



VFS Technical Council Staff Operating Guidelines Technical Committee Charters Updated: September 2022

Contents

This document defines the purpose, scope of activity, and methods of operations for the Technical Staff of the *Vertical Flight Society (VFS)*.

- Section I relates to the duties of the Technical Director, Technical Council, Journal Editor, Forum Technical Chair and the Deputy Technical Directors.
- Section II relates to the Technical Committees, Committee Chairs, Session Chairs and the Deputy Technical Directors.
- Section III covers procedures, guidelines and checklists.

Philosophy of Guidelines

These procedures and approaches are guidelines only, and the widest latitude is left to the Technical Officers and Chairs in the conduct of his/her or the committee's business. However, to maintain consistent policies and approaches, a continuous effort should be made to comply with the stated approaches. It is recognized and provided that these guidelines should change as time goes on and there will be instances where deviations will be desirable and proper. For those cases, it is requested that deviations from the guidelines be cleared with the Deputy Technical Director responsible for the committees or the Technical Director prior to the action to assure that there is no violation of fundamental policy. All deviations will be recorded by the Technical Director and reported to the Technical Council at the subsequent Council meeting. These would be used in updating the guidelines.

In general, the purposes of the tenure and other "rules" are to:

- a) Provide consistency in policies affecting all committee members.
- b) Make sure that we have new people continuously moving into positions of leadership in VFS.
- c) Avoid retaining people who do not produce or are not active.

Revisions

It is the responsibility of the VFS Technical Programs Director and the Technical Council Technical Director to review the guidelines for revision and updating periodically.

- The Guidelines may be revised at any time at the discretion of the Technical Director.
- Technical Council responsibility and distribution are covered in Section I and Table 1.
- The Technical Director will normally assign specific portions of the revision to the most appropriate members of the Technical Council.
- Technical committee responsibility and distribution are covered in Section II.
- Committee Chairs may submit suggestions for revision to their charters, which will be reviewed and approved by the Technical Director and the appropriate Deputy Technical Director.
- The guidelines will be disseminated by VFS headquarters.

SECTION I – TECHNICAL COUNCIL STAFF & GUIDELINES

Technical Director

Appointment – Appointed by the Board from among candidates proposed by the Technical Council and VFS headquarters.

Position/Term – The position will rotate between Academia, Government and Industry and the Technical Director shall serve a two (2) year term.

Duties – The Technical Director shall oversee and supervise all technical activities of the Society including;

- a) Chair the Technical Council
- b) Appoint the Editor-in-Chief of *The Journal of the American Helicopter Society (JAHS)*
- c) Appoint the Technical Council's Deputy Technical Directors and the Forum Technical Chairs
- d) Maintain guidelines for the conduct of the technical activities of the Society, including
 - o Technical committee guidance, review/approval of charter updates, and formation of proposed new technical committees
 - o Lichten Award: forms review committee to review and rate final regional candidates based on the Lichten procedures. Reviews Lichten procedures and eligibility when deemed necessary.
- e) Perform such other duties as are necessary and proper to the conduct of the office, or which the Board may from time to time direct
- f) The Technical Director is also a member of the Board Executive Committee and Awards Committee.

Technical Council

Consists of the following positions as specified in the technical guidelines, reporting to the Technical Director:

- a) Deputy Technical Directors
- b) Journal Editor
- c) Forum Technical Chair, Forum Deputy Technical Chair
- d) Education Committee Chair
- e) Technical Directors Emeritus [Former Technical Directors]
- f) VFF Selection Committee Chair: most recent past Technical Director
- g) Appointed Members including:
 - a. History Committee Chair
 - b. Challenge Committee Chair
 - c. Student Design Competition Chair
 - d. Student Representative

Responsibilities and Duties – Duties of the Technical Council and standing technical committees shall be as set forth herein and as further amplified in guidelines to be maintained by each Council and committee member for the ongoing conduct for their respective responsibilities. These guidelines are to be updated periodically and filed with VFS headquarters.

The Technical Council and Committees shall;

- a) Maintain the standards of the Society's technical publications and meetings
- b) Organize such meetings, and furnish technical advice and guidance to the Board and other Committees
- c) Solicit material and assistance to this end as well as oversee the *JAHS* and other technical publications.
- d) Other objectives in keeping with Society technical objectives may be undertaken by direction of the Board of Directors or a committee established for this guidance.

Bi-Annual Meeting of Technical Council – The agenda for the bi-annual meeting of the Technical Council should include but not be limited to:

- a) Introduction of new officers and approval – Technical Director
- b) Report on activities of the Technical Council and the Board of Directors – Technical Director
- c) State of the Society – VFS Executive Director
- d) Highlights of Committee Operations; Forum Activities; Report on any Proposed Technical Meetings – Deputy Technical Directors
- e) Report of Forum Technical Chair
- f) Report of Journal Editor
- g) Report of Education Committee Chair
- h) Report of VFF Selection Committee Chair
- i) Report of Student Activities

- j) Revisions to Guidelines – Technical Director (Deputy Directors)
- k) New Business – Technical Director

Guideline Revision – Table III summarizes responsibility for Guideline Revision.

Technical Council Positions: Responsibilities, Tenure and Appointment

Technical Director – Beyond the responsibilities cited in the Bylaws, the duties of the Technical Director are summarized in the Annual Check List in Section III.

- a) He or she is a voting member of the Council and serves a 2-year term
- b) The position rotates representatives from industry, government and academia to ensure that all sectors of the industry are represented.
- c) Reports at the bi-annual meeting of the Technical Council on activities of the VFS Board and on recommendations for the technical conduct of the Society's business.
- d) It is recommended that the Technical Director have previous Technical Council service as Deputy Technical Director, Forum Chair, Technical Committee officer, etc.
- e) He or she also attends the bi-annual Board of Directors, where he or she is a voting member and reports on the Technical Council business.
- f) The Technical Director, along with VFS Technical Programs Director, is responsible for maintaining and updating Section I of these guidelines.

Technical Council – Members of the Technical Council are appointed by the Technical Director generally from among senior participants in VFS activities such as previous Technical Directors, Forum Technical Chairs, Journal Editors, Committee Chairs, and Regional Vice-Presidents.

It is desirable but not mandatory that the selected Council represent industry, government and academia active in rotorcraft research and development. All members of the Technical Council must be VFS members in good standing.

The Council is responsible for assisting and advising the Technical Director in the conduct of the technical functions of the Society. The Council also provides an independent auditing body for the monitoring of the technical state of the Society. For the conduct of this function, the senior retiring Technical Director serving his or her final term on the Council provides a critique on the technical state of the Society and other recommendations at the annual meeting of the Technical Council and Board of Directors.

The Technical Council will otherwise assist the Technical Director as may be appropriate, and in particular:

- a) Vote on Lichten Award recommendations and any updates/changes to award procedures.
- b) Technical meeting approval.
- c) Council or Committee guideline revisions.
- d) Any ad-hoc questions the Technical Director might suggest.

Journal of American Helicopter Society (JAHS) Editor – The Journal Editor is responsible for the technical quality of the JAHS and will approve and edit papers in accordance with the procedure established in Section III under *Journal Editorial Review Process*.

- a) He or she is appointed by the Technical Director, with recommendation from the sitting Journal Editor-in-Chief, with input from Associate Editors, Technical Council, VFS Executive Director and Technical Programs Director
- b) Is a voting member of the Council and serves a 3-year term.
- c) He or she will report at the bi-annual meeting of the Technical Council on any problems of the JAHS and recommendations for their solution.
- d) He or she is responsible for maintaining and updating the Journal Associate Editors and the Editorial Review Process.

Deputy Technical Directors – Deputy Technical Directors (DTD) are the Technical Council Liaison between the technical committees and the Council. DTD's are responsible for supervising and fostering activities and membership in the current standing committees and any committee sub-groups. There are six Deputy Technical Directors (DTDs) defined by the following disciplines:

- a) Aeromechanics: Acoustics, Aerodynamics, Dynamics and Handling Qualities committees
- b) Operations and Product Support: Operations, Product Support, Test & Evaluation committees
- c) Systems Engineering: Systems Engineering, HUMS, and Safety committees
- d) Systems Integration: Avionics & Systems, Crew Stations, Modeling & Simulation, Unmanned VTOL committees
- e) Vehicle Design: Aircraft Design, Advanced Vertical Flight, Propulsion committees
- f) Vehicle Integrity: Crash Safety, Manufacturing Technology, Structures & Materials committees

In addition, DTD's are:

- a) Appointed by the Technical Director
- b) Voting members of the Council and serves a minimum of 2 years
- c) A DTD should have previously served as member of a Technical Committee and preferably as a Chair or Session Chair.
- d) An outgoing DTD is encouraged to provide recommendations for a replacement and should notify the Technical Director of intentions plan to step down prior to the annual Forum meeting and provide recommendations
- e) The Technical Director will request input from the Council for potential and qualified DTD candidates and will make a DTD appointment after considering all candidates.

Other general guidelines include:

- a) Initiate and guide the yearly change over to the new committees such as:
 - i. Committee officer appointments and rosters (committee terms run July 1 to June 30)
 - ii. Committee membership
 - iii. Forum Call for Papers
 - iv. Committee updates to *Vertilfite* magazine
 - v. Committee charters
 - vi. Any other committee issues or concerns
- b) Collect and prepare status reports concerning the committees for the Technical Director and report at the bi-annual Technical Council meeting.
- c) Attend committee's best paper presentations at the annual Forum.
- d) Review final Form best papers from each committee and nominate best paper within your discipline, which will be reviewed and evaluated for overall Alfred Gessow best paper by the Technical Director and his/her appointed review committee.

Technical Directors Emeritus – The Technical Directors Emeriti are voting members of the Council and are former Technical Directors who serve as advisors to the Technical Council. The last six (6) Technical Directors will automatically serve on the Council as Technical Directors Emeritus.

Forum Technical Chair – The Forum Technical Chair is a non-voting member of the Council and is responsible for the technical content and administrative management of the Forum technical sessions, working in partnership with VFS Technical Programs Director. Guidelines and checklists for these tasks are contained in Section III.

- a) He or she is appointed by the Technical Director, with concurrence from VFS headquarters and serves a 1-year term, reporting directly to the Technical Council and VFS Technical Programs Director.
- b) The position rotates between industry, government and academia representatives.
- c) He or she will report to the Technical Council on Forum technical session challenges, solutions, accomplishments or change at both bi-annual meetings of the Council (October meeting prior to the Forum and at the Forum meeting).
- d) The Chair is also invited to brief the VFS Board of Directors at their Forum meeting reporting on the overall Forum technical program.

Forum Deputy Technical Chair – The Forum Deputy Chair is a non-voting member of the Council and assists the Forum Technical Chair in carrying out the administration of the annual Forum technical sessions.

- a) He or she serves a 1-year term and takes over as Forum Technical Chair.
- b) He or she is appointed by the Technical Director with concurrence from VFS headquarters.

Appointed Members – These members are invited by the Technical Director based on their expertise and background in the vertical flight and are voting members of the Council. They can be used to address underrepresentation of any constituencies on the Technical Council.

VFF Selection Committee Chair – The VFF Selection Committee Chair is the most recent former Technical Director and is a non-voting member of the Council and serves a 2-year term.

- a) He or she is responsible for overseeing the review and rating of the VFF yearly scholarship applications and forming a review committee with a minimum of four participants from industry and government to assist in the review and rating.
- b) The VFF Chair works with the VFS Executive Director on establishing the number and amounts of scholarships based on the top-level funding allocated
- c) Reports the scholarship results to the Technical Council.
- d) He or she will also form ad-hoc review group to review and recommend updates to the VFF scholarship application and process when required.

Education Committee Chair – The Education Committee Chair oversees the Educational Committee, which recommends policy, plans, promotes and coordinates educational activities and serve as a focal point for educational matters of interest to the Society including secondary, higher and continuing education.

Student Representative – The Student Representative is appointed by the Technical Director and is non-voting member of the Council.

- a) The student representative should be a full-time student enrolled at an accredited university and studying a technical discipline relevant to vertical flight.
- b) Their role on the Council is to represent student interests, ideas or concerns about the industry and how the Society can best represent students.

Student Design Competition Chair – The Student Design Competition (SDC) Chair is a non-voting member of the Council and is point of contact for the competition;

- a) He or she is responsible for assisting the sponsor and VFS headquarters with the drafting and technical review of the RFP and coordinating the judging entries and scores each year.
- b) The objective of the SDC is to promote student interest in a career in the vertical flight industry, and to provide an opportunity for interested students and industry professionals to meet and interact.
- c) The SDC Steering Committee operates under the authority of the Technical Director and VFS headquarters.

Challenge Committee Chair – The Hover Challenge Committee Chair is a non-voting member and is appointed by sponsors of the Challenge (currently Sikorsky Aircraft for the Igor I. Sikorsky 24 Hour Hover Challenge). This person is responsible for the administration and technical data review for the competition. This challenge replaces the previous Igor I. Sikorsky Human Powered Helicopter, and the challenge criteria is for hover a heavier-than-air flying machine for 24 hours, while still demonstrating other typical helicopter attributes.

