

Robotics and Automation Society
AdCom Minutes: 12/16/89

Approved with correction to Item 8.4
May 14, 1990

IEEE Robotics and Automation Society AdCom Meeting Minutes
Hyatt Regency Tampa Hotel, Tampa, Florida
December 16, 1989

LIST OF ATTENDEES

A. C. Sanderson, President
Y. C. Ho, Past President and AdCom member
R. D. Klafter, Vice-President for Finances
H. E. Stephanou, Vice-President for Member Activities
T. J. Tam, Vice-President for Technical Affairs
C. S. G. Lee, Secretary and AdCom member
A. Ephremides, Division 10 Director
A. K. Bejczy, AdCom member
A. A. Desrochers, AdCom member and Chairman, Education Committee
T. Fukuda, AdCom member and Chairman, International Committee
J. M. Hollerbach, AdCom member
A. J. Koivo, AdCom member and Program Chairman, 1990 Conference
J. Y. S. Luh, AdCom member
R. H. Taylor, AdCom member and Editor of Transactions
R. W. Brockett, Chairman, Meetings Committee
R. A. Volz, General Chairman, 1990 Conference
T. C. Hsia, General Chairman, 1991 Conference
V. J. Lumelsky, Chairman, Robot Motion & Path Planning Tech. Comm.
G. Menga, Chairman, International Committee
M. Vidyasagar, Chairman, Future Directions in R & A

1. APPROVAL OF AGENDA AND MINUTES OF LAST ADCOM MEETING

The meeting was called to order by President Sanderson at 9:04am.

The meeting agenda was adopted and approved.

The minutes of the R&A AdCom meeting held on May 15, 1989 at Registry Resort, Scottsdale, Arizona, were approved.

2. REPORT ON STATUS OF THE SOCIETY

2.1 President Sanderson indicated that the status of the Society in terms of the membership and finances seem to be in good shape. He indicated that there are several areas

where we need to look for new ideas and new ventures with the Society. They are the membership and the technical directions.

- 2.2 Stephanou, V-P for member activities, is making some start in the terms of the membership formation of chapters. Sanderson stressed the importance and impact of the movement of technical areas/fields. He cited his personal impression and experience that he had with last year's Region 10 Colloquium which Ephremides (Division 10 director) organized as worthwhile and interesting. He liked to see some discussions on issues about how best to do with movement of technical areas/fields, and what are the mechanisms and so on.
- 2.3 Another important area is Education which plays an important role of the Society that we should look at. Sanderson indicated that Desrochers has been Education Chairman and is stepping down. Pradeep Khosla of Carnegie Mellon University agreed to take over this position. Sanderson had talked to Khosla about some new initiatives in Education.
- 2.4 Sanderson indicated that two proposals for the 1992 Conference had been received and we need to discuss them and make a decision in this meeting.

3. DIVISION 10 DIRECTOR REPORT

- 3.1 Ephremides, Director of IEEE Division 10, pointed out a couple of items that may require some action: TAB Regional Colloquium in Region 9 (South America) and reorganization of the volunteer structure of IEEE. The first was a new technical activities like the one that the Society participated (Sanderson and Tarn were Society representatives) last year in Region 10 Colloquium. This year there is a proposal to have a similar and somewhat better organized affair in Region 9. In February at the meeting of the TAB, the proposal will be fully presented and decided upon including details, funding, format, etc. Details unfortunately are not available now. Because the TAB would like to organize it a little better than they did last year, they would like to have everything locked by about April. Funding and cost-sharing structure will be similar to last year's. So the Society may want to think ahead whether to participate it or not.
- 3.2 The other item was the reorganization of the volunteer structure of IEEE. In the June meeting of the Board of Directors of IEEE after a reorganization of the staff structure of IEEE had been debated and decided upon, many proposals for the structure of the volunteer society of IEEE were presented, and a committee was appointed by the Board of Directors to report back in August about what it thought the volunteer structure should be like. It came back in August with a proposal that was rather radical and there was an urge to act on it quickly and, in fact, there was motion that the

Board approved the concept of that plan of reorganization and that it should be implemented by 1990-1991. Since then the feedback received was mostly negative, so in the November meeting of the Board of Directors, it was sort of a technical retreat from the part of the proposal of the reorganization and they would like to seek further feedback before they finalize it. Ephremides doesn't think there is any need for immediate reaction from the Society, he would like the Society to be aware of the plans (Sanderson has the information) because when either plan is implemented, the Society may be affected in terms of resources, staff support and so on. Some discussions followed that focussed on the reasons and the main thrust for reorganization.

4. VICE-PRESIDENT FOR TECHNICAL AFFAIRS REPORT

- 4.1 Tarn, Vice-President for Technical Affairs, has organized three new Technical Committees on Computer-Aided Production Management (chaired by Peter Luh), Future Directions in Robotics And Automation (co-chaired by M. Vidyasagar and John Bailieul), and Intelligent Instrumentation and Measurement System in Robotics and Automation (chaired by Janos Sztipanovits). Also Robot Dynamics & Control (chaired by O. Khatib). Currently, Tarn is looking for a chairman for the Microrobot Technical Committee. Each committee chairman will try to get membership for his committee.

5. VICE-PRESIDENT FOR MEMBER ACTIVITIES REPORT

- 5.1 Stephanou, Vice-President for Member Activities, reported that at the present time we have 6,205 active members and we have 1,902 members dropped from the Society, that is people who have not renewed their subscription to the Transactions from last year's Journal. Stephanou worked out a ratio ($\frac{\text{members disappeared}}{\text{active members} + \text{members disappeared}}$) and compared this ratio with two other societies (Systems, Man, and Cybernetics and Control Systems Societies). At the end of October, that number for our society was 23.5% as compared with 19.2% for SMC and 19.4% for Control Systems. So we are not that far up. One encouraging data is that the ratio is slowing down; in August it was 24.7% and in September it was 24%. Also the percentage of unemployed members of our society is 0.7% as compared to 0.5% for SMC and 0.4% for Control Systems. Stephanou would like, through the newsletter, to try to get some feedback from the membership at large on how the Transactions serve the interests of the members because this is primarily what is going to determine the interest of the membership.
- 5.2 We have nine chapters and there have been several requests or at least responses from the instigation for chapter formation outside the US. Fukuda also tried to form a

chapter in Tokyo, Japan. Also Stephanou would like to look into the Distinguished Lecture Series and he solicits ideas or suggestions from the AdCom members. Stephanou also mentioned the category of affiliate members, which mean that the person can join the society without being a member of IEEE, and our ratio in that is 2.3% which is higher than SMC which is running at 0.9% and Controls Systems which is 0.4%.

6. VICE-PRESIDENT FOR FINANCES REPORT

- 6.1 Klafter, Vice-President for Finances, handed out a three-page report (see Attachment A at the end of the minutes) and reported that the Society is financially healthy. The net worth of the Society at the end of 10/31/89 was about \$400,000. This figure came from taking \$378,500 subtract \$45,000 (for Transactions estimated expense) and plus \$60,000 (surplus from 1989 Conf.). Klafter indicated that the Transactions takes up almost 79% of the expenses through 10/31/89. Also notice that the expenses for the conference were reported for this year is 0.4% because books for the 1989 conference had not been closed and the accounts had not been transferred. The approximate surplus for the 1989 Conference is not shown in any of these figures which was \$61,000 (the projected surplus was \$6,000). Klafter also pointed out that the projected budget figure is almost \$29,000 in the red for 1990, and that's an IEEE projection. The projection is not quite accurate because the IEEE projected approximately \$6,000 surplus for the 1990 Conference in Cincinnati; we budget somewhere between \$2,000 and \$6,000 surplus for our conference as we usually have a higher surplus. A more realistic figure for net 1990 might break even, perhaps a small surplus.
- 6.2 Klafter also mentioned that the IEEE is doing a better job in collecting Transactions page charges because the actual page charge income is over \$5,000 above budget (\$20,200 has been collected so far). Over a five-year period, the voluntary plus the excess page charges that we have actually collected just about equal to what the excess page charge would have brought in if there had been diligence to collect. IEEE has changed their policy at the urging of the Society and that is now being reflected here. So this is actually a recent significant income item for us.

7. NOMINATING COMMITTEE REPORT

- 7.1 Ho, Chairman of the Nominating Committee, indicated that he had consulted with all the previous presidents and "older" members of the AdCom in soliciting nominations for the President-elect 1990. With all these consultations and excluding all the previous presidents for election (since they had already served the Society), Norman Caplan of the National Science Foundation and Dick Volz of the Texas A&M

University received the most nominations. Both candidates agreed to stand for election. Ho also indicated that the elected President-elect will serve as President-elect for 1990, will take office as President on January 1, 1991, and will serve as President for one year in calendar year 1991. The normal plan is that we have an active President and a President-elect who is in place to take office the following year and that President-elect is in office for one year. Ho also indicated that we agreed last May the President will take office in January, Vice-Presidents who are elected will take office at the same time in January. The AdCom elections are in the spring to take office in May. The President-elect probably in June next year will start making appointments of people who will serve with him in 1991.

Some discussions then followed as to why these two candidates were nominated (both got multiple nominations from the previous presidents), qualifications of the candidates (both have done some significant work in robotics and automation), who can vote (18 Adcom members, 3 VPs, Secretary, and President). Another "popular" candidate is George Bekey, but he declined to stand for election.

After some long discussions, a motion (Taylor) was made that the President of this Society can accept write-in votes for this election until December 31, 1989. The motion was seconded; after some discussion, the motion was tabled. An other motion was made to suspend the bylaws for this election; the motion was defeated for fear of setting a precedence.

Secret ballot was voiced by some AdCom member. A total of 13 ballots were collected, Sanderson counted all the ballots and announced that Norman Caplan was elected as President-elect 1990.

After the election, some discussions followed on the process for future elections of President-elect. A motion was made (Taylor) and seconded that the Nominating Committee should send to all voting members a proxy form attached with information about the candidates and statements from candidates at least four weeks before the Adcom meeting. The motion was passed.

Another motion to permit write-in absentee ballots from AdCom members to the President for President-elect before the meeting was defeated.

Another motion that a proxy can be given to any voting member who will be present in the AdCom meeting was passed.

Another motion that to elect President-elect in the annual Robotics and Automation Conference was passed.

- 7.2 For the election of AdCom members to serve for a 3-year term, Ho indicated that last year six AdCom members were randomly chosen to serve for one year. These AdCom members, excluding himself, were re-nominated, and he added 3 additional members to stand for election. The 5 "old" AdCom members are Tony Bejczy,

Alan Desrochers, Takeo Kanade, John Luh, and George Saridis, and the 3 additional members are Rui de Figueiredo, Vladimir Lumelsky, and T. J. Tarn. All these 8 people have been contacted and they all agreed to stand for election. Their names will be submitted to the membership for election in February.

8. MEETINGS COMMITTEE REPORT

- 8.1 Hollerbach, Program Chairman of the 1989 Conference, indicated that the Conference went well. Since then, he had put together a folder of what he did to run the conference and handed that over to Koivo. He would like to see the possibility of some database being made on how to run the Conference.
- 8.2 Volz, General Chairman of the 1990 Conference, indicated that the Conf. will have 7 or 8 parallel sessions. The meeting rooms occupy two floors: large rooms for each session and an area for exhibitors.
- 8.3 Koivo, Program Chairman of the 1990 Conference, indicated a total of 712 papers were received; 451 from US, 52 from Japan, 53 from Canada, and 22 from UK. The Program Committee will meet on January 6 in Indianapolis at the Holiday Inn to discuss the papers. The sessions are from 9:00am to 5:30pm, reception is on Monday, banquet on Wednesday, and workshops and tutorials on Monday. Plenary sessions are planned for Tuesday, Wednesday, and Thursday.
- 8.4 A lengthy discussion was focused on an unprecedented workshop which overlaps one half day (Tuesday morning) of the regular conference technical presentations. This is Workshop 2D — Strategic Directions in Computational Robotics: Symbolic, Algorithmic and Neuromorphic, organized by Chuck Weisbin of JPL. Koivo indicated that he was opposed to this arrangement. In a conference telephone call in which Koivo, Sanderson, Volz, and Gulati of JPL participated, a compromise was reached. This compromise arrangement will allow Monday and Tuesday morning for the Workshop. The participants in the conference felt that the Workshop had special attractions with some well-known speakers such as Drs. Redding, Mead, Grossberg, who had promised to participate. Some AdCom members expressed that they felt uncomfortable with the arrangement because it could be used as a precedence in the future.
- 8.5 Koivo indicated that Ernie Hall is the Chairman for local activities. He has got about 20 people over there working with him and they have organized various tours for the Conf. participants. Hall will try to provide the VHS equipment for videotapes which will save a lot of money (the hotel accepts this arrangement). Also the local robotics chapter would like to sponsor a student video contest in robotics. They will provide a \$500 prize award. Later in the discussion, two proposals were brought up. One was

to give free registration including proceedings to the students workers. The second was for any student who wanted to register more cheaply (\$50) and not get copies of the proceedings that he could xerox copies from a colleague. Both proposals will encourage student attendance. The decisions were later tied to the conference budget.

- 8.6 Hsia, General Chairman of the 1991 Conference, passed out a tentative budget of the Conference. The projected surplus would be \$6,150. The Conference is tentatively set on April 7 (Sunday through Thursday) at Sacramento. There are 550 rooms for the Conference, and the main hotel has 350 rooms. He plans to have 6 parallel sessions. No author's breakfast will be planned. Hsia will submit a final budget for approval at the Cincinnati AdCom meeting.

Tarn, Program Chairman of the 1991 Conference, indicated that, besides Stephanou, he has invited Randy Phillips of General Electric and Furuta of Tokyo Institute of Technology as Program Vice-Chairpersons.

- 8.7 Klafter noted that there are some new regulations regarding conferences that have income over \$250,000. For those conferences, you have to hire a professional auditor to audit the books. Up to now the books have been audited in a haphazard manner — basically we've been trusting. But that is no longer acceptable because apparently there have been irregularities among conferences and IEEE wants outside auditors. Since our Conferences are not above \$250,000 so at this point we don't have to go outside, but IEEE is also trying to enforce a stricter audit for smaller conferences. Another item on finances relating to conferences is that starting with the 1990 Conference, the IEEE will not pay 500 copies of conference proceedings, instead the price will be paid at the incremental cost of 500 copies. Klafter indicated that the impact to the Society's finances may be minimum.

- 8.8 Brockett, Chairman of Meetings Committee, indicated that the co-sponsorship business has fallen off remarkably. Only one request from the American Nuclear Society for the Fourth Topical Meeting on Robotics and Remote Systems, Albuquerque, NM, February 24-28, 1991, organized and hosted by Sandia National Laboratories for in cooperation with the IEEE Robotics and Automation Society. And it has been done and approved.

For the cosponsorship of the MEMS (Micro Electro Mechanical Systems), the first was in Hyannis, and the third one will be in Napa Valley in February (which we had advanced a total of \$21,000), and the fourth one will be in Japan. The fourth one is not requesting advance; in the past the RAS has \$10,000 advance per MEMS meeting, and last time we made \$8,000. After some discussion on the profit-sharing and commitment, a motion for co-sponsorship of the 1992 MEMS to share the profit 50-50 and give IEEE the non-exclusive rights to distribute the proceedings (also share the deficit) was passed and it authorizes Sanderson in consultation with Klafter

and Brockett for final approval based on the additional information that they will receive from the conference organizing committee.

- 8.9 Vidyasagar, Chairman of Future Directions in R&A Tech. Comm., suggested reduced rate for Indian participants. A motion was passed that authorizes the International Committee to work with Klafter to look into this matter.

- 8.10 Two proposals were submitted to host the 1992 R&A Conference. One from Giuseppe Menga to host the Conference in Nice, France; the other one from Toshio Fukuda to host it in Tokyo, Japan. Each was given five minutes to present their proposals.

Fukuda's proposal proposes May 18-22, 1992 in Nippo Convention Center. He expects 300-400 participants from Japan and 200 from US. He answered questions relating to hotels, transportations, etc.

Menga's proposal proposes sometime in May in Nice, France. The hotel cost is reasonable in May. He picked Nice because of technical supports from the surrounding areas. He then answered questions relating to conference topics, transportation, attendance and budget, dates for conference, etc.

The AdCom members in general were happy with the proposals; they all agreed that both proposals were nicely done. After some discussions on responsibility, funding for travel, management of conference, etc., a motion was passed to approve Menga's proposal with some conditions such as logistic details, appoint a US Co-chairman, broaden participants and topics of interest. The favorable conference dates are second week of May (first choice), third week of May (second choice), and first week of May (third choice).

The AdCom also encouraged Fukuda to re-submit his proposal for sponsoring 1994 or later years for the R&A Conf.

9. PUBLICATIONS COMMITTEE REPORT

- 9.1 Kelley, Chairman of Publications Committee, was not able to attend the meeting. He submitted a brief report to AdCom for consideration (see Attachment B).
- 9.2 Taylor, Editor of Transactions, gave a presentation on the status of the Transactions. He indicated that submission of the papers is up and the acceptance rate of the Transactions is about 28%. Three new technical editors have been recruited: Roger Brockett, Chae An, and Chuck Weisbin. He also indicated some issues will be discussed in the Editorial Board meeting about publishing the Transactions with other societies, e.g., biomedical.
- 9.3 Snyder, Editor of the Newsletter, would like to step down. Sanderson had asked Kelley to work with Snyder to identify a successor, and the possibility of publishing

magazine instead of newsletter.

10. BRIEF REPORTS FROM TECHNICAL COMMITTEES

- 10.1 Due to the limitation of time, the Chairman of each Technical Committee did not give a brief report. Brief reports were received either at the meeting or after the meeting, they are attached to the end of the minutes.
- 10.2 Report on the activities of Robot Motion & Path Planning Technical Committee was submitted by Lumelsky (see Attachment C).
- 10.3 Report on the activities of Standards Committee was submitted by Haynes (see Attachment D).
- 10.4 Report on the activities of Intelligent Instrumentation and Measurement Systems in Robotics and Automation Technical Committee was submitted by Sztipanovits (see Attachment E).

11. OTHER BUSINESS

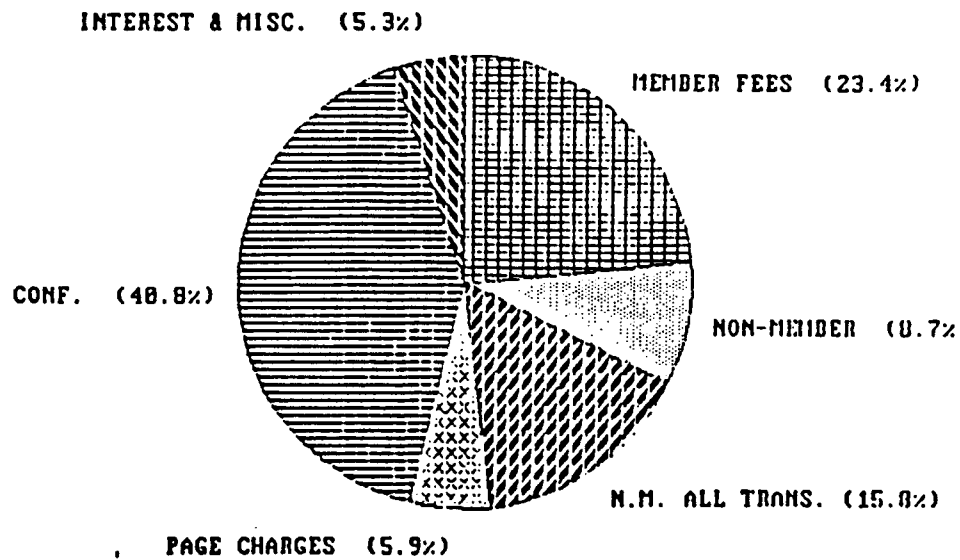
- 11.1 Desrochers, Chairman of Education Committee, would like to step down, and Pra-deep Khosla of Carnegie Mellon University will take the position.
- 11.2 Neural network becomes council, Snyder and Tom Miller are Society's Liaisons.
- 11.3 Meeting adjourned at 3:10pm.
- 11.4 Next Meeting: Monday, May 14, 1990 at the Hyatt Regency Hotel, Cincinnati, Ohio, 1:00 pm — 6:00 pm, at the call of President Sanderson.

Attachment A

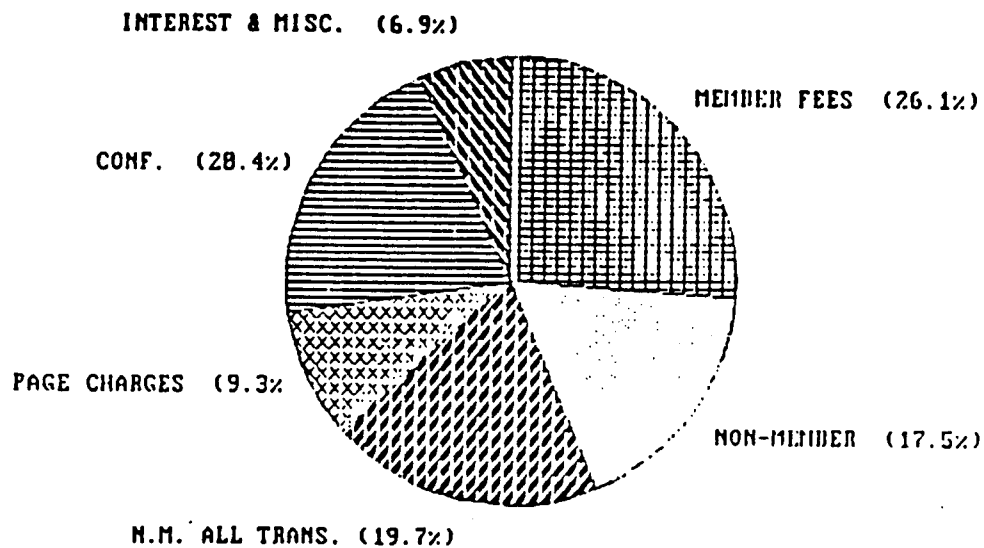
RAS - BUDGET REPORT [TAMPA] - DECEMBER 16, 1989

ITEM	BUDGET 1989	ACTUAL 10/31/89	BUDGET 1990
1. MEMBER AND AFFILIATE COPIES			
2. STUDENT MEMBER COPIES	5781	5150	5334
3. INDIVIDUAL NON-SOCIETY COPIES	554	1046	583
4. IEEE NON-SOCIETY AND MEMBER	309	455	387
	313	0	0
INCOME (\$1,000)			
5. MEMBERSHIP FEES	\$91.1	\$78.9	\$84.7
6. INDIVIDUAL NON-MEMBER SUBSCRIPTIONS	\$34.0	\$53.0	\$48.0
7. NON-MEMBER ALL TRANSACTIONS	\$61.3	\$59.6	\$69.5
8. PAGE CHARGES	\$23.0	\$28.2	\$27.2
8A. VOLUNTARY PAGE CHARGES		\$10.6	
8B. EXCESS PAPER LENGTH		\$17.6	
9. CONFERENCES [87(\$0.6);88(\$48.6);87ur(\$12.3)]	\$158.7	\$61.5	\$198.0
10. MISCELLANEOUS INCOME	\$8.4	\$3.3	\$10.0
11. INTEREST	\$12.1	\$17.6	\$12.1
TOTAL INCOME	\$388.6	\$302.1	\$449.5
EXPENSES (\$1,000)			
12. TRANSACTIONS			
13. NEWLETTER	\$179.3	\$170.5	\$227.3
14. MSC. PERIODICAL EXPENSE	\$34.0	\$14.6	\$34.3
15. CONFERENCES [87 (\$108.9);88 (\$139.0)]	\$5.0	\$5.2	\$6.1
16. MSC. EXPENSES	\$145.3	\$0.9	\$192.2
17. MSC. IEEE EXPENSES	\$0.0	\$5.7	\$0.2
18. AD COM	\$4.8	\$13.9	\$6.3
	\$17.7	\$6.1	\$12.0
TOTAL EXPENSES	\$386.1	\$216.9	\$478.4
19. SURPLUS FOR THE YEAR	\$2.5	\$85.2	(\$28.9)
20. NET SURPLUS [\$271.3 AS OF 12/31/88]	\$273.8	\$356.5	\$242.4
ADDITIONAL INCOME - LOANS			
21. 89 MICRO ELECTRIC SIGNALS - \$10.0			
22. 90 MEMS WORKSHOP - \$12.0			
23. TOTAL LOANS OUTSTANDING		\$22.0	
ADDITIONAL EXPENSES TO 12/31/89 [ESTIMATED]			
24. TRANSACTIONS			
NET		\$45.1	
		\$378.5	

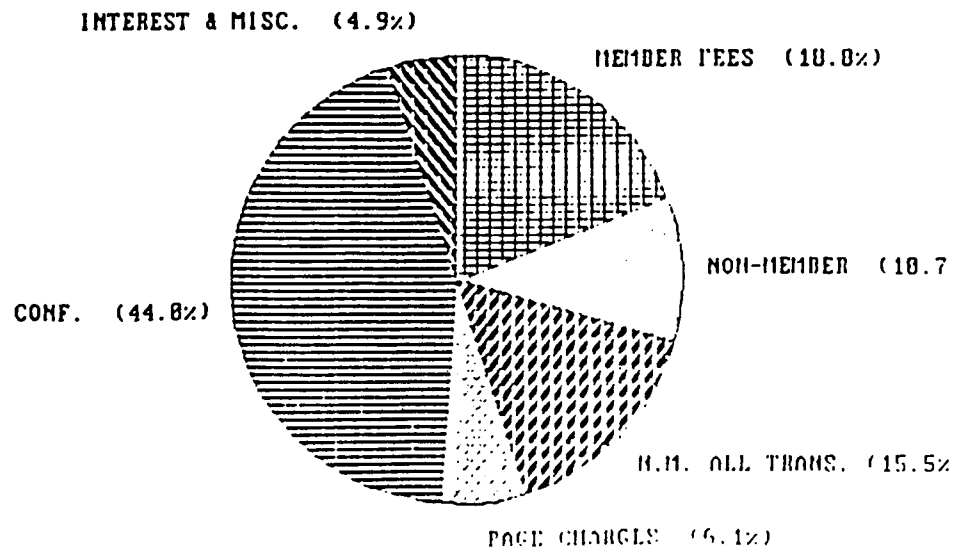
1989 BUDGET INCOME



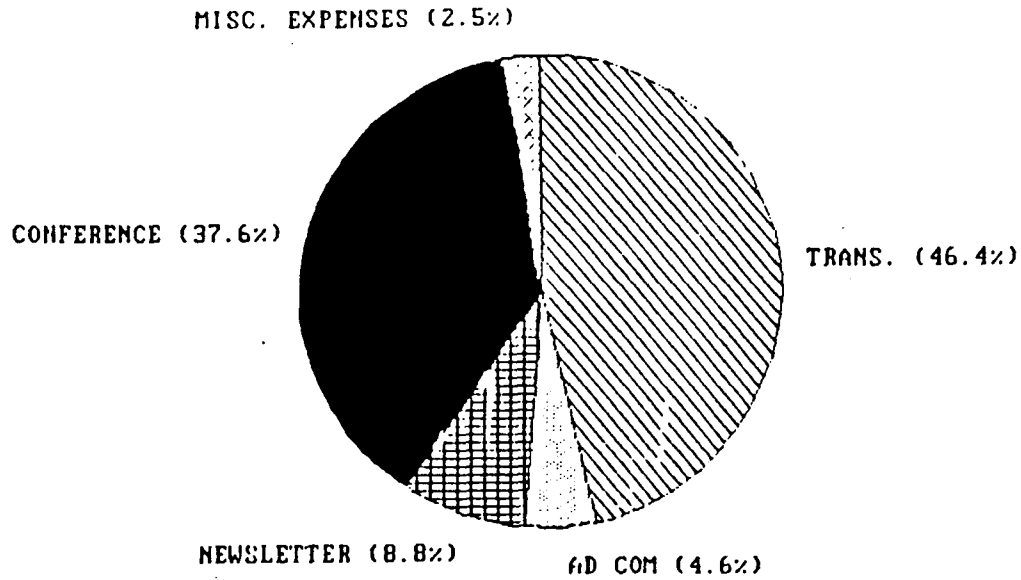
INCOME THRU 10/31/89



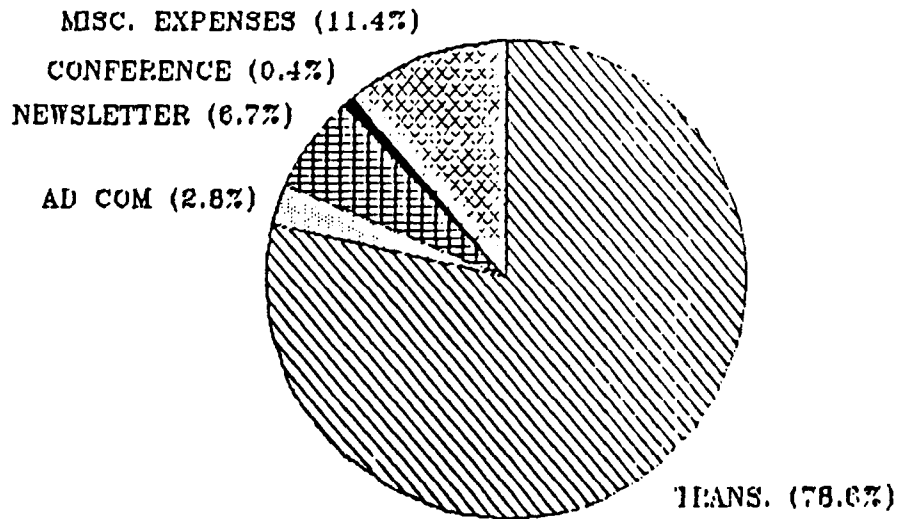
1990 BUDGET INCOME



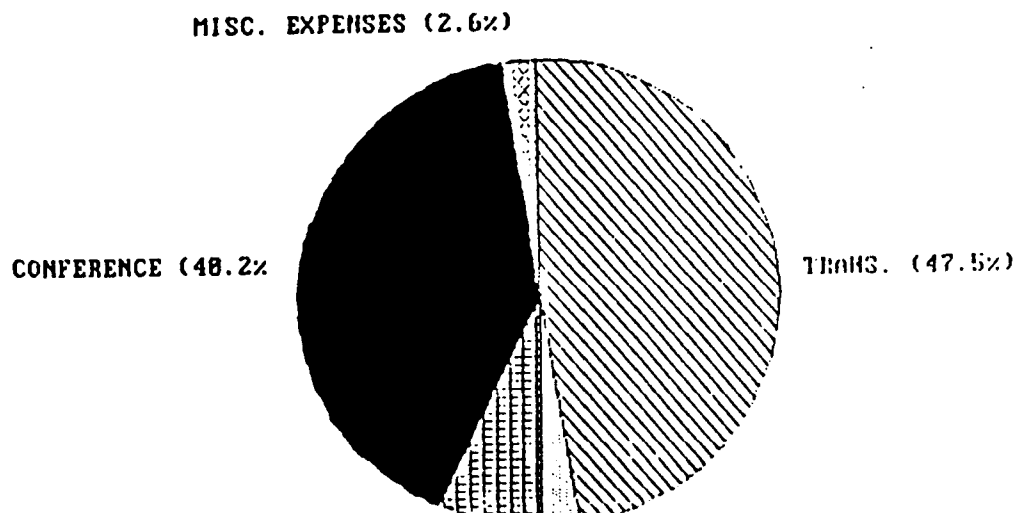
1989 BUDGET EXPENSE



EXPENSES THRU 10/31/89



1990 BUDGET EXPENSE



Attachment B

IEEE Robotics and Automation Society Publication Committee Report

December 16, 1989

Robert B. Kelley, Chairman

Transactions

I have been in touch with Russ Taylor, Transactions Editor, and have asked him to consider the formulation of policies for consideration at the next editorial board meeting. These policies would be aimed at both streamlining the handling of manuscripts and decreasing the total workload on the editor, the associate editors, technical editors and the reviewers.

Russ will submit his own report on the operation of the Transactions.

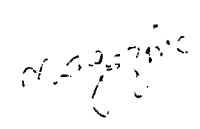
Newsletter

I have been informed that Wes and Roz Snyder will be stepping down after the June issue of the Newsletter. Since they have done such an outstanding job of getting the Newsletter off the ground, it is important to find immediately a successor so there will be no break in continuity. I am asking the AdCom Committee to publicize the opportunity afforded by this upcoming vacancy. Please nominate qualified candidates to me (e-mail: kelley@ral.rpi.edu) or Art Sanderson (e-mail: acs@ecse.rpi.edu). All leads will be followed up.

Wes will submit his own report on the operation of the Newsletter.

Other Publications

The Conference Proceedings is the only other matter to be considered. I'm not aware of any critical issues at this time.



Attachment C

**IEEE Society of Robotics and Automation
Technical Committee on Robot Motion and Path Planning
Report for the period May 1989 — December 1990**

There were two highlights that dominated the Committee's activity during the indicated period:

1. Preparation of the Special Issue of the IEEE Transactions on Robotics and Automation (Guest Editors -- R. Brooks and V. Lumelsky). The topic of the Issue is "Sensor-Based Planning and Control in Robotics". As of today, the reviewing process is complete and the Issue (9 papers in total) has been approved for publication in the December 1989 issue of the Transactions.
2. Preparation of the IEEE International Workshop on Intelligent Robots and Systems (IROS'89). The Workshop took place on September 4-6, 1989, in Tsukuba, Japan (Program Chairmen -- T. Arai, University of Tokyo, and V. Lumelsky, Yale University). Two special sessions directly related to motion planning and control have been organized:
 - S1: Implementation Issues in Sensor-Equipped Robotic Systems.
Chairman - Dr. F. Pin, Oak Ridge National Laboratory, USA.
 - S2: Position Estimation for Autonomous Vehicles.
Chairman - Dr. I. Cox, Bell Laboratories, USA.

Vladimir Lumelsky,
Committee Chairman

November 27, 1989

Standards Committee Report

**ADCOM Meeting - December 16, 1989
Tampa, Florida**

**Prepared by
Leonard S. Haynes, Ph.D.
Chairman, Standards Committee**

A notice was published in the last issue of the Robotics and Automation Society Newsletter asking persons interested in participating on the Standards Committee to notify Leonard S. Haynes. Three responses were received to date as a result of the newsletter notice.

Mr. Ken Goodwin, Deputy Chief of the Robot Systems Division at the National Institute for Standards and Technology has also expressed interest in participating on the committee. He has informed me that NIST is planning to expand its work in the standards area. NIST could be a very important participant on the Standards Committee.

The first meeting of the Next Generation Controller project (sponsored by the Air Force - Martin Marietta Denver is Prime) was held in Dayton on December 7 and 8, 1989. This program has as one of its primary goals the development of standard interfaces and standard data structures for the next generation of robot and machine tool controllers. However, efforts related to standardization are not scheduled to begin until late in 1990 so no significant plans or results are available at this time.

The RIA Standards Committee for Information and Communication (R15.04) has completed a **Robot Companion Standard** for the ISO 9506 Manufacturing Message Specification. (This is an Application Layer for MAP specifically for robots.) A joint R15.04 and US TAG/ISO/TC184/SC2 meeting was held 9/26-27/89 to review all ballot comments. This Draft Standard must still be approved by the Directors of ISO but this is pro forma and the Draft Standard will issue in May 90. The European Economic Community will certainly conform to the standard, and GM, Ford, and Chrysler all helped develop the standard so there is a good chance U.S. robot vendors will also conform.

The R15.04 Committee's work on MMS (originally organized by L. Haynes) is now complete as noted in the above paragraph. R15.04 has dwindled to three active members meaning that, to my knowledge, there is no serious work anywhere in the U.S. related to robot standards for Information and Communication. There is still some RIA work ongoing related to performance measures.

Attachment E

IEEE Robotics and Automation Society Intelligent Instruments and Measurement Systems Technical Committee Fall 1989

Purpose

The purpose of the Intelligent Instruments and Measurement Systems Technical Committee (IIMS TC) is to promote the exchange of scientific information in its field of interest. The IIMS TC may advance its objective by organizing national and international conferences, symposia, workshops, and by co-organizing or co-sponsoring such meetings with other professional societies. Other forms of the IIMS TC's activities may include publishing newsletters or other special publications.

Field of Interest

The general field of interest of the IIMS TC is the collection and interpretation of sensory data in robotics and automation systems. Specific topics of interest include intelligent sensors, sensor fusion, use of machine intelligence for sensory data interpretation, intelligent monitoring and diagnostics, hardware and software architectures for intelligent instruments and measurement systems in robotics and automation.

Activities of TC in the fall of 1989

The first steps after the establishment of the TC were: (1) to identify a core membership group for the TC, (2) to formulate the Purpose and Field of Interest, and (3) to start the organization of the first event sponsored by the TC.

The first event sponsored by the TC will be the Intelligent Sensory Processing workshop organized in the 1990 Robotics and Automation Conference. The common theme of the workshop is the theory and technology of model-based methodologies in processing and interpretation of sensory input signals. Specific topics to be discussed are: (1) sensory fusion in robotics systems, (2) model-based monitoring, (3) model-based real-time diagnostics in automation systems, and (4) architectures, programming environments for real-time model-based processing systems.