initial investigation of display upgrade. Specific evaluation was carried out of vertical situation displays on HUD and Multi Function Displays (MFDs) of attitude, flight path marker and flight director symbology using standard HQR flight test techniques during approach and landing at varying crosswind and offset conditions</u>	<u>System test</u>
<u>Mmm</u> <u>yyyy</u>	<u>x</u>	<u>Copilot</u>	<u>PF</u>	<u>T-101</u>	<u>Spin sorties to perform data collection for a research program on a production representative spin qualified T-101, to build a model of airflow patterns and wingtip flow separation to be extended to aircraft of similar class. Detailed test plan was generated and data cards matrix were built for different CG and Weight conditions. Test Hazard Analyses were conducted to minimize risks. Tests were performed under varying weight, CG and spin entry flight conditions and techniques, with standard flight condition and maneuver conduct tolerances</u>	<u>Engineering flight test</u>
<u>Mmm</u> <u>yyyy</u>	<u>x</u>	<u>Pilot</u>	<u>PF</u>		<u>Environmental test of a new GBUAXXX fuse/ controller/ fin/ arming wire configuration. Testing involved typical flight maneuver and landings at varying sink rate and crab angle</u>	<u>Weapons</u>
<u>Mmm</u> <u>yyyy</u>	<u>x</u>	<u>Copilot</u>	<u>PF</u>		<u>Software Build 3 Tranche 2 of Core System: initial investigation of display upgrade. Specific evaluation was carried out of vertical situation displays on HUD and Multi-Function Displays (MFDs) of attitude, flight path marker and flight director symbology using standard HQR flight test techniques during approach and landing at varying crosswind and offset conditions</u>	<u>Credit given for Copilot acting as Pilot Flying</u>
<u>Mmm</u> <u>yyyy</u>	<u>x</u>	<u>Pilot</u>	<u>PF</u>		<u>More TBA</u>	<u>Unique test</u>
<u>Mmm</u> <u>yyyy</u>					<u>More TBA</u>	<u>More TBA</u>
<u>Mmm</u> <u>yyyy</u>					<u>More TBA</u>	<u>More TBA</u>

