

EDITOR:

H. J. Kuno

Hughes Aircraft Co., 3100 W. Lomita Blvd., Torrance, California 90509

Number 95, Fall 1979



PRESIDENT'S MESSAGE

By Don Parker

The last ADCOM meeting held in the Hyatt Regency in San Francisco was our official annual meeting. The annual meeting is always one of our more interesting meetings because elections are held and recipients for various awards are selected. I would like to express my personal congratulations to those elected to ADCOM and the winners of the Microwave Prize Career Award. Paul Greiling, Walt Gelnovatch, and Steven March were elected as new members of ADCOM. We welcome them and look forward to working with them. Lamar Allen, Jerry Aukland, Charlie Rucker, and Dick Sparks were re-elected for another three year term. Each of these members have contributed significantly to the MTT society and will continue to do so with vigor.

Seymour Cohn was chosen to receive the Microwave Career Award. He is known and respected widely by the microwave community for his contributions. He continues to push the state-of-the-art with practical microwave circuit designs and techniques. It was a pleasure to select him for this high honor.

Recipients of the Microwave Prize are Eric R. Carlson, Martin V. Schneider, and Thomas F. McMaster for their paper, entitled, "Subharmonically Pumped Millimeter Wave Mixers," published in the October 1978 issue of the IEEE TRANSACTIONS. Congratulations to each of you.

Steve Adam was elected President of ADCOM for 1980 and Fred Rosenbaum was elected Vice President. It has been a pleasure for me to work with both of these gentlemen on ADCOM over the years. They are very able and have been vital in contributing to our society. They are concerned about maintaining our prominence in the microwave community and will provide excellent leadership.

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ADCOM HIGHLIGHTS

By Stephen Adam

The fall MTT-S ADCOM meeting was held in San Francisco at the Regency Hyatt, San Francisco, California, on September 17, 1979. After the approval of the minutes of the previous meeting, President Parker reported on items of interest from the 3 August 1979 TAB (Technical Activities Board) meeting, which was attended by President Parker and Vice President Adam. TAB has:

- Appointed a Committee to work out details for a new award.
- Adopted a Revised Field of Interest Statement for the QEA Society. (Defining the overlapping interests with ED and MTT.)
- Passes a resolution that the Institute establish a Certificate Study Committee.
- Encouraged Societies to authorize IEEE Treasurer to wisely invest Society surpluses.
- Approved a proposed budget for IEEE that requires \$137,000 from Groups and Societies.
- Sustained the recent decision by the Executive Committee not to move publications from New York to New Jersey.
- Voted against establishment of a National Engineering Foundation as an umbrella organization.
- Approved a new Committee to be formed dealing with Large Scale Systems.

President Parker reported that Dr. John Clarke has requested that MTT-S become a cooperating sponsor of "Military Microwaves 1980" convention in London on October 22-24, 1980. After some discussion, it was voted and passed approval of becoming a Cooperating sponsor with the British IEE.

ADCOM unanimously approved the appointment of

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ADCOM Highlights (Continued)

Ronald J. Gutman, Rensselaer Polytechnic Institute, as MTT-S representative to the IEEE Energy Committee. Recommended to Harvey Nathanson, representatives from MTT-S to serve on an ADHOC Committee to coordinate future activities between ED and MTT on GaAs Integrated Circuits. Recommended that the National Lecturer publish his material in the Transactions in a timely manner. Outlined a possible approach to Charles Liechti with a copy to the Transactions Editor. Charles chose to update material and submit to the Editor by the end of October.

ADCOM approved a request for \$2000 advance from the Los Angeles Symposium Steering Committee. ADCOM also received notice from the Canadian section forming a joint AP/MTT section, same notice was received from Peter Kahn from Australia. On Membership Services, Barry Spielman reported on a Radar one-day symposium. Fred Rosenbaum reported on non-periodic publications. Two topics were discussed: (1) A book edited by Hatsuaki Fukui entitled: "Noise in Microwave Transistors," a reprint of articles on the subject introduced by the Editor. The book deals with: Noise Characterization and Measurement, Bipolar Transistors, Field-Effect Transistors and a thorough bibliography on the subject. (2) This book will be edited by Dr. Saleh and will have approximately 50 papers and about 280 pages on Microwave Mixers.

The main event of the fall ADCOM meeting is always the elections. Bob Hicks, Chairman of the Nominations Committee, presented the following slate:

VACANCIES:

6 — 3 year terms

1 — 2 year term (vacated by Don Parker)

J. L. Allen	Univ. So. Florida	Tampa, FL
J. Auckland	Rockwell Int'l	Anaheim, CA
M. Caulton	RCA Labs	Princeton, NJ
N. W. Cox	Ga. Tech. Exp. Sta.	Atlanta, GA
L. F. Eastman	Cornell	Ithaca, NY
V. G. Gelinovatch	USA-ECOM	Ft. Monmouth, NJ
P. T. Greiling	Hughes	Malibu, CA
G. I. Haddad	Univ. of Mich.	Ann Arbor, MI
F. Ivanek	Farinon	Santa Clara, CA
R. W. Laton	Lincoln Labs	Boston, MA
N. A. Masnari	Univ. of N.C.	Raleigh, NC
C. T. Rucker	Ga. Tech. Exp. Sta.	Atlanta, GA

WRITE-IN CANDIDATE:

S. L. March E-Systems Dallas, TX

NOMINATIONS FROM THE FLOOR:

J. Horton TRW Redondo Beach, CA

According to the Bylaws after 4 ballots the following people were elected:

FOR 3 YEAR TERM:

J. L. Allen
J. Auckland
V. G. Gelinovatch
P. T. Greiling
C. T. Rucker
R. A. Sparks

FOR 2 YEAR TERM:

S. L. March

For MTT-S President, Stephen Adam was unanimously elected.

Fred Rosenbaum was elected for Vice President of the Society.

Harlan Howe discussed symposiums next. The 1979 Orlando Symposium tentative financial data shows a \$50K surplus. The 1980 and 1981 Symposium Steering Committees each requested a \$2000 advance, which was granted by unanimous vote.

Larry Whicker, Chairman of the 1980 Symposium, conveyed a request from the Walter Reed Army Institute of Research. They would like MTT-S to support a one-day Tri-Service Electromagnetic Radiation Symposium on Electromagnetic Dosimetric Imagery to be held at the Shoreham Americana on Tuesday, May 27, 1980. They would like us to handle registration and would reimburse us for expenses. ADCOM approved the motion to become cooperating sponsors.

Larry also requested another advance of \$3000 to pay bills incurred by the Symposium Steering Committee. ADCOM unanimously granted the request.

There was no report on the '81 Symposium. During the discussions on the '82 Symposium, the renewal of the Exhibit Manager contract came up which ADCOM feels has to be done on the basis of an open-bid. Bob Hicks submitted an updated budget projecting a \$24K surplus, very conservatively for Dallas based on San Diego final report data. Next cut for budget will be submitted by January 15, 1980 in Washington D.C.

Harlan Howe submitted a formal proposal to hold the 1983 Symposium in Boston at the Sheraton-Boston Hotel. The proposal was unanimously accepted. George Oltman reported on the planned November 12-13, 1979 ARFTG Meeting/Workshop. Due to some credit difficulties with the Ramada Inn, Culver City, a \$1.5K advance was requested/approved. Stephen Adam called upon ADCOM to hold the 1984 Symposium in San Francisco, at the Regency Hyatt, San Francisco. ADCOM reviewed and toured the facilities and unanimously encouraged the Steering Committee to proceed with signing a first option agreement with the Regency Hyatt, San Francisco, and submit a formal proposal at the next fall meeting.

Reinhard Knerr, Transactions Editor reported on his activities. ADCOM approved a 1204 page budget for 1980. On the subject of format, he requested that short-papers as a category in the Transactions should be reinstated. ADCOM asked Reinhard to evaluate all the issues involved consulting with former editors. He made a plea to reviewers to do their reviews in a timely manner. That is a major bottleneck in the system! Special issues were discussed for 1980. George Oltman reported on the 26 years index, that headquarters cannot complete it this year. ADCOM decided to make it a 27 years index due to the delay.

On operation, Jerry Auckland reported that there is no need for a change in Bylaws to include past presidents to serve with the vice-president on the Long Range Planning Committee. The President has the prerogative to appoint anyone to a committee. On Councils, Committees and Groups, Bert Berson reported on IEEE Solid State Circuits Council (ISSOC) activities. Minutes of the Council's Sep-

tember 5, 1979 meeting held in San Francisco was discussed. Paul Gray, Editor of the Journal, reported on his activities and there was a discussion on increasing the number of issues per year to 8 or 12. Paul was charged with investigating the possible overlaps with other journals, Transactions, etc. No decision was made at this time. Paul is stepping down as Editor of the Journal after 3 years of service. He nominated Gary Baldwin, who was appointed to the Editorship after Paul steps down. Financially, SSCC was at a net \$196K as of January 1, 1979, expecting another \$60K surplus this year. The Council also acted on Bruno Weinschel's call for a National Engineering Foundation. The Council shared Bruno's concerns about lagging productivity in the U.S.; however, after some discussion of the proposal, the Council unanimously disapproved the proposal.

On Long Range Planning, Stephen Adam reported on the results of the meeting held by the AD-HOC Committee on future symposium sites. A report on this subject appeared in the summer 1979 issue of this newsletter on page 5 by Harlan Howe. It was also reported that Howard Ellowitz has searched for possible future symposium sites. He found Phoenix, St. Louis, Denver and Minneapolis to be good potential candidates. There is a good opportunity for sections in these areas to think about sponsoring a symposium in 1985 or later. The time is just about now to start thinking about it!

On Publications Evaluation Committee, Steve Adam was charged to find and appoint a chairman for that important activity.

Bert Berson reported on Publicity. He is preparing an MTT-S membership brochure for a membership drive.

ADCOM's Actions on Awards are covered in this issue under the President's message.

The next ADCOM meeting will be held in St. Louis, Missouri on November 8-9 at the Clayton Plaza. It will start with a dinner at 6:00 PM on the 8th of November. It will run through the 9th of November, 1979.



CHAPTER ACTIVITIES REPORT

By R. A. Sparks

Membership News

It has often been stated that in any organization membership is everyone's responsibility. The strength of an organization is its members and is measured by the effort these members are willing to put forth in order to build the organization and help it accomplish its purpose.

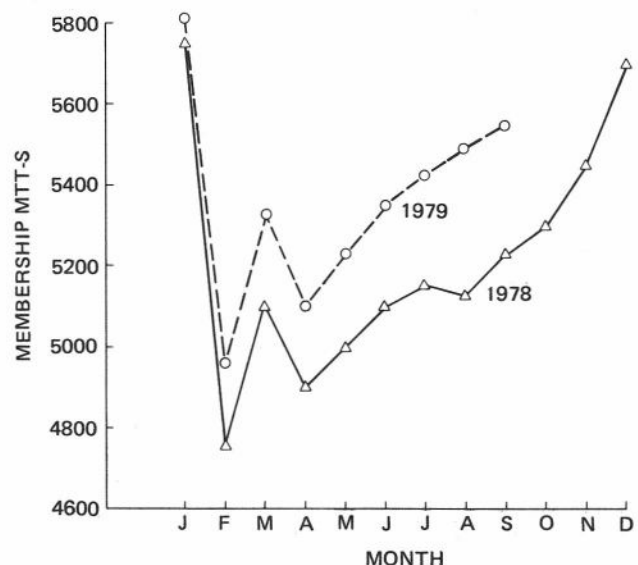
The Microwave Theory and Techniques Society in recent years experienced a relatively steep decline in membership (1977 end of year figures were down nearly 10% from 1975). A significant part of this drop has been attributed to the formation of the Quantum Electronics and Applications Society, many of whose members had formerly

belonged to MTT-S. Some of the other contributing factors were discussed in trade journal editorials over the past few years and subsequent letters to the editor by present and former members of MTT-S.

Whatever the real reasons were, it is newsworthy to note that MTT-S membership is recovering strongly now and at the end of September 1979 had increased by more than 6% over last year. A summary of 1978/1979 end of month membership statistics is plotted on the attached graph. The tabulated end of year statistics for the last fourteen years are also listed below. There appears to be a cyclical variation in membership growth and decline. Any attempt at interpretation would be rather speculative because of the many factors that influence Group/Society membership, not the least of which is spin-offs of new organizations such as QEA and SU in the past.

There appears to be a hard core of serious MTT-S members at any one time that believe in the Society and the purposes and functions it serves. The grass roots of the Society are its members and local chapters. The Administration Committee stands ready to provide whatever support is needed at the local level. Find out what is happening in your chapter and plan to attend the next meeting. Better yet, invite that new engineer in your company to join you. He may be interested in becoming an MTT-S member!

Year End	Total Members
1965	5533
1966	5836
1967	6140
1968	6384
1969	6933
1970	6799
1971	6295
1972	5697
1973	5711
1974	6162
1975	6261
1976	6155
1977	5608
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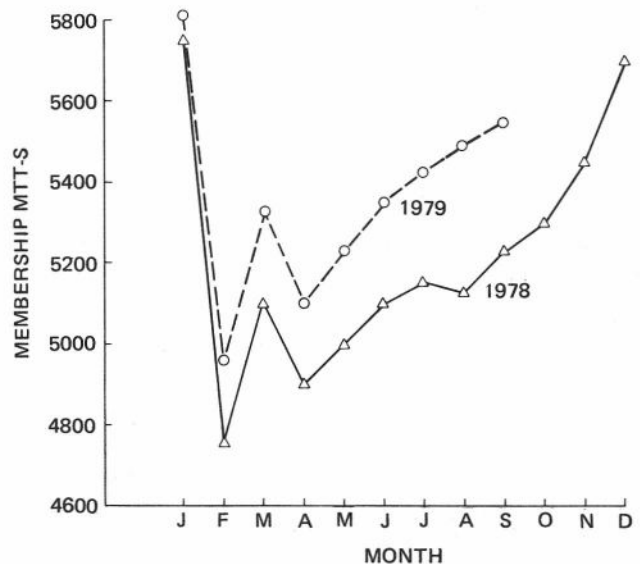
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REPORT OF THE DIRECTOR, DIVISION IV

NO. 9, OCTOBER, 1979

By Lawrence K. Anderson

IEEE Finances

Over the last six months, in my role as Chairman of the TAB Administration Committee, which is the umbrella for the TAB Meetings and Finance Committee, I have had the opportunity to become quite deeply involved in TAB finances. I would like to take this opportunity to share with you some of the recent developments in that area.

TAB finances are not simple. Within the IEEE there are three main budgeting entities—the G/S/C, taken as a whole, USAB, which has its own dues assessment, and all of the rest, known as the "General Fund." The G/S/C, of course, get their revenue from the group dues (usually a minor part of their total budget), from conference and publication activities, and from direct support provided from the General Fund. The General Fund, in turn, gets revenues from the general membership dues of the Institute, from the publication, education, and conference activities which it runs (as distinct from the G/S/C) and from reimbursement for some of the services provided by the staff organizations to the various entities of the Institute. From the point of view of the G/S/C, one of the most important IEEE entities is the TAB Department (Neil Pundit's operation). For budgeting purposes, the TAB Department is considered part of the General Fund. In 1979, it has received its funding from both the General Fund and, both directly and indirectly, from G/S/C. This is shown schematically in Figure 1. From this figure, you can see that even when all the support given from the General Fund to the G/S/C is reflected back to support the TAB Department, there is a shortfall which has been made up from an assessment on the G/S/C. It is this assessment to support the TAB Department, which amounts to about \$7K per G/S/C in 1979, that has been a source of so much concern to the G/S/C. This assessment has not always been there. Prior to 1975, the support from the General Fund to the G/S/C was adequate to cover the entire cost of the TAB Department, so that no assessment was necessary. But since then the expenses of the TAB Department has grown, with inflation, while the support from the General Fund to the G/S/C has remained essentially flat.

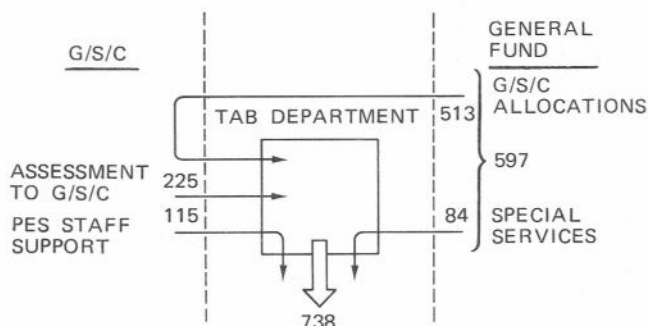


FIG. 1 1979 TAB DEPARTMENT BUDGET

Early in 1979, when the TAB Finance Committee was considering the 1980 budget, it looked as if the TAB Department budget even under "no growth" conditions

would grow to the point where, if the General Fund support remained static, the assessment on the G/S/C would increase to approximately \$14K per G/S/C. This situation was clearly untenable, so in the best IEEE tradition, a committee was formed consisting of former TAB Finance Committee Chairmen to recommend a solution that would be acceptable within the overall Institute framework. This committee examined the services provided by the TAB Department and found that they could be grouped into three categories:

1. Administrative support to the general technical activities of the Institute.
2. Administrative support to the individual G/S/C.
3. Conferences services.

The committee recommended that services in category (1) be funded out of the General Fund, that those in category (2) be funded by the G/S/C, and that the conferences services (3) be made fully self-supporting. Direct funding of the category (1) services would take the place of the previous subsidy to the G/S/C.

In the case of the latter category, conference services, the intent was that the revenue needed to run the TAB Conference Services was to be derived out of conference income. There are many ways in which this could have been done. The procedure being implemented is based on the so-called "book-broker" concept, which relies on the fact that most conferences produce some form of conference record which usually brings in significant revenue through post-conference sales. To capitalize efficiently on this source of revenue while still providing a good, risk-free return to the G/S/C, the basic proposal calls for TAB Conference Services to buy agreed on numbers of conference records in bulk from a given conference, at the close of the conference, at some base percentage above cost (40% was used in planning). There would be marketed with a mark-up to individual customers as orders were received. Revenues generated in this way along with those generated by other entrepreneurial ventures—like marketing subscriptions to the Master Meetings Schedule—should eventually put the Conference Services Operation on a self-sufficient footing. Of course, during the start-up transient some subsidy will still be needed—estimated at \$30K for 1980. This will be raised by tapping directly into the return from the Open Order Plan—the procedure whereby libraries agree in advance to buy all IEEE conference publications.

With this plan in place, the 1980 TAB Department budget comes out as shown in Table I. Note that it still calls for an assessment of \$137K collectively against the G/S/C (approximately 4K per G/S/C) to pay for services they get—better than the \$7K levy in 1979, but still a burden for some of the smaller societies. To further ease this burden, the TAB Finance Committee developed a "taxation" algorithm in which the \$137K assessment was assessed partly on a per-division basis and partly on a per-G/S/C basis. This has the effect of reducing the cost to the smaller G/S/C.

The TAB Department budget in this form was approved by the Board of Directors at its August meeting, but with an interesting proviso that could reduce the "tax" burden on the G/S/C essentially to zero. There is general sympathy on the BoD for the concept that the administrative services provided by the TAB Department at Headquarters should be provided to the G/S/C without direct charge, in the same spirit that these services are provided by Headquarter Staff to the Regional Activities of the Institute. On the other hand, the General Fund, from which the money would have to come, is projected to incur a \$1.26M deficit in 1980, whereas the G/S/C, in aggregate, are expected to come close to breaking even. There is thus a natural reluctance on the part of the BoD to add to this deficit by subsidizing the seemingly affluent G/S/C. However, if past experience is any guide, the deficit in the General Fund will turn out to be substantially less than currently projected. The final arrangement worked out then calls for the General Fund to assume the balance of the projected TAB Department expenses (the \$137K in Table I) provided that in so doing the actual year-end deficit in the General Fund does not exceed \$1M. I think that there is a very good chance that the 1980 deficit in the General Fund will turn out to be well under \$1M—for example, for 1979 the initial budget forecast was for a \$900K deficit, but now looks as if the actual deficit will be much less (approximately \$100K).

To the average IEEE G/S/C member these financial considerations may seem quite remote. But they are tangible evidence that the TAB Department Staff and volunteers and the BoD are working hard to use the Institute's financial resources wisely and to recognize the importance of technical activities within the Institute.

Board of Directors Meeting

At its August meeting, the BoD acted on a number of items of interest to TAB.

1. It voted to establish the Donald G. Fink Award, named after IEEE's first General Manager "for the outstanding survey, review or tutorial paper" in any IEEE Transaction, Journal, Magazine or in the Proceedings, in recognition of