History Committee Chair – The History Committee Chair is a non-voting member and his or her purpose is to facilitate the preservation and understanding of vertical flight history.

VFS Participation in Industry/Government/Academia

Scope – It is appropriate for the Society to participate in meetings and conferences related to the formulation of standards, criteria, research objectives and requirements for facilities, sponsor forums, support and assist the Vertical Flight Foundation, and encourage and assist related academic endeavors. Such activities may result in the establishment of, or recommendation for, airworthiness, design, test, operating or other standards, or in recommendations concerning research and facility acquisition priorities. The above list is neither all-inclusive nor mandatory.

The procedure for governing such participation is to be guided by the following:

Approval – All such participation will be recommended by the Technical Director and approved by the Board of Directors President.

Participation and Reporting – With the approval of the Board President, the Technical Director may request or recommend to the agency, or organization sponsoring the meeting, specific members of the VFS as participants in the conferences, meetings, etc. The recommendation will be based upon the proved competence of the individuals. The appointees will represent the Society, and the affiliation should be acknowledged whenever they make comments during the meeting. During such representation, freedom of expression is granted by the Society. However, at all times, where comments are made, it is to be stated that views are those of the individual, and that they do not represent the views of the Society.

No re-numeration for such participation will be given by the Society without prior approval of the VFS Board.

A participant, representing the Society, must submit a report to the Technical Director, defining pertinent actions and comments and recommending further action to be taken by the Society. The Technical Director will summarize this report for the Board.

Findings – Study recommendations or specific standards may be formulated by the Technical Committees, appointed committees, or ad hoc groups of members.

The standards will be reviewed and/or approved by:

- a) Appropriate committee, or a special panel appointed by the President
- b) Technical Director

- c) Board President
- d) Board of Directors

After Board approval, the standard or study conclusion will be tentatively adopted by the VFS and transmitted to the requesting organization for consideration and promulgation

In the case of standards, six months after transmittal, the standards and the action taken by the standardizing organization will be reviewed. Without specific action to nullify it, the standard will become an official standard of the VFS and means to encourage its acceptance will be considered by the Board or a special group appointed by the Board.

Other Actions – Participation and activities not covered herein may be handled by the Board President at his discretion. New policy so adopted will be defined and submitted to the Board for approval. The Executive Director will maintain these policy documents.

SECTION II – TECHNICAL COMMITTEE GUIDELINES

Purposes of Technical Committees

Provide the VFS membership with timely, high-quality technical information. The dissemination of this information is accomplished through VFS sponsored technical meetings including the Annual Forum and regional technical meetings.

The technical committees will:

- a) Solicit, evaluate, and select relevant high quality papers, and assess the technical quality of their presentation at the Annual Forum.
- b) Support the Journal Editor in the selection process for publication of papers.
- c) Offer a center for communication among the various industry and government agencies interested in vertical flight aircraft.
- d) Encourage the use of the VFS as a medium by which the members can and should publish their findings.
- e) Promote technical meetings in their respective areas of interest. Coordinate with and serve as a link between the VFS and other professional societies as requested.
- f) Establish the VFS as an organization to which the government, industry, academia and the general public can look for assistance, direction, and leadership with respect to vertical flight aircraft.
- g) Additionally, the committees should maintain a strong technical organization, providing a training ground for new Society leaders in their respective fields, and maintain adequate historical records.

Technical Committees – The Technical Committees and their areas of primary responsibility are given in the charters attached herein.

Committee Structure

- a) The optimal number of regular committee members, including the Chair(s) and Session Chair(s), is between ten (10 and twenty (20). But should be no less than seven (7) and generally a maximum number of twenty-five (25) members.
- b) The number of regular committee members, including the Chair(s) and Session Chair(s), should be no less than seven, and generally no more than fifteen.
- c) Committee members must be active, respected practitioners in the field of the Committee. Membership should represent industry, government agencies, academia, and should preferably include at least one non-US member. Membership should be sought primarily to represent all facets of the field, and also to achieve a balanced representation of major organizations.
- d) A person should serve on only one VFS technical committee at a time. Commitment must be obtained from the member and their supporting organization that he or she will be able to attend one committee meeting per year.
- e) All committee members must be members of VFS. A non-member may be proposed for committee appointment, but it must be understood that he or she will join the Society upon accepting appointment.
- f) A member appointment is for two-years. Reappointment subsequent to two-year tenure will be on a yearly basis. The appointment will be made by Committee Chair with the prior concurrence of the Deputy Technical Director.
- g) It is intended that makeup of the committee will include about 60% “old” members (those with greater than one year of service) and 40% “new.”
- h) In addition to the regular members, a maximum of three honorary technical committee members for each committee may be appointed for a period of six years by the Chair. Prior approval of the Technical Director is required. No more than one appointment per Technical Director is required. No more than one appointment per year may be made for each committee. Honorary committee members have full membership privileges and responsibilities on the committee but may not serve as a Chair.
- i) Retiring Chairs are encouraged to remain on the committee in an ex-officio capacity. To provide historical continuity, a committee Chair may elect to request one or two past Chairs to serve in an ex-officio capacity.
- j) The Chair should provide for a logical successor, preferably experienced committee members, by making sure that at least two qualified members with different affiliations are available.
- k) The Chair appoints his successor with the approval of the Deputy Technical Director. To avoid concentration of committee Chair within one company or areas, at least two people should be recommended for the Chair. Individuals recommended for the Chair should have demonstrated their ability and willingness to work for the Society, and that their organization will support it. The tenure of Committee Chairs should be overlapped so that half are “old” and half are “new.”
- l) A Chair is appointed for a one-year period. Customarily a second term has been automatic.
- m) The committee Chair appoints a Session Chair and Session Deputy Chair. The Session Chair serves a one to two-year term and the Deputy Session Chair takes over as Session Chair. A Committee Chair can serve as a Session Chair.
- n) The Chair will appoint a Deputy Chair to assist with the committee business and to take over in the case of an emergency. This appointment is for a one-year period with reconfirmation by the Committee Chair at the end of the

first year. Customarily a second term is automatic. A Deputy Chair may not succeed himself. Except in special cases, the Deputy Chair should not be from the same company or organization as the Chair. A Deputy Chair can serve as a Session Chair.

- o) The Deputy Technical Directors are appointed by the Technical Director and serve as a supervisor and Technical Council liaison and assist with fostering activities and membership for each committee.

Subcommittees

- a) With the concurrence of the Deputy Technical Directors, permanent or ad hoc subcommittees may be formed, on request or as directed.
- b) The subcommittee Chair is appointed by the committee Chair with the prior approval of the Deputy Technical Director. The subcommittee Chair reports to the committee Chair. Matters of policy will be cleared with the Deputy Technical Director and the Technical Director prior to action.
- c) A Chair of a committee may not be a member of the subcommittee.
- d) A subcommittee Chair must be a member of the committee.
- e) Other subcommittee members are not required to be members of the committee but should be encouraged to be VFS members.

Special Projects – Technical committees may sponsor special projects upon request of the Technical Director, or the Deputy Technical Director, or on their own initiative. All policy items or projects affecting more than the specific committee (e.g., interrelation to committees, publications, etc.) must be cleared with the Technical Director prior to initiation. Section I provides guidance on participation on ad hoc studies including standards requiring dissemination of a VFS publication.

Principal Tasks & Tenure – The following guidelines should not be seen as the only tasks. New initiatives are encouraged.

Committee Chairs [1 to 2-years Tenure]

- a) Select each year, new committee members, according to the committee's guidelines and notify VFS HQ and Technical Council Liaison.
- b) Appoint a Forum Session Chair and Deputy Chair each year with the responsibility for organizing the committee's technical papers and session(s) at the yearly VFS Annual Forum, in coordination with the Forum Technical Chair.
- c) Appoint a subcommittee of committee members, with responsibility of:
 - i. Review and assessment of submitted Forum abstracts for acceptance or non-acceptance
 - ii. Review and assessment of final written Forum papers to choose the top paper(s) prior to the Annual Forum – a maximum of three (3) papers can be chosen. Guidelines for this evaluation are provided by the Forum Technical Chair and VFS HQ. Informs committee Deputy Technical Director (Technical Council Liaison) so he/she can attend Forum presentations.
 - iii. Recommends the committee's overall best paper/presentation(s) post Forum to the Deputy Technical Director (Technical Council Liaison) and VFS Programs Director, who will initiate notifications to author(s) and send best session paper certificates.
 - iv. Each committee best paper will be assessed by the Technical Council Liaison who will recommend top overall committee paper within their discipline to the Technical Director.
 - v. The top six (6) best papers within each technical discipline will be assessed by the Technical Director and his/her review team for the Alfred A. Gessow best paper award.
 - vi. It is recommended that the committee's give all authors/presenters feedback on the assessment of their papers.
- d) Evaluate, with the help of his or her committee, the papers presented at technical meetings which may be appropriate for publication in the VFS technical *Journal*.
- e) Ensure that the interests of the committee are represented when related Regional Technical meetings are being planned. A committee member should be assigned to work actively with the organizing committee of the Technical meeting.
- f) Maintain contact with appropriate Associate Editors of the *Journal* to ensure that committee members are involved. Supporting the process of manuscript review should be evenly distributed within the committee.
- g) At the end of the committee Chair's term, propose to the Deputy Technical Director at least two (2) candidate successors to the Committee Chair's position and Forum Session Chair and Deputy Chair.
- h) Inform Deputy Technical Director and VFS HQ of committee officer and roster changes. Committee terms runs July 1 to June 30.

Committee Deputy Chair [1 to 2-years Tenure]

- a) Assist the Chair and assume his or her tasks if they are temporarily unavailable.
- b) Assist Chair in any other tasks or duties as requested by the Chair.
- c) Assume responsibility of a Forum Session Chair, if necessary, at the request of the Chair.

Committee Forum Session Chair [1 to 2-years Tenure]

- a) Works with the Committee Chair on the review/assessment of Forum abstracts and final papers.
- b) Responsible for organizing the committee's technical papers and session(s) at the yearly Forum.
- c) Works with the Forum Technical Chair and VFS Technical Programs Chair on all deadlines and tasks related to the Committee's Forum technical papers and sessions.
- d) Runs the Committee's technical sessions during the annual Forum.

Committee Forum Session Deputy Chair [1 to 2-years Tenure]

- a) Assist the Forum Session Chair and assume his or her tasks if they are temporarily unavailable.
- b) Works with the Forum Session Chair organizing the committee's technical papers and session(s) at the yearly Forum.
- c) Assumes responsibility as Forum Session Chair at end of tenure.

Committee Members [2 to 3-years Tenure]

- a) Find new papers
- b) Evaluate the technical papers under the direction of the Chair to determine whether they might be appropriate for publication in the *Journal*.
- c) Review manuscripts for the *Journal* as requested by Associate Editors of the *Journal*.
- d) Assume tasks to assist the Chairs in their work, including the organization of a Forum session.

SECTION III: TECHNICAL COUNCIL AND COMMITTEE OVERVIEW & ANNUAL CHECKLISTS

Technical Director

- June/July:** Forms Alfred Gessow Best Paper review committee to rate/review the top Forum paper from the six (6) top Forum papers under each DTD discipline.
Following Forum Technical Council meeting, minutes should be distributed and a tickler established on follow-up actions
Remind Deputy Technical Directors, Regional VP's and Committee Chairs of procedures for submitting Technical Meeting proposals
- September:** Check on items that need to be brought before the Board for fall meeting
Send Invitation to Technical Council for Fall Board Meeting
Forward input on the above to VFS for inclusion in Board Report
Remind Regional Vice Presidents of Lichten Award Procedures
Review Nikolsky Nominations as member of the Awards Committee
- October:** Conduct Fall Technical Council Meeting
Attend Fall Board Meeting and Report on Technical Council
- December:** Review open items for Executive Committee Meeting (EXCOM) in January
Reminder to Technical Council to consider their nomination for VFS Annual Awards
- January:** Attend EXCOM
Reminder to Regional Vice-Presidents of Lichten Deadlines
Initiate Recommendation for new Technical Director
- February:** Review nominations for VFS awards as member of the Awards Committee
- March:** Lichten Award Nominations due to VFS HQ and Technical Director by March 1
Select Lichten Award Review Committee
Notify VFS HQ of Lichten Winner(s) by mid-March
Issue Technical Council Meeting Notice to be held during the Forum
Appoint any incoming Council positions such as Journal Editor, Forum Chair or any other outgoing Council positions
- April:** Deadline for following year's Technical Meeting proposals
Consult with incoming Technical Director
Prepare Technical Director Report for Forum Board meeting
- May:** Attend and Administrate the Technical Council Meeting at Forum
Attend Board Meeting at Forum
Attend Chair/Session Chair Meeting at Forum
Attend Technical Committee Best Paper Presentations at Forum if schedule allows

Incoming Technical Director

- March:** Incoming Technical Director should be selected and advised.
- May:** Attend the Forum Technical Council Meeting – he or she takes over at the conclusion of this meeting
Attend the Forum Board of Directors meeting – as incoming Technical Director he or she is a non-voting attendee
He or she also should also attend Committee Chair meetings at the Forum

Deputy Technical Directors (DTD)

- May:** Attend Technical Council Meeting at Forum
Attend Technical Committee and Chair/Session Chair Meetings at Forum
Attend Technical Committee Best Paper Presentations at Forum
- May/June:** Inform VFS HQ of Overall Forum Best Paper Selection for DTD Technical Area

Remind Technical Committees to update Committee Officers/Rosters and Report to VFS HQ
Thank retiring Committee Chairs/Members
Welcome new Committee Chairs/Members
Recommend DTD Replacement to Technical Director

September: Remind Technical Committees of Approaching Forum Abstract Deadlines
Provide DTD Report to Technical Director for Fall Technical Council Meeting

October: Attend Fall Technical Council Meeting

Feb/March: Remind Technical Committee Session Chairs of Forum Final Paper Deadlines
Remind Technical Committee Chairs to Schedule Forum Committee Meetings

April: Provide DTD Report to Technical Director for Forum Technical Council Meeting
Remind Committees to Select Forum Best Papers and inform DTD and VFS HQ

As Required: Provide guidelines to Committee Chairs.

Forum Technical Chair

June/July: Works with VFS Technical Programs Director in formulating and finalizing the Forum *Call for Papers* document.

September: Status check of Forum abstract submissions

October: Attends Fall Technical Council meeting and reports on ongoing Forum activities

November: Monitors committee abstract reviews
Troubleshoots abstract questions and/or issue committees as required, including advice on transfer of abstracts from one committee to another
Works with committees to ensure Forum abstracts are reviewed and accepted by deadline date

Dec/Jan: Works with VFS Technical Programs Director to formulate and finalize *Preliminary Technical Session-at-a-Glance* which becomes the publicized Forum Technical Session Schedule

April: Reminds committee session chairs of getting authors to submit final papers
Extends final paper deadline if required, with advice and concurrence from VFS Technical Director and Technical Programs Director
Troubleshoots final paper questions/issues from committees as required.

May: Oversees the Forum technical program and attends sessions as schedule allows
Attends the following Forum meetings and reports on the technical program

- Technical Council Meeting
- Chair/Session Chair Meetings
- Board Meeting

Late June: Serves on the Technical Director's Alfred Gessow Best Paper review
Post Forum committee to choose the top Forum paper out the top six (6) papers

Committee Chairs

June: *Committee Chair* provides updates to committee roster for the new term (term runs July 1 to June 30) to VFS Technical Programs Director and Technical Council Liaison
Committee Chair provides updates to the Forum *Call for Papers* to VFS Technical Programs Director

July: VFS HQ releases Forum *Call for Papers* in mid to late July

July to October: *Session Chair* maintains status of Forum abstract submissions via Mira, including reminding authors and potential authors of abstract deadline dates etc.

Late Sept/Early Oct: *Committee Chair* provides committee status report to their Technical Council Liaison for presentation at the

fall Technical Council meeting (request and date to submit will come directly from the Liaison)

Late Oct/Early Nov: *Session and Committee Chairs* review Forum abstracts and accept abstracts via Mira by abstract review deadline date
Session Chair provides committee's proposed session paper schedule line-up to VFS Technical Programs Director – spreadsheet will be sent by the VFS Technical Programs Director

Early to Mid-December: VFS HQ notifies authors of abstract acceptance/non-acceptance, Session Chairs are copied on correspondence

January: VFS HQ will communicate the *Forum Technical Session-at-a-Glance* to committees – *Session Chairs* should share information with Forum authors

December to April: *Session Chairs* keep in regular contact/communications with Forum authors reminding them of final paper deadlines and other pertinent information as required

April: *Session Chairs* work with authors to get final papers submitted via Mira by the deadline date to ensure inclusion in the Forum Proceedings
Committees start best paper reviews, which can be initiated as soon as final papers are fully submitted to Mira
Committee Chair provides committee status report to their Technical Council Liaison for presentation at the Forum Technical Council meeting – request and date to submit will come directly from the Liaison

May: *Committee Chair* communicates best paper recommendations (limit of 3) to the Technical Council Liaison along with day/time of presentation during the Forum so he or she can attend the Forum presentation(s)
Committee Chair conducts committee meeting during the Forum week: Chairs will be sent VFS HQ communication (around March) giving instruction on how to schedule their committee meeting and a conference room will be made available for date/time chosen
Committee and Session Chairs attend Forum Chair meetings hosted by Forum Technical Chair and Technical Programs Director
Committee Chair communicates Forum final paper selection to Technical Council Liaison and VFS Technical Programs Director within 2-weeks of the conclusion of the Forum

Journal Editor Review Process

All submitted manuscripts to the *Journal of the American Helicopter Society* (JAHS) are subject to a preliminary review by the Editor-in-Chief. Manuscripts that do not meet the criteria of the JAHS or conform to the basic technical standards for publication will be declined.

Manuscripts that pass EIC preliminary review are forwarded onto Associate Editor (AE) in one or more areas of specialty for initial technical review. If the manuscript meets AE technical screening, it is then sent to a team of technical experts for a full peer review. The identities of these reviewers are kept confidential. The author(s) will be provided with technical comments on their paper and will be required to edit their paper in accordance with the review comments to the satisfaction of the Associate Editor. Editorial corrections must also be undertaken at this stage. The AE makes the initial decision to accept or decline the final paper for publication and the EIC makes the final decision on publication.

General information from submitted manuscripts may be collected and analyzed but only to improve the quality of the editorial or peer review process. The full review process takes a minimum of three months but every effort is made to keep the review process to less than six months.

The editor welcomes manuscripts and papers presented at the VFS Annual Forum, Technical Meetings, the European Rotorcraft Forum, and other technical conferences. Papers should report significant information and be written in a style appropriate for an archive publication. Acceptance will be judged on technical quality, relevance and importance of material, interest to reader, and timeliness. Authors may be requested to make revisions in accordance with the reviewers' comments.

Short manuscripts describing important new results of limited scope may be submitted for informal review by the EIC for publication as technical notes. Comments on previous Journal articles as well as opinions on VFS technical or editorial policy are welcome and will be considered.

Table I

Position	Tenure	Appointed	Reference
Technical Director	2-years	Appointed by Board. Candidates proposed by Technical Council with concurrence by VFS Executive Director and Technical Programs Director.	Bylaws: Article V (2) (d) Guidelines: Section I, Technical Staff
Deputy Technical Director	2-3 years	Appointed by Technical Director. Recommendations of outgoing DTD and Technical Council.	Guidelines: Section I, Technical Staff
Forum Technical Chairs	1-2 years	Appointed by Technical Director from candidates proposed by the Technical Council and Committees.	Guideline: Section I, Technical Staff
Journal Editor	3-years	Appointed by Technical Director. Recommendation of sitting EIC with concurrence by VFS Executive Director and Technical Programs Director.	Guidelines: Section I, Technical Staff
Committee Chairs	1-2 years	Appointed by Deputy Technical Director. Recommendations by outgoing Committee Chair and Committee	Guidelines: Section II, Technical Committees
Committee Session Chairs	1-2 years	Appointed by Committee Chair from candidates proposed by the Committee	Guideline: Section II, Technical Committees
Committee Members	2-3 years	Appointed by Committee Chair with concurrence from the Committee.	Guidelines: Section II, Technical Committees
Subcommittees	1-year	Proposed by anyone. Approved by Technical Director and ratified by the Board.	Guidelines: Section II, Technical Committees
Subcommittee Chair	1-year	Appointed by Committee Chair.	Guidelines: Section II, Technical Committees
Subcommittee Members	1-year	Appointed by Committee or subcommittee Chair.	None

Table II

PORTION	MAINTAINED & REVISED BY	DISTRIBUTED TO
Guidelines: Sections I and II	Technical Director Technical Prog. Dir.	Technical Council Committee Chairs Committee Session Chairs
Guidelines: Section III <i>Technical Director Annual Checklist</i> <i>Incoming Tech. Dir. Annual Checklist</i> <i>Forum Tech. Chair Annual Checklist</i> <i>Deputy Tech. Directors Annual Checklist</i>	Technical Director Technical Prog. Dir.	Technical Council

TECHNICAL COMMITTEE CHARTERS

The Technical Committees and their areas of primary responsibility are given below in the charters attached herein.

Acoustics Technical Committee Charter [Updated 9/2022]

1. General Information

1.1 Conventions: Name of the Committee and Definitions.

- The name of the committee is the Vertical Flight Society Acoustics Technical Committee.
- The Vertical Flight Society shall be referred to herein as the VFS.
- The Vertical Flight Society Acoustics Technical Committee (TC) shall be referred to herein as the Acoustics TC or TC

1.2 Mission/Charter: The Acoustics TC has the following purpose and objectives:

- Organize and conduct the Acoustics Sessions at the VFS Forum.
- Promote and conduct technical specialists' meetings and workshops in acoustics.
- Provide support to the Journal of the American Helicopter Society in acoustics.
- Encourage research efforts that study vertical flight vehicle acoustics.
- Promote communications between vertical flight vehicle acoustic research activities in Government, Industry, and academia.
- Conduct evaluations and develop recommendations to assist national and international leaders in the development and implementation of policies that concern vertical flight vehicle acoustics.
- Promote VFS membership affiliation and encourage interactions with other professional societies.
- Provide acoustics expertise to the vertical flight vehicle community.

2. Membership

2.1 Members of the Committee: The Acoustics Technical Committee representation shall include up to thirty voting members from the following categories. Membership across categories shall be split such that US institutions (Industry, Government, and Academia) comprise at least 25% of the TC.

- Voting Members:
 - Category A: Vertical Flight Industry: Up to fifteen members from major vertical flight vehicle manufacturers, scientific consultants in vertical flight vehicle technologies, operators, designers, etc. Membership limited to one representative from each company, inclusive of all subsidiaries.
 - Category B: Government: Up to ten members from national agencies around the world are welcome in this category. No more than five members from an individual nation may be represented in this category, and no more than one member from the same agency at the same location is allowed.
 - Category C: Academia: Up to ten active faculty members from universities are permitted. Membership limited to two representatives from each institution.
- Non-Voting Members:
 - Category D: Student: Up to ten members are permitted. Each student member shall be actively enrolled in a college or university seeking a degree directly related to the vertical flight industry. Membership limited to one representative from each academic advisor and no more than two from each institution.
 - Category E: Honorary Members: Up to five honorary members are permitted. Honorary members should be identified by their career long, and significant contributions to the TC and relevant vertical lift acoustics community.

2.2 Election of New Members

- Any voting member who is present, or represented by proxy, at a meeting can nominate a new member, subject to the restrictions in Section 2.1.
- The Chairperson shall prescribe election procedures that allow the new member positions to be filled.
- All election decisions by the Acoustics TC require the approval by vote per Section 3.3.
- Elections of new members shall normally take place once per year at the Acoustics TC meeting held during the Annual Forum of the VFS.
- Elections of new members may also take place at other times as designated by the Chairperson.

- Typically, an outgoing member nominates a successor from their organization, who is then approved by members of the TC. However, no permanent status is given to Industry, Government, or Academia. Nominations are equally open to all VFS members in accordance with the category and overarching rules.

2.3 Terms of Membership

- The term for new members, except honorary members, shall begin after the VFS Forum (on a date specified by VFS) in which they were nominated and continue for three years, including attendance at three TC meetings during VFS Annual Forums.
- Terms for the Chairperson and the Deputy Chairperson are two years each. These terms supersede, and thus may add to, whatever term existed prior to selection to office. The Chairperson and Deputy Chairperson shall attend three meetings, the first as incoming and third as outgoing. Nominations for deputy Chairperson may be made by the membership. It is suggested that the nominations alternate between the three Categories A, B, and C. The committee then votes per Section 3.3 to approve or to disapprove the nomination. The Deputy Chairperson automatically becomes Chairperson after their term is fulfilled.
- An honorary membership has no term limit. However, an honorary member may be removed from the Acoustics TC at any time by a vote per Section 3.3.
- A TC Member may terminate their membership by submitting a resignation letter to the Chairperson. Vacant membership positions shall be filled in accordance with Section 2.2.
- A TC Member whose employment (including college enrollment) changes during their tenure, such that they no longer qualify for the Category they were elected to, will have their position automatically terminated at the next Annual Forum or meeting of the TC, whichever comes first.
- The TC Chairperson or Deputy Chairperson can recommend to the TC that a member be removed from the TC before that Member's term is complete, but only for the reason of non-participation in Committee for two consecutive years. This recommendation requires a vote per Section 3.3.

3. Membership Voting

3.1 Member Voting Rights: Each Member shall be entitled to one vote at a meeting of the Acoustics TC. Student and honorary members are not eligible to vote on Acoustics TC issues.

3.2 Proxies: Any Member entitled to vote may do so either in person or by transferring their vote to another Member of the Acoustics TC, authorized by a written proxy signed by the Member, and filed with the TC Chairperson.

3.3 Quorum for Voting: If a quorum of voting members is present at a TC meeting (including proxies per Section 3.2), then a majority vote (including proxies per Section 3.2) on an issue shall be considered the act of the whole TC.

4. Membership Meetings

4.1 Time and Place of Meeting: An annual meeting of the Members shall take place during the VFS Annual Forum. The Chairman must notify each TC Member of the time and place for this meeting at least two weeks prior to the event. Other meetings of the TC may be called throughout the year by the Chairman. However, the Chairman must notify the TC Members of the time and place at least thirty days prior to the date of such a meeting.

4.2 Quorum Requirements: At least fifty percent of the voting members, represented in person or by proxy, shall constitute a quorum for the transaction of business at the meeting of the Members. If the number determined by fifty percent of the voting members, represented in person or by proxy, is not a whole number, then the next highest whole number determines a quorum.

5. Officers of the Acoustics TC

5.1 Officers of the TC: The TC shall have a Chairperson, a Deputy Chairperson, a VFS Forum Session Chairperson, and a VFS Forum Deputy Session Chairperson as officers.

5.2 Election of Officers:

- Any voting TC member can nominate any other TC Member for the positions of Deputy Chairperson or Session Chairperson. Election of officers takes place at the TC meeting during the Annual VFS Forum.
- The Chairperson is not elected by the TC, rather the Deputy Chairperson automatically becomes the Chairperson after their term as Deputy Chairperson is complete.
- The Session Chairperson is not elected by the TC, rather the Deputy Session Chairperson automatically becomes the Session Chairperson after their term as Deputy Session Chairperson is complete.

6. Duties for TC Members and Officers

6.1 Duties for Membership

- Nominate and elect the Forum Acoustics Session Chairperson.
- Using the guidelines specified in Section 6.4, assist with evaluation of the following:
 - Forum abstracts
 - Forum technical papers
 - Forum presentations for the Best Paper candidates
- Exception: Authors are not permitted to provide evaluations for their own abstracts, technical papers or presentations.
- Assist the editors of the Journal of the American Helicopter Society in reviewing and coordinating papers submitted for publication.
- Actively participate in TC activities.
- Accept and carry out action items assigned, as appropriate, during TC meetings.
- Participate in the nomination and selection of new members of the TC.

6.2 Duties for Chairperson

- Prepare for and conduct TC meetings.
- Release meeting minutes.
- Prepare agendas for TC meetings.
- Communicate with TC Members as needed.
- Maintain current list of TC Members and appropriate contact information.
- Maintain the TC bylaws and membership records.
- Ensure that TC inputs for the VFS Annual Forum Best Paper Award are communicated to the VFS Technical Council.
- Maintain contact with the Technical Director of the VFS and members of the Technical Council.
- Represent the TC committee in VFS planning processes, as required.

6.3 Duties for Deputy Chairperson

- Committee minutes shall be maintained by the Deputy Chairperson or by another TC Member designated by the Chairperson.
- Assist in the execution of Chairperson duties as required by, or in the absence of, the Chairperson.

6.4 Duties for Session Chairperson

- Gather Forum abstracts and technical papers and distribute them to the TC for evaluation.
- Review abstract and technical paper evaluations by TC Members and define Acoustic session(s) for the VFS Forum. Abstracts and technical papers will be evaluated by at least three voting members, excluding paper authors, according to the official Alfred Gessow Best Paper Award Guidelines, provided for reference in Appendix A.
- Administer Best Paper Award:
 - The three technical papers with the highest mean score will be candidates for Best Paper. For these three candidate technical papers ("Final Papers"), the following will be evaluated to determine the Best Paper:
 - The Final Paper and Presentation for each candidate for Best Paper will be evaluated by at least three voting members, excluding paper authors. The Final Paper will be evaluated according to the official Alfred Gessow Best Paper Award Guidelines, provided for reference in Appendix A. The Presentation will be evaluated based on the scoring provided in Appendix B. The mean score for the Final Paper and Presentation will each contribute to the Best Paper Award based on a weighted scale, where:
 - Final paper evaluation is worth 80%
 - Presentation evaluation is worth 20%
- Monitor authors' progress in the preparation of their VFS Forum papers.
- Coordinate with VFS Headquarters for Forum Acoustics Session(s) agenda.
- Chair VFS Acoustics Sessions as needed.

6.5 Duties for Deputy Session Chairperson

- Assist the Session Chairperson when requested by the Session Chairperson.
- Chair VFS Acoustics Sessions as needed.

7. Changes to the Bylaws: Any changes to the bylaws of the Acoustics TC require a vote per Section 3.3.

Appendix A: Gessow Best Paper Award Scoring System

(NOTE: This Appendix is provided for informational and reference purposes only.

It is not part of the VFS Acoustics TC Bylaws. It should be updated when Gessow Best Paper Award Scoring System is updated without need to amend TC bylaws.)

At each evaluation level, the scoring system outlined below should be used for ranking the candidate papers.

Element	Rating	Weighting Factor	Max
1. Originality/creativity	0 to 5	6	30
2. Technical Content	0 to 5	6	30
3. Relevance of Contribution	0 to 5	4	20
4. Organization and Clarity	0 to 5	4	20
			Total: 100

Each Rating should be an integer. Reviewers should use the following table to assist them in assigning numerical ratings. Note that the scale is only intended to be linear between 1 and 5, not between 0 and 1. Any Element that could not be graded higher than a “C” should be rated a zero.

For scoring within a Technical Committee, any paper that has an Element rated as “zero” should be disqualified. (However, if the abstract was good enough to be selected, the changes of an Element being rated zero should be quite small.)

Score	Adjectives and Guidance Corresponding to Numerical Ratings
5	Excellent, Outstanding, Nearly Perfect, World Class, Breakthrough (an “A+”)
4	Superior, Very Impressive, not a “5”, but certainly better than a “3” (an “A”)
3	Very Good, Particularly Noteworthy, Very Promising (a “B+”)
2	Good; not a “3” but better than a “1” (a “B”)
1	Adequate, Potentially Promising (a “C+”)
0	Marginal, Poor, None, Non-existent, Not qualified (“C” or less)

Appendix B: Best Paper Presentation Award Scoring System

(NOTE: This Appendix is part of the VFS Acoustics TC Bylaws. Changes to this system require a vote according to Section 3.3)

At each evaluation level, the scoring system outlined below should be used for ranking the candidate presentation.

Element	Rating	Weighting Factor	Max
1. Organization of Content	0 to 10	3	30
2. Technical Level of Content	0 to 10	2	20
3. Legibility and Clarity of Content	0 to 10	2	20
4. Volume and Clarity of Speech	0 to 10	2	20
5. Question and Answer Engagement	0 to 10	1	10
Total:			100

Each Rating should be an integer. Reviewers should use the following table to assist them in assigning numerical ratings. Note that the scale is only intended to be linear between 1 and 10, not between 0 and 1. Any Element that could not be graded higher than a “C” should be rated a zero.

Any presentation that has an Element rated as “zero” should be disqualified from Best Paper Award contention.

Score	Adjectives and Guidance Corresponding to Numerical Ratings
10	Excellent, Outstanding, Nearly Perfect, World Class, Breakthrough (an “A+”)
8	Superior, Very Impressive, not a “10”, but certainly better than a “6” (an “A”)
6	Very Good, Particularly Noteworthy, Very Promising (a “B+”)
4	Good; not a “6” but better than a “2” (a “B”)
2	Adequate, Potentially Promising (a “C+”)
0	Marginal, Poor, None, Non-existent, Not qualified (“C” or less)

Advanced Vertical Flight Technical Committee [Drafted 5/2006]

Mission/Charter: to broaden the vertical flight technology base with emphasis on VSTOL concepts beyond the conventional rotorcraft area, to include:

- a) Rotorcraft concepts such as the tilt wing.
- b) Stopped rotor and canard rotor wing systems.
- c) Non-rotorcraft concepts such as fan-in-wing, lift engines, thrust augmentation devices, lift fans, lift or lift/cruise vectoring nozzles, and attitude (reaction) control systems.

The committee will concentrate on requirements related to:

- a) emerging and enabling technologies
- b) design
- c) systems integration
- d) testing
- e) operation and maintenance of such aircraft

The committee will:

- a) Support and organize technical sessions at the Annual Forum and technical meetings.
- b) Promote educational awareness of VSTOL flight.
- c) Encourage nominations for the Paul E. Haueter Award.

Aerodynamics Technical Committee Charter [Drafted 3/1999]

Mission/Charter: the Aerodynamics Technical Committee is committed to promoting the broadest dissemination of technical studies that expand the understanding of rotary wing and Vertical/Short Take Off and landing aircraft aerodynamics.

The Committee will accomplish this mission through:

- a) Conducting high quality technical sessions at the Annual Forum.
- b) Candid dialogue among Committee members at the annual meeting.
- c) Support of technical specialists' meetings held by regional chapters.
- d) Contributions to *Vertiflite* articles.
- e) Editing and review assistance for Society's technical *Journal* articles.
- f) Active participation on Integrated Technology Teams.

The Committee shall also:

- a) Maintain a strong technical organization with a membership representative of the Society.
- b) Provide a forum for discussion of issues affecting the Society and keep adequate historical records.
- c) Work effectively with the Society's leadership and other technical committees to foster a strong technical society.
- d) Interact with other professional societies as appropriate to advocate the advancement of aerodynamics.

Aircraft Design Technical Committee Charter

Mission/Charter: the Aircraft Design Technical Committee's areas of primary responsibility are to coordinate VFS activities on

- a) Overall vertical lift aircraft, subsystem, and component designs.
- b) Design technology, design criteria and design synthesis.
- c) Interdisciplinary design considerations including performance, reliability, maintainability, weights and economics.
- d) Vulnerability and crash safety considerations.
- e) Oversees the activities of the Icing Integrated Technology Team.

Additionally, the committees should:

- a) Maintain a strong technical organization, providing a training ground for new Society leaders in their respective fields, Maintain adequate historical records.
- b) Provide the Society's membership with timely, high-quality, Vertical Lift Aircraft Design technical information (herein called "Design"). The dissemination of this information is accomplished through the VFS sponsored technical meetings including the Annual Forum and the regional technical meetings.

The committee will:

- a) Solicit, evaluate, and select relevant and high quality papers
- b) Assess the technical quality of "Design" presentations at the Annual Forum, and nominate an author(s) for "Best of Design" presentation
- c) Support the *Journal* Editor in the selection process for publication of "Design" papers.
- d) Offer a center for communication among the various industry, academia, and government agencies interested in the various aspects of "Design" technical information.
- e) Encourage the use of the VFS as a medium by which the members can and should publish their "Design" findings.
- f) Establish the VFS as an organization to which the government, industry, and the general public can look for assistance, direction, and leadership with respect to vertical flight aircraft design.

Aircraft Design Committee Structure: the committee (and the Society as a whole) operates through the dedication of a few volunteers, who see the educational and societal value of contributing to our technical society. An annual committee meeting is generally held in conjunction with the society's annual Forum, and included membership activities as such:

- a) Welcoming of any new, interested members (typically invited by an outgoing member).
- b) Solicitations for officer volunteers, and voting for confirmation

The number of regular committee members, including the Chair, should be no less than seven, and generally no more than fifteen.

- a) Committee members must be active, respected practitioners in the field of the Committee. Membership should be sought primarily to represent all facets of the field, and also to achieve a balanced representation of major organizations.
- b) A person should serve on only one VFS technical committee at a time. Commitment must be obtained from the member and their supporting organization that he or she will be able to attend one committee meeting per year.
- c) All committee members must be members of the Society. A non-member may be proposed for the committee appointment, but it must be understood that he or she will join the Society upon accepting the appointment.
- d) Membership is for two years minimum, with continuance based on interest level, contribution to the committee, and consistent effort to attend annual meetings.
- e) It is intended that make-up of the committee will include 60% "old" members (those with greater than two years of service) and 40% "new."
- f) In addition to the regular members, a maximum of three honorary technical members for each committee may be appointed for a period of six years by the Chair. Prior approval of the Technical Director is required. No more than one appointment per Technical Director is required. No more than one appointment per year may be made for each committee. Honorary members have full membership privileges and responsibilities on the committee but may not serve as Chair.
- g) Retiring Chairs should not serve on the same committee immediately after their term of office except in an ex-officio capacity. After two years absence from the committee, they may again serve on the committee. To provide historical continuity, a committee Chair may elect to request one or two past Chairs to serve in ex-officio capacity.
- h) The Chair should provide for a logical successor, preferably an experienced committee member, by making sure that at least one qualified member is available and willing to serve.
- i) The committee elects the officers, with the Chair being approved by the Technical Director or the Deputy Director. To avoid concentration of committee Chairs within one company or area, successive chairs should not be from the same organization.
- j) The committee Chair is elected for a one-year period with the reconfirmation by the committee and the Deputy Director at the end of the first year. Customarily a second term has been automatic.

Committee Officers:

- a) Committee Chair
 - i. The Committee Chair organizes and leads the annual meeting. That responsibility includes requesting the meeting time (via coordination with VFS headquarters) and inviting members.
 - ii. Responsible for coordination of assessing the technical quality of the paper presentation at the Annual Forum. Guidelines for this evaluation are provided by the Forum Technical Chair. The Committee Chair is to appoint at least 5 committee members to review the forum papers and provide an evaluation and ranking. The recommendations will allow recognition to be given to the leading presenters, including nomination(s) as "Best Design", and letter of Thanks. All presenters will receive feedback on the assessment of their papers.
 - iii. Ensure that the interests of the committee are represented when a Design-related regional Specialists' meetings is being planned. If requested, a committee member should be solicited and assigned to work

- actively with the organizing committee of the Specialists' meeting.
- iv. At the end of the Committee Chair's term, propose to the Deputy Director a candidate successor to the Committee Chair's position.
- b) Deputy Chair
 - i. Responsible for taking over the Committee Chair's role and coordination of the VFS Journal "Design" publications.
 - ii. Evaluate, with the help of the committee, the papers presented at the technical meetings which may be appropriate for publication in the VFS Journal.
 - iii. Maintain contact with the appropriate Associate Editor of the Journal to ensure that the committee members are involved and supporting the process of manuscript review for the Journal. The workload associated with the manuscript review should be distributed within the committee.
- c) Secretary
 - i. Publish minutes from Committee meetings.
 - ii. Maintain and publish committee officers and members address list.
- d) Forum Session Chair
 - i. Prime committee contact for Forum Aircraft Design Session(s). Roles include modify Call for Papers, if a theme is desired; solicit papers, manage review of abstracts with their Committee members, contact authors, organize presentation session(s), and conduct session(s).
 - ii. Responsible for organizing the design session(s) at the yearly Annual Forum, in coordination with the Forum Technical Chair. A Deputy Session Chair is normally elected/appointed, to assist the Session Chair when there are two Design Technical Sessions planned for the upcoming VFS Forum.
- e) Highlights Editor
 - i. Solicit "Design" highlights from members' organizations for yearly *Vertiflite* Highlights publication. Coordinate with VFS headquarters, and organize/edit information into desired publishing form, as requested.
- f) European Coordinator
 - i. Encourage participation of European rotorcraft organizations in the VFS, particularly on Vertical Lift Aircraft Design areas. Personally solicit papers for the VFS Forum Aircraft Design Session from Design Managers of the major European manufacturers (Westland, Eurocopter, Augusta, etc.) as well as key personnel at R&D labs such as ONERA, DLR, and DERA.
- g) Student Design Competition Coordinator (new)
 - i. The position should rotate with sponsoring company. (The historic order of sponsoring companies has been The Boeing Co, Bell Helicopter Textron, Sikorsky Aircraft Corp., Eurocopter, and AgustaWestland)
 - ii. Solicit participation in the competition from ALL universities having faculty and students involved in helicopters. (List includes: Georgia Tech., Penn State, Naval Postgrad., RPI, MIT, University of Maryland, Purdue, Arizona State, UCLA, Technion (Israel). Many of these schools have historically strong programs in helicopters but have never participated in the competition. Efforts should be made to draw them in).
 - iii. Coordinate with the VFS Education Committee, the Student Design Competition RFP and judging of proposals. Effort should be made to work with the Education Committee to include suggestions to modify the competition in order to enhance the educational value.
 - iv. Coordinate with the sponsoring company to provide prize awards/money.

Avionics and Systems Technical Committee Charter [Updated 9/2022]

Background: Avionics and systems enable aircrews to fly helicopters and VTOL aircraft and perform mission functions effectively. These roles are becoming more complex as military missions are increasingly requiring these aircraft to be interconnected within the digital battle space. This interconnectivity is increasing by orders of magnitude, amounts of information and data to be processed and absorbed by the crews. Fortunately, avionics and systems capabilities are also increasing at a phenomenal rate to allow aircrews to cope with increasing workload and mission demands. The primary challenge is to provide increasing capabilities at affordable cost and to reduce operating and support cost of fielded systems.

Mission: This committee studies avionics, flight control, and mission systems for manned, unmanned, or optionally manned vertical flight aircraft. This encompasses related aspects of hardware, firmware, and software design, development, implementation, verification and fielding. Additional areas of interest include cyber security, airworthiness/certification, innovative use of COTS technologies, and open systems architectures.

Charter: this technical committee shall strive to further the state-of-the art in avionics and systems by keeping pace with the needs of helicopters and VTOL aircraft aircrews. Areas addressed will include:

- a) Activities associated with the design, development, test, and use of avionics and systems to support basic flight

- management and the various missions of our unique vertical flight aircraft.
- b) Cost reduction.
- c) Use of commercial off the shelf solutions, and specific mission system solutions for both commercial and military use.
- d) Operational needs and experience.
- e) Night and adverse weather requirements, and advanced systems.

These activities shall be accomplished through:

- a) High quality technical sessions held at the Society's Annual forum, technical specialists' meeting arranged with regional chapters.
- b) Soliciting technical papers and activity summaries for publication in the technical *Journal* and *Vertiflite* publications.

The Avionics and Systems technical committee shall:

- a) Maintain a strong technical organization of avionics specialists from equipment suppliers, system integrators, aircraft prime contractors, and both domestic and foreign commercial military users.
- b) Provide training for new society leaders and maintain historical records.
- c) Interact effectively with other technical committees within the Society.
- d) Coordinate and serve as a link between the Society and other professional societies as needed.

Crew Stations and Human Factors Charter

Mission: This committee studies operational environments and mission requirements for identification of the aircrew and maintainer vehicle interface issues that impact workload and mission success. This includes the study of integrated crew station design, control concepts, information transfer, display methodology, symbology and formats, automation and artificial intelligence concepts, prototyping of crew systems, and the interdisciplinary interface of crew systems with other vehicle systems. The Technical Committee will serve as the focal point for Crew Stations and Human Factors related to technical activity within the American Helicopter Society.

Charter: the Committee will provide a channel for the collection and distribution of technical information, and it will help to focus industry and Government interests in crew station and human factors technical areas. The Committee will:

- a) produce a technical session at the annual Forum
- b) promote Technical Meetings
- c) encourage the use of the Society's publishing media, and establish the Society as a provider of technical expertise and leadership to the rotorcraft community and related technical organizations
- d) serve as a source of technical information for existing rotorcraft operational environments, human interface technologies and issues that impact human performance and mission success, and associated design analysis tools and methods

Dynamics Technical Committee Charter [Updated 9/2022]

Mission: foster, promote, and enhance technical excellence in the rotorcraft dynamics community by dissemination of information in:

- a) advancement in rotorcraft dynamics research and development that lead to advanced analytical modeling, design, structural control, and experimental methodologies
- b) improvements in rotorcraft dynamics attributes, longer life, and/or lower weight and cost rotorcraft
- c) increased rotorcraft capabilities and commercial operator and passenger acceptance
- d) Expanded rotorcraft applications and markets.

Charter: the Dynamics committee will focus on the following technical areas, rotorcraft attributes, capabilities, and competencies such as:

- a) Structural dynamics, rotor dynamics, and aeroelasticity
- b) Aeromechanical stability and vibration
- c) Physical, computational, and empirical modeling and analysis Experimental data acquisition, signal processing, system ID and validation Structural transfer path analysis
- d) Structural and aeroelastic design optimization
- e) Active/passive structural isolation and vibration suppression
- f) Active structural and rotor control solutions

The committee will further:

- a) Sustain a diverse T/C membership, including representatives of industry, government and academia
- b) Establish and maintain an international presence on the Committee

- c) Organize high quality Dynamics Sessions at the annual Forum
- d) Provide feedback to presenters at the annual Forum
- e) Support the VFS Journal review process to ensure technical excellence
- f) Organize, promote and conduct relevant and timely technical specialists' meeting
 - i. Aeromechanics every 4 years
 - ii. Dynamics every 4 years
- g) Promote and conduct collaborative research programs and multi-year workshops e.g., Rotor Vibratory Loads Prediction
- h) Establish and maintain public domain databases, including a Dynamics Committee web page
- i) Communicate international activities in industry, government, and academia
- j) Promote multi-disciplinary and systems perspectives
- k) Establish and substance communications and coordinated activities with other Technical Committees and professional societies as appropriate
- l) Promote multi-disciplinary and systems level perspectives
- m) Promote membership affiliation and communication with other professional societies
- n) Conduct evaluations and develop recommendations on contemporary special topics in dynamic and aeroelasticity by the committee or by subcommittees, as appropriate

Dynamics Technical Committee By-Laws

Dynamics Committee Membership and Term Durations

- a) The balance of the committee should include representation from the rotorcraft, eVTOL, and support industry, with similar representation from government and academia, to include representation from international organizations. Total membership, including Chair and Deputy Chair, but excluding Honorary members, should not exceed 22, including 6 to 9 from industry, 6 to 8 from government labs, 3 to 6 from academia, 2 to 5 from international organizations, and 1 to 2 Honorary members. Membership balance regarding region, expertise, and member organizations should be considered.
- b) Terms for Chairperson and Deputy Chairperson are two years each. These terms supersede and, thus, may add to whatever term existed or was remaining prior to selection to office.
- c) The leadership posts are traditionally held alternately by representatives from helicopter industry and government on an alternating basis with consideration given to regional balance.
- d) The existing Chair and Deputy Chair nominate the new Deputy Chair, which is accepted by vote of the full Committee.
- e) Normal progression is to step from Deputy Chair to Chair post (note implied four year commitment by individual and organization).
- f) Terms for members are three years. Membership starts a year before the first meeting attended and ends after the third meeting attended. Other duties may require extension of terms, but should not exceed four years, unless duties as Chairperson and/or Deputy Chairperson are assumed. Periodic turnover is seen as healthy for the committee because it
- g) Brings new ideas and energy into the Committee and encourages participation in VFS activities by a larger segment of the dynamics community.
- h) For the helicopter industry and government members, the outgoing members nominate a successor from its organization. Nominations are accepted without vote.
- i) For academia and non-helicopter companies, no permanent status is given to a university or company. Nominations are to be equally open to all members. Traditionally, NRTC Rotorcraft centers of Excellence have had representation. New members are nominated by individual Committee members and accepted by vote of full Committee.
- j) Terms for Session Chairperson and Co-Chairpersons are one year.
- k) Session Chairpersons volunteer and/or nominated by Committee Chairperson and accepted by vote of full Committee. Desirable for Session Co-Chairperson to become Session Chairperson in following year.

Dynamics Committee Membership Roles and Responsibilities

Chairperson:

- a) Maintain Committee mission statement, charter, bylaws, membership records, and calendar Maintain current list of Committee members and addresses.
- b) Maintain database of Committee member's self-described background and expertise for reference by VFS Journal Dynamics Associate Editors in selecting paper coordinators and reviewers.
- c) Communicate with Committee members as needed.
- d) Nominate Deputy Chairperson.
- e) Solicit volunteers and/or nominate Session Chairperson(s).

- f) Solicit nominations for academia and non-helicopter organizations.
- g) Prepare for and conduct Committee meetings.
- h) Send out Committee meeting announcements.
- i) Prepare Committee meeting agenda(s) Release Committee meeting minutes.
- j) Participate on Sub-committee for Best Paper Review.
- k) Communicate Best Paper and presentation results to VFS Technical Council and Committee members and arrange for plaque(s) to be presented for Best Paper and presentation at Annual Forum.
- l) Communicate results of Journal Quality recommendations to VFS Journal Dynamics Associate Editors.
- m) Provide results of presentation Quality review to Presenters at VFS Forum and Committee members
- n) Write yearly *Vertiflite* Highlights article on the basis of Committee input.
- o) Maintain contact with the Technical Director of VFS and members of the Technical Council Prepare semi-annual Committee reports and communicate to Technical Council.
- p) Represent the Committee in VFS planning processes as required. Coordinate with other Technical Committees as required.
- q) All other responsibilities of regular members.

Deputy Chairperson:

- a) Take and document Committee meeting minutes.
- b) Assist Chairperson as needed with *Vertiflite* Highlights article.
- c) Assist Chairperson in representing the Committee in VFS planning processes as required.
- d) Assist Chairperson in nominating new Deputy Chairperson.
- e) Participate on Sub-Committee for Best Paper Review.
- f) All other responsibilities of regular members

Session Chairperson:

- a) Revise Call for Papers for Annual Forum.
- b) Gather Forum paper abstracts, coordinate with other Technical Committee Session Chairpersons to categorize papers and distribute abstracts to the Committee for evaluation.
- c) Select papers based on Committee abstract review and inform authors of selection Organize Dynamics session(s) with Co-Chairpersons.
- d) Monitor progress in paper presentation.
- e) Coordinate with VFS HQ for correct Forum agenda.
- f) Forward written copies of Forum papers to Sub-committee for Best Paper review.
- g) Lead Best Paper review sub-committee and communicate results to Committee Chairperson.
- h) Chair one session at the VFS Forum
- i) All other responsibilities of regular members

Session Co-Chairperson(s):

- a) Assist, as needed, Session Chairperson with Call for Papers, assessment of abstracts, organization of Dynamics Sessions, and monitoring of papers.
- b) Participate on Best Paper review Sub-committee Chair session at the VFS Forum.
- c) All other responsibilities of regular members.

Members:

- a) Participate in at least one Committee meeting at Annual Forum (a representative should be sent when direct participation is not possible; non-participating members can have their membership revoked by a review of a subcommittee formed by the Chairperson).
- b) Assist with the evaluation of Forum abstracts.
- c) Assist with the evaluation of presentation quality of presenters in Dynamics Session at VFS Forum.
- d) Assist with the evaluation of VFS Forum dynamic papers for recommendation for publication in the VFS Journal Assist with the evaluation of the technical papers for the Best Paper recommendation (one or volunteers are desired for participation on review sub-committee).
- e) Assist the Associate Dynamics Editors of the VFS Journal as requested in reviewing and coordinating papers submitted for the publication.
- f) Submit to the Chairperson yearly inputs for the *Vertiflite* Highlight article Participate in Committee Specialists' meetings, workshops, and other activities.
- g) Accept and carry out action items assigned, as appropriate, during Committee meetings Participate in the nomination and selection of new members of the Committee.

Electric-VTOL (eVTOL) Committee Charter [Drafted 10/2021]

Mission: to foster and steer the growth of sciences and technologies related exclusively to electric power of VTOL aircraft and the infrastructure needed to operate such aircraft. Electric-VTOL aircraft, in short eVTOL, is an emerging and evolving type of aircraft that are propelled by electric power and of a scale typical of manned aircraft.

“Propelled by electric power” defines the role of electric power. “More-electric” or “fly-by-wire” technologies that deal with electrified sub-systems are not under the purview of this committee. Electric power must be the principal means of propulsion. All sources of electric power such batteries, hydrogen fuel cells, solar, thermal, hybrid, or even nuclear, are within the purview of this committee as long as the drive is electric. Combustion engines and mechanical drives are not under the purview of this committee.

“Scale typical of manned aircraft” defines the intent of the aircraft. Small UAS or drones are not under the purview of this committee, unless used for demonstration of proof of concept. The payload and level of safety must be commensurate with manned aviation. However, unmanned aircraft can be used as test beds for research, technology development, and flight tests.

In summary, the mission of this committee is to devote attention exclusively to the special and unique problems that arise from the use of electric power as means of propulsion.

Technical Focus, Capabilities, and Competencies of the eVTOL Committee

The technical focus will cover broadly the unique challenges of electric power, infrastructure, economics, safety, the aircraft, and its flying qualities.

Electric power: is the principal barrier of eVTOL and the committee will deal with the following:

- a) Advanced batteries
- b) Hydrogen fuel cell systems
- c) Advanced electric motors and drives including innovative control and cooling
- d) Hybrid-electric power generation, transmission, and distribution
- e) Power architecture including fault-mitigation, reliability, vulnerability and survivability
- f) Problems associated with high-voltage
- g) Thermal problems and cooling system

Infrastructure: the committee will deal with problems of infrastructure unique to eVTOL, from electric-specific needs of the vertiport, to workforce, to regulatory and certification needs such as:

- a) Special re-fueling, such as fast charging and power grid
- b) Special re-fueling, such as hydrogen fueling and supply
- c) Impact on power-grid
- d) Impact on environment
- e) Special problems of airspace insertion and air traffic management
- f) Special challenges of pilot training
- g) Special challenges of education and workforce development
- h) Standards, special regulatory needs and certification

Economics: the committee will deal with economics exclusive to eVTOL such as

- a) Life cycle costs of electric aircraft
- b) Market research and analysis
- c) Economics of operation such demand modeling and pricing of missions
- d) High-volume manufacturing and economies of scale
- e) Challenges of global supply chain\.

Safety: the committee will deal with safety issues exclusive to eVTOL:

- a) Crash absorption and egress with on-board high voltage
- b) Fire protection and safety from explosions with batteries and hydrogen storage
- c) Reliability and air-worthiness of electric components
- d) Vulnerability in physical space such as ballistic damage from live fire
- e) Vulnerability from potential cyberattacks, and trusted autonomous systems

Aircraft: the committee will deal with unique aeromechanics if it is exclusive to electric power:

- a) *Flight, wind-tunnel and model-testing of electric sub-systems and components

- b) Problems related to transient high-bandwidth asynchronous rotor speed variation;
- c) Unconventional controls and handling qualities;
- d) Challenges of power-propulsion interference and integration;
- e) Interferences between multiple electric rotor/s and airframe;
- f) Structural loads, and vibration caused by electric power; and
- g) Unique problems of noise, such as electric motor noise

* e.g., if a new rotor is designed for eVTOL, description of the rotor goes to AVF, its impact on the aircraft goes to AD, its impact on the power and electric drive goes to eVTOL.

Flight operations: the air mobility use case envisioned for eVTOL require them to be easy to fly. The committee will deal with flying qualities unique to eVTOL such as:

- a) Aircraft response to localized- or micro- weather phenomena
- b) Impact of high urban winds and gusts
- c) Autonomy, collision and obstacle avoidance, safe landing
- d) Operation in temporarily GPS-denied environment
- e) Advanced cockpit design for real-time Human Computer Interface
- f) Applications of AI to make flying easier
- g) Special provisions of pilot training such as SFARs

Charter

The committee will:

- a) Maintain a diverse and balanced membership from academia, government, and industry.
- b) Maintain international participation.
- c) Archive new research and development on electric power and infrastructure at the VFS Forum.
- d) Attract and retain non-traditional constituents related to electric power to grow VFS.
- e) Steer and review high-quality manuscripts for publication in the *Journal of the AHS*.
- f) Promote, conduct and support specialist's meetings, workshops, and councils.
- g) Support international activities in industry, government, and academia.
- h) Maintain the VFS professional short course as the premier course on eVTOL.
- i) Promote liaisons and joint activities with sister TCs and professional societies.
- j) Nurture a diverse body of next-generation society leaders.

eVTOL Committee By-Laws

Membership and Term Durations:

- a) The balance of the committee should include representation from VTOL/eVTOL companies, representation from energy and electric-power companies, governments, and a limited representation of operators, pilots, specialized support and consulting industry, and regulators.
- b) Total membership, including Chairperson and Honorary members should be no less than 7, generally no more than 15, but not exceed 20.
- c) A nominal makeup may consist of 5-8 from industry, 2-4 from governments or national/international laboratories, 2-4 from academia, and 2-4 from other categories (pilots, operators, regulators).
- d) Membership balance with regard to international and U.S. regional participation, type of expertise, diversity of background, and variety of organization should be considered.
- e) Only one member can be admitted from one organization.
- f) Terms for members are two years.
- g) Membership starts a year before the first meeting attended and ends after the third meeting attended. Other duties may require extension of terms, including duties as Chairperson and/or Deputy Chairperson are assumed.
- h) Reappointed to a two-year tenure will be made on a yearly basis by the committee Chair. Periodic turnover will bring fresh energy and greater participation from a wider spectrum of the eVTOL/UAM community. At the same time, it is intended that the makeup of the committee include about 60% "old" members (greater than one year of service) and 40% "new". Reappointments could be utilized to produce this diversity through a combination of two- and four-year tenure.
- i) Terms for Chairperson and Deputy Chairperson are two years each. These terms supersede and, thus, may add to whatever term existed or was remaining prior to selection to office.
- j) Leadership posts shall be held alternately by representatives from industry, government, and academia on an alternating basis with consideration given to regional balance.
- k) Existing Chair and Deputy Chair nominate the new Deputy Chair, which is accepted by vote of the full Committee.
- l) Normal progression is to step from Deputy Chair to Chair post (note: implied four-year commitment by individual and organization).
- m) For VTOL/eVTOL industry and government members, nominations are accepted without vote. For others, new

members are nominated by individual Committee members and accepted by vote of full Committee.

- n) Terms for Session Chair and Co-Chairs are one year. Session Chairs volunteer and/or are nominated by Committee Chair and accepted by vote of full Committee. Normally Session Co-Chair becomes Session Chair in following year.

Member Roles and Responsibilities

- a) Participate in committee meeting at VFS Annual Forum or send a representative; non-participating members can have their membership revoked by a review of a sub-committee formed by the Chair.
- b) Review Forum abstracts.
- c) Review Forum papers. Select a Best Paper. Selection should be made by all or by a sub-committee of at least 5 members (selected by the Session Chair and Committee Chair).
- d) Evaluate presentation quality in eVTOL Session at Forum.
- e) Assist with recommendation for publication in the AHS Journal.
- f) Assist the Associate Editors of the AHS Journal as requested in reviewing papers submitted for the publication.
- g) Submit to the Chairperson yearly inputs for the Vertiflite Highlight article.
- h) Participate in Committee Specialists' meetings, workshops, and other activities.
- i) Participate in the nomination and selection of new members of the Committee.
- j) Accept and carry out action items assigned, as appropriate, during Committee meetings
- k) Liaison members are encouraged to promote inter/joint-TC or -society activities

Chairperson Roles and Responsibilities:

- a) Maintain Committee mission statement, charter, bylaws, membership records, and calendar.
- b) Maintain current list of Committee members and addresses (phone, email, mail).
- c) Maintain database of Committee member's self-described background and expertise for reference by AHS Journal eVTOL (or other) Associate Editors in selecting reviewers.
- d) Nominate Deputy Chairperson.
- e) Prepare call for papers and evaluation metrics for paper acceptance with Session Chair.
- f) Solicit volunteers and/or nominate Session Chairperson(s).
- g) Solicit nominations for academia and non-aircraft industry organizations.
- h) Prepare for and conduct Committee meetings.
- i) Send out Committee meeting announcements.
- j) Prepare Committee meeting agenda(s). Release Committee meeting minutes.
- k) Participate on sub-committee for Best Paper Review.
- l) Communicate Best eVTOL Paper and presentation results to VFS Technical Council and arrange for plaque(s) to be presented for Best Paper and presentation at the Annual Forum.
- m) Communicate results of Journal Quality recommendations to AHS Journal Associate Editors. Write yearly Vertiflite Highlights article on the basis of Committee input.
- n) Maintain contact with the Technical Director of VFS and members of the Technical Council. Prepare annual Committee reports and communicate to Technical Council.
- o) Represent the Committee in VFS planning processes as required. Coordinate with other Technical Committees as required.
- p) All other responsibilities of regular members.

Deputy Chairperson Roles and Responsibilities:

- a) Take and document Committee meeting minutes.
- b) Assist Chair as needed with Vertiflite Highlights article.
- c) Assist Chair in representing the Committee in VFS planning processes as required.
- d) Assist Chair in nominating new Deputy Chair.
- e) Participate on Sub-Committee for Best Paper Review.
- f) All other responsibilities of regular members

Session-Chairperson Roles and Responsibilities:

- a) Prepare and / or revise Call for Papers for Annual Forum with Committee Chair.
- b) Gather Forum paper abstracts, coordinate with other Technical Committee Session Chairs to categorize papers and distribute abstracts to the Committee for evaluation.
- c) Prepare metrics of evaluation with Committee Chair.
- d) Inform authors of selection. Organize eVTOL session(s) with Co-Chairperson.
- e) Coordinate with VFS HQ for correct Forum agenda.
- f) Forward written copies of Forum papers to Sub-committee for Best Paper review.
- g) Lead Best Paper review sub-committee and communicate results to Committee Chairperson.
- h) Chair one session at the VFS Forum

- i) All other responsibilities of regular members

Session Co-Chairperson Roles and Responsibilities:

- a) Assist, as needed, Session Chairperson with Call for Papers, selection of abstracts, and organization of eVTOL sessions.
- b) Participate on Best Paper review Sub-committee Chair session at the VFS Forum.
- c) All other responsibilities of regular members.

Handling Qualities Technical Committee Charter

Mission/Charter: this Committee studies flying qualities, stability and control, response modeling criteria, control systems, and ground and water handling. Handling Qualities encompasses aircraft characteristics, which govern the ease and precision with which a pilot is able to perform tasks in support of an aircraft mission. This includes basic vehicle stability and control/response characteristics and the pilot-cockpit vehicle interface.

The Handling Qualities technical committee shall strive to advance the state-of-the-art in various technical areas including:

- a) Applications of mathematical modeling to rotorcraft component integration.
- b) Operational needs and experience.
- c) Night and adverse weather requirements, and development of advanced flight control system.

These activities shall be accomplished through:

- a) High quality technical sessions held at the annual forums; technical specialists' meetings arranged with regional chapters.
- b) Soliciting technical papers and activity summaries for publications in the Journal and *Vertiflite*.
- c) Maintaining a strong technical organization
- d) Providing a training ground for new society leaders and maintain adequate historical records.
- e) Interact effectively with other technical committees within the Society.
- f) Coordinate and serve as a link between the Society and other professional societies as needed

Health & Usage Management Systems Committee [Updated 6/29/2021]

Mission: foster technical excellence in the vertical flight Health and Usage Management Systems (HUMS) community; disseminate technical information and promote advanced research and development that enables:

- a) Condition-based maintenance (CBM) for both military and commercial vertical flight aircraft.
- b) Certification of HUMS for maintenance credits.
- c) Total aircraft health management.
- d) Enhance safety, reduce operational cost and increase availability/mission readiness.

Charter:

- a) Sustain a diverse HUMS technical committee membership.
- b) Organize high quality HUMS technical sessions for the annual Forum and other technical meetings.
- c) Promote multi-disciplinary and systems perspectives.
- d) Support the Society's Forum best paper selection and Journal review process to ensure technical excellence.
- e) Promote and conduct relevant and timely technical meetings and workshops.
- f) Communicate international activities in industry, government and academia.
- g) Promote communications with the other Society's technical committees and professional societies.
- h) Serve as training ground for new leaders in HUMS.

Technical Focus, Capabilities & Competencies

- a) HUMS system analysis and architectural trade studies/tools and models.
- b) Embedded sensors, data acquisition and communication systems.
- c) Signal processing, incipient fault detection/isolation diagnostics and prognostics.
- d) Physics of failure models, seeded-fault testing, and analytical approaches.
- e) Design, development and certification of HUMS.
- f) HUMS information management and data integrity assurance.
- g) Data mining and data fusion, data-driven including artificial intelligence, machine learning (deep learning), and model based engineering (such as digital twin).
- h) Maintenance credits, probabilistic risk assessment and continued airworthiness.

History Committee Charter

Mission/Charter: the purpose of the History Committee is to facilitate the preservation and understanding of vertical flight

history. Specifically, the Committee will endeavor:

- a) To assemble a group of specialists in the technologies related to the technical history of gyroplanes, helicopters, and other vertical flight aircraft, and provide a focal point for the Society on vertical flight history.
- b) To facilitate the identification, preservation, and dissemination of key technical historical documents of benefit to the Society and to the community at large.
- c) To formally solicit papers on the history of vertical flight and have them presented them at the Forum, building a unique historical archive on vertical lift aircraft.
- d) To foster, promote and enhance the understanding of the technical history of vertical flight in the Society and between the various technical disciplines.
- e) To advise and help manage the dissemination of historical information regarding the history of vertical flight technology.

Committee Structure: the committee shall meet at least once each year, at the annual Forum, and include such activities as:

- a) Welcome any new and/or interested members.
- b) Solicit officer volunteers and vote for confirmation.
- c) Discuss progress toward meeting overall Committee goals.
- d) Discuss progress toward achieving specific Committee projects.
- e) Discuss potential new projects.
- f) Discuss and vote on matters of emphasis for the Committee.
- g) Discuss and vote on areas of application of financial resources.

The Committee will consist of at least 7 regular committee members, with no more than 15.

- a) The Committee will seek members who represent all facets of the field, with representation from the major industry, government, and academic organizations.
- b) All Committee members must be members of the Society. A member should serve on only one committee at a time.
- c) Committee members must actively participate in the committee business. Commitment must be obtained from the member and, where applicable, their supporting organization, to actively participate on the Committee and attend the annual Forum if at all possible.
- d) Membership is for a minimum of two years, with continuance based on interest level, contribution to the committee, and consistent effort to attend meetings.
- e) The committee elects the officers, with the Chair being approved by the Technical Director or the Deputy Director. The committee Chair is elected for a one-year period, with reconfirmation by the committee and the Technical Director or the Deputy Director. Typically, the renewal for a second term will be automatic, unless the Chair elects to step down.

The Committee officers will be led by the following officer positions:

- a) Committee Chair, responsible for: organizing and leading the annual meeting, coordination of assessing the technical quality of the History Session papers at the annual Forum, and, at the end of the committee Chair's term, propose to the Deputy Director a candidate successor to the Committee Chair's position.
- b) Deputy Chair, responsible for: taking over the Committee Chair's role if necessary and support the Chair in planning and execution of the Committee responsibilities and activities.
- c) Secretary, responsible for: recording and publishing meeting minutes in a timely manner; maintain and public committee officers and member's contact information.
- d) Forum Session Chair, responsible for: serving as the primary committee contact for the Forum History Session(s). Roles include drafting the Call for Papers, solicit papers, manage review of abstracts with the committee members, contact authors, organize presentation session(s) and conduct session(s).
- e) The Committee will appoint such sub-committee members as required for specific projects.

Manufacturing Technology and Processing Charter

Background: This committee was formed to coordinate the Society's activities related to advance manufacturing processes that enable deployment of rotary wing products or product capabilities. These include but are not limited novel manufacturing techniques, production planning and control approaches, and design optimization methods. The ultimate goal is to publicize how Integrated Manufacturing Process and Control technologies are providing the impetus that realizes the transformation of design concepts into functional product.

Mission: foster, promote, and enhance technical excellence, as well as support dissemination of latest information and advancements in the following technical areas:

- a) Advanced manufacturing processes such as direct digital manufacturing, augmented reality for shop floor

assembly, rapid prototyping, composite repairs for field support, ergonomic analysis to improve safety in manufacturing, etc.

- b) Highly-efficient production control techniques (in-process imbedded sensors, nondestructive evaluation, smart materials, etc.)
- c) Advanced tooling concepts and methods
- d) Lean manufacturing practices

Charter:

- a) Sustain a diverse Committee membership with balanced representation of industry, government, and academia.
- b) Organize and conduct high-quality sessions at the annual Forums.
- c) Support the AHS *Journal* review process to ensure technical excellence in IMPACT areas
- d) Promote and conduct relevant and timely technical specialists' meetings and workshops
- e) Promote and conduct collaborative research programs and multi-year workshops
- f) Promote and sustain communication and coordinated activities with other Technical Committees as appropriate
- g) Promote membership affiliation and communication with other professional societies

Manufacturing Technology and Processing Committee Bylaws

Committee Membership and Term Durations

- a) Terms for Chair and Deputy Chair are two years each.
- b) The existing Chair and Deputy Chair nominate the new Deputy chair, which is accepted by vote of the full Committee.
- c) Normal progression is to step from Deputy Chair to the Chair post
- d) Terms for Session Chair and Co-Chair are one year.
- e) Session Chair volunteers and/or is nominated by Committee Chair and accepted by vote of full Committee.
- f) Desirable for Session Co-Chair to become Session Chair in the following year.

Committee Roles and Responsibilities

Chair:

- a) Maintain Committee mission statement, charter, by-laws, membership records, and calendar.
- b) Maintain current list of Committee members and addresses.
- c) Communicate with Committee members as needed.
- d) Nominate Deputy Chair.
- e) Solicit volunteers and/or nominate Session Chair.
- f) Prepare for and conduct Committee meetings.
- g) Send out Committee meeting announcements.
- h) Prepare Committee meeting agenda(s).
- i) Release Committee meeting minutes.
- j) Participate on Sub-Committee for Best Paper Review.
- k) Communicate Best Paper and Presentation results to Society's Technical Council and Committee members.
- l) Write the yearly Vertiflite Highlights article on the basis of Committee input.
- m) Maintain contact with the Society's Technical Director and members of the Technical Council.
- n) Prepare semi-annual Committee reports and communicate to Technical Council.
- o) Represent the Committee in the Society's planning processes as required.
- p) Coordinate with other Technical Committees as required.
- q) All other responsibilities of regular members.

Deputy Chair:

- a) Take and document Committee meeting minutes.
- b) Assist Chair as needed with *Vertiflite* Highlights article.
- c) Assist Chair in representing the Committee in Society's planning process as required.
- d) Assist Chair in nominating new Deputy Chair.
- e) Participate on Sub-Committee for Best Paper Review.
- f) All other responsibilities of regular members.

Session Chair

- a) Revise Call for Papers for Annual Forum.
- b) Gather Forum paper abstracts, coordinate with other Technical Committee Session Chairs to categorize papers and distribute abstracts to the Committee for evaluation.
- c) Select papers based on Committee abstract review and inform authors of selection.

- d) Organize IMPACT sessions(s) with Co-Chair.
- e) Monitor progress in paper preparation.
- f) Coordinate with AHS for correct Forum agenda.
- g) Lead Best Paper review Sub-Committee and communicate results to Committee Chair.
- h) Chair one session at the annual Forum.
- i) All other responsibilities of regular members.

Session Co-Chair

- a) Assist, as needed, Session Chair with Call for Papers, assessment of abstracts, organization of impact sessions, and monitoring of papers.
- b) Participate on Best Paper review Sub-Committee.
- c) Chair session at the annual Forum.
- d) All other responsibilities of regular members.

Members

- a) Participate in at least one Committee meeting a year at Annual Forum.
- b) A representative should be sent when direct participation is not possible.
- c) Non-participating members can have their membership revoked by a review of a subcommittee formed by the Chair.
- d) Assist with the evaluation of Forum abstracts.
- e) Assist with the evaluation of presentation quality of presenters in IMPACT Sessions at the annual Forum.
- f) Assist with the evaluation of Forum IMPACT papers for recommendation for publication in the AHS Journal
- g) Assist with the evaluation of the technical papers for the Best Paper recommendation.
- h) Submit to the Chair yearly inputs for the Vertiflite Highlight article.
- i) Participate in Committee Specialist meetings, workshops, and other activities.
- j) Accept and carry out action items assigned, as appropriate, during Committee meetings.
- k) Participate in the nomination and selection of new members of the Committee.

Modeling and Simulation Technical Committee Charter

Mission: the Modeling and Simulation Committee provides focus on the use of virtual and constructive simulation in support of rotorcraft engineering design, test and evaluation, military doctrine development and aircrew training. The primary orientation of the committee is toward effective scientific and engineering application of these simulation types as opposed to facilities, per se.

Today, simulations can be presented in a virtual reality environment, on motion platforms, desktop workstations, or in portable containers and can be networked interactively with other simulations and live events. State-of-the-art computers are capable of simulating aircraft components, sensors and systems to a high level of fidelity. They can provide realistic out-the-window and sensor imagery. Sophisticated algorithms can be incorporated to simulate operational conditions that pilots and crew might encounter. Simulation applications in the areas of handling qualities, flight controls, pilot vehicle interface, armament, crew training, operations analysis, and the development of tactics, techniques and procedures for military operations are becoming routine as a part of design and development.

Charter: the Modeling and Simulation technical committee shall strive to provide a forum for the continued use of simulation in the aircraft life cycle and to allow a means of demonstrating its application in reducing the cost of design and development

The activities of the Modeling and Simulation Committee shall be accomplished by:

- a) Conducting high quality technical sessions at the Annual Forum and technical specialists' meetings.
- b) Solicit its membership from a broad base of simulation users/developers in both the military and industry.
- c) Hold, at least annually, a membership meeting to review yearly accomplishments and discuss future application of simulation in reducing rotorcraft development costs.
- d) Interact effectively with other technical committees within the Society in order to understand the needs of these other technical disciplines and define potential areas for future simulation application.
- e) Coordinate and serve as a link between the VFS and other professional societies.

Operations Technical Committee Charter

Mission/Charter: the Operations Committee will serve as the Society's focal point for addressing manned and unmanned applications of rotorcraft and powered lift aircraft in military, civil and paramilitary operations. The Committee will provide a channel for the collection and distribution of operational and technical information and will help focus industry and Government modeling, simulation, and technological solutions, including promising emerging technologies and operational

challenges in mission areas to include:

- a) attack/assault, reconnaissance, command and control
- b) vertical employment
- c) anti-submarine warfare
- d) heavy lift
- e) search and rescue
- f) offshore oil support
- g) aircraft medical services
- h) scheduled passenger transport
- i) aerial application
- j) human external cargo
- k) law enforcement
- l) electronic news gathering

The committee will:

- a) Conduct a technical session at the annual Forum.
- b) Promote regional technical meetings, encourage the use of the Society's publishing media.
- c) Establish the Society as the provider of technical expertise and leadership to the rotorcraft community and related technical organizations.
- d) Solicit its membership from a broad base of users and developers from the industry, military/government, and academia.

The committee will further serve as a forum for modeling, simulation, and technical information for rotorcraft operational and technological solutions in the following areas:

- a) Concepts of Operations
- b) Tactics/Techniques
- c) Tools/Technologies and Methodologies
- d) Rotorcraft Survivability/Vulnerability Analysis
- e) Electronic Decision Aiding to Operations
- f) Command/Control/Communications Techniques
- g) Intelligence/Data Gathering Applications
- h) Manned and Unmanned Teaming Applications
- i) Supportability Techniques
- j) Extreme Weather Operations Techniques

Product Support Committee Charter [Updated May 2020]

Mission/Charter: to influence the industry to implement product support enhancements, by recognizing the diversity of requirements in new and existing fleets.

This committee is dedicated to maturing the development and application of technology, processes, and innovations that support vertical lift operators and maintainers. The committee strives to influence the industry to integrate design concepts and enhancements that will contribute to the operators' supportability, safety and economy of operation.

Propulsion Technical Committee Charter

Mission/Charter: the Propulsion Committee charter is to emphasize and further the advancement of propulsion technology for vertical flight and foster its useful application throughout the industry with a focus on airworthiness safety.

This includes:

- a) Technology for power plant and power transmission design and criteria including their interaction
- b) Airframe interface, performance, operational environment, related accessories, and subsystems including
 - i. APU's starting systems
 - ii. fuel systems
 - iii. hydraulic systems
 - iv. pneumatic systems etc.

The Propulsion Committee places primary emphasis on the following areas:

- a) thermodynamics
- b) internal aerodynamics
- c) dynamics
- d) control systems

- e) drive system technology
- f) propulsion systems performance and operational characteristics
- g) EHUMS
- h) reduction of operating costs
- i) weight or maintenance requirements
- j) installation concepts
- k) environmental requirements, and integrated control systems including simulation uses to enhance propulsion systems.

These activities will be furthered through:

- a) High quality technical sessions held at the annual Forums and technical specialists' meetings.
- b) Technical papers and activity summaries prepared for publication in the Journal and *Vertiflite*.
- c) Maintain a strong technical organization, providing a training ground for new society leaders and maintain adequate historical records.
- d) Coordinate and serve as a link between the Society and other professional societies as needed.

Safety Committee Charter

Mission/Charter: the Safety Technical committee is created to increase the emphasis of safety in all technologies that are integral to the design/operation of a helicopter. Safety is to be considered both at the component reliability level and integrally at the level of the helicopter and its operations. The aim is to substantially increase the safe operation of the helicopter and increased survivability of its occupants in the event of an unsafe situation.

The committee will:

- a) Study the application and benefits of technology in order to negate the safety critical hazards to commercial, private and military rotorcraft in worldwide operations.
- b) The Safety technical committee will also coordinate the IHST initiatives and mitigation strategies within the Society's technical committees and promote the development of suitable technologies.

Committee Membership: the Committee's membership will include a small group of "core" members and liaison members from the other Society's technical committees.

Structures & Materials Technical Committee Charter [Drafted 2/2005]

Mission/Charter: the Structures & Materials Technical Committee should strive to satisfy the technical, educational, informational, and advocacy needs of the structures and materials community with interest in rotorcraft flight. The helicopter structure provides the platform that supports all systems necessary for aircraft performance. The helicopter structure should, therefore, be designed such that the pilot can successfully perform the aircraft's mission. The designed-in capabilities of the structure should assure readiness of the aircraft.

The Structures & Materials Technical Committee (S&M TC) shall strive to advance the state-of-the-art in all technical areas of structural analysis and materials. The technical areas shall not only include the behavior of materials and the fundamental methods of structural analysis but will also include the advances in these fields. Advances in the methods of analysis, for example, will include improved accuracy and faster turn-around times through the use of advanced engineering and computing resources. Advances in materials, for example, shall include comprehensive documentation of the material behavior pertinent to the rotorcraft industry. The use of resources, such as, large-model visualization and integrating the interaction of multi-disciplines, should be encouraged to enhance concurrent engineering within the Integrated Product and Process Development process. The goals of advances in structural and materials should be directed towards rapidly producing a lighter, more capable quality product less expensively.

These activities will be coordinated through:

- a) The organs of the Society
- b) Technical sessions and technical specialists' meetings will be arranged to foster advancement and interest at international, national, and regional levels
- c) Technical papers will be solicited for the Journal and *Vertiflite* to encourage the above goals.

The Structures & Materials Technical Committee shall:

- a) Maintain a strong technical organization and provide the training ground for upcoming Society leaders.
- b) Maintain historical records of its activities.
- c) Interact constructively with other technical committees within the Society to further its goals.

- d) Serve as a link between the Society and other professional societies for all structures and materials activities.

Fatigue and Damage Subcommittee Charter

Mission/Charter: the main purpose of this subcommittee is to foster the advancement of the technologies of fatigue and damage tolerance in rotorcraft design. This is primarily accomplished in two ways:

1. First, the subcommittee offers a forum for discussing the current issues involved in these two technologies and provides a means of keeping open communication amongst the subcommittee members and the rotorcraft community in general.
2. Second, the subcommittee seeks to investigate and clarify the details involved in making these technologies successful through member participation in round-robin technical problems.

Systems Engineering Technical Committee Charter [Drafted 5/2010]

Mission: to foster, promote, and enhance systems engineering technical excellence in the rotorcraft community through dissemination of information and providing integrated solutions across the rotorcraft system life cycle.

Charter: the charter of the Systems Engineering (SE) Technical Committee is to:

- a) Promote a unified understanding of SE through the Society.
- b) Cooperate with the rotorcraft community on common SE interests.
- c) Educate the rotorcraft community about SE best practices.

Focus areas include:

- a) Product, process application, technology, and integration.
- b) Lifetime learning and career promotion and development within the aerospace systems engineering community.

The committee will:

- a) Promote SE through professional development, webinar tutorials, consulting, and the organization and development of technical sessions for the Society's Forum and conferences.
- b) Collaborate with the other Technical Committees and other societies' technical committees in areas of mutual interest in order to promote product, technology, and process application; lifetime learning and career promotion and development.

Additional areas of responsibility include but not limited to:

- a) Planning agendas
- b) Selecting technical session topics
- c) Soliciting speakers and authors for applicable focus areas
- d) Reviewing and evaluating papers to be presented
- e) Choosing technical session chairpersons
- f) Selecting award recipients

The Systems Engineering Technical Committee will recruit and maintain active members with representation from the rotorcraft industry as well as others, academia, Department of Defense (DoD), and National Aeronautics and Space Administration (NASA) organizations. The members are expected to have the full support of their organization.

Test & Evaluation Technical Committee Charter [Updated May 2020]

Mission: to assess and promote national and international Vertical Lift Test and Evaluation domain activities and knowledge. To influence the advancement and relevance of Vertical Lift Test domain processes and practices impacting design effectiveness, flight safety, and regulatory frameworks. And develop and foster young and diverse professional member engagement in the Vertical Lift Test and Evaluation domain.

Charter:

- a) Maintain a strong technical organization.
- b) Sustain a diverse Committee membership including representatives of industry, government and academia.
- c) Organize high quality Forum sessions.
- d) Organize and conduct relevant Technical Specialist meetings.
- e) Support the VFS Journal to ensure technical excellence.
- f) Promote communication with other Technical Committees and other professional societies.
- g) Promote membership affiliation.
- h) Establish the VFS as an organization to which the government, industry, and the general public can look for assistance, direction, and leadership with respect to vertical flight aircraft design.

Committee Structure: the committee operates through the dedication of volunteers and should include representation from industry, government and academia. An annual committee meeting is held generally in conjunction with the Society Annual Forum.

- a) The number of regular committee members should be no more than 16, including the Chair.
- b) Membership should achieve a balanced representation of the active organizations, industry, academia and government.
- c) All Committee members should be members of the Society.
- d) Membership is for three years: terms could be extended if the member is elected / nominated as a Committee Officer.
- e) The Committee members should be active and recognized professionals in the field of the Committee.
- f) Commitment should be obtained from the members and their supporting organization that the member will be able to participate at one committee meeting a year.
- g) Periodic turnover is encouraged in order to bring new energy and ideas and to promote and encourage participation into the Society's activities.
- h) The committee elects the officers with the Chair being approved by the Technical Director.

Committee Officers

Chair: terms for Chair are two years.

- a) The Chair position should be held alternatively by representatives from the helicopter industry, government and academia.
- b) The Chair should provide a successor, preferably an experienced committee member and should ensure that at least one member is willing to serve.
- c) The Chair and the Deputy Chair nominate the new Deputy Chair.
- d) The Deputy Chair will normally progress to the Chair position.

Chair Roles and Responsibilities:

- a) The Committee Chair organizes and leads the annual meeting.
- b) Communicates with Committee members as required.
- c) Nominates Deputy Chair.
- d) Solicits volunteer or nominates Session Chair.
- e) Prepares Committee agenda.
- f) Communicates Best Paper and Presentation results to the Technical Director.
- g) Solicits papers for presentation to the yearly *Vertiflite*.
- h) Represents the Committee in VFS planning process.
- i) Coordinate with other Committee Chairs.

Deputy Chair: terms for Deputy Chair are two years.

- a) Progresses to the position of Chair.
- b) Assists the Chair to nominate the next Deputy Chair

Deputy Chair Roles and Responsibilities

- a) The Deputy Chair takes Committee meetings minutes.
- b) With the participation of the Committee members evaluates the papers presented as potentials for publication in the VFS Journal.
- c) Maintains contacts and assists the Chair as needed with *Vertiflite* articles.
- d) Assist the Chair with the preparation of the next Committee meeting.
- e) Serves as the Committee Secretary.

Session Chair: term for Session Chairs is one year.

- a) Session Chair volunteer or are nominated by Committee Chair and then approved by the Committee.
- b) If more than one session planned may suggest to the Committee Chair to nominate a Session Co-Chair

Session Chair Roles and Responsibilities:

- a) Revises and publishes the Call for Papers for the Annual Forum.
- b) Responsible for gathering the paper abstracts and coordinating the distribution to the Committee members for review.
- c) Selects the papers based on Committee review and informs the authors.
- d) Monitors final papers presentation.
- e) Chairs the Technical sessions.

Committee Members: terms for Members are three years.

Committee Members Roles and Responsibilities:

- a) Participate in one Committee meeting at the Annual Forum.

- b) Evaluate the Papers presentation.
- c) Submits to the Chair information to be presented in the *Vertiflite*.
- d) Participate in workshops and technical meetings.
- e) Participates in the nomination and election of new members of the Committee.

Unmanned VTOL Aircraft and Rotorcraft Technical Committee Charter

Committee Background: Uninhabited Aerial Vehicles and the associated field of intelligent robotic systems are becoming an integral element of the military and hold promise for many civil applications as well. The U.S. Congress, the Administration and the DoD have stated the intent to progressively transform to a force structure with a large component of UAVs in the execution of operational and intelligence collection operations. Other nations are also planning significant expansion into this area of technology. Currently the international budget for these systems is over \$2B and growing rapidly. In the future there is likelihood that certain classes of manned aircraft will also have alternative UAV modes of operation. The Society held a special UAV session at the 2001 Forum with outstanding participation, including significant international participation. Although there is an Association for Unmanned Vehicle Systems International and a European Uninhabited Vehicle Systems annual meeting, these groups are very broad-based and do not represent the special technical interests of the vertical flight community.

Mission: This committee focuses on new technologies for UAV systems with a balanced consideration of five broad areas: autonomy and operability; reliability and robustness; payloads, sensors and data links; performance; and survivability.

Charter: the committee will focus on those aspects of UAV vertical flight technology that are unique to these types of systems, with the major emphasis on the emerging field of intelligent semi-autonomy and interoperability with manned systems. Other UAV-unique technologies associated with performance, sensors and payloads, reliability and robustness, operability and survivability will also be considered.

Technical Scope: the committee seeks to focus on new technologies for UAV systems with a balanced consideration for five broad areas of capability and will act as the technical focal point for developments in these areas:

- a) **Autonomy and Operability:** for minimum operator intervention except when the situation requires for mission-related reasons and to minimize the level of operator training.
- b) **Reliability and Robustness:** to achieve increased air vehicle operability and affordability by system improvements to significantly reduce air vehicle loss rates
- c) **Payloads, Sensors and Data Links:** to enable a wide range of missions and concepts of operation in instrument meteorological conditions.
- d) **Performance:** to permit the greatest degree of mission flexibility in terms of range, endurance, payload, speed and altitude.
- e) **Survivability:** for military systems.

It will address UAV-unique aspects in areas such as:

- a) innovative system design (including ground control elements and networking)
- b) UAV unique sensors and payloads
- c) sensor exploitation and perception
- d) situational awareness and understanding
- e) intelligent semi-autonomous avionic systems
- f) task and goal based decision making technologies including emerging multi-layer architectures
- g) all-electric flight controls
- h) obstacle and aircraft sensing and avoidance
- i) threat detection sensing and avoidance
- j) combined manned-unmanned operations
- k) airspace operations, safety, reliability, and testing

Advances in the more traditional technology areas of aerodynamics, structures, materials, dynamics, propulsion and drive systems, acoustics, etc., will either be referred to the standing committees or incorporated within this committee as appropriate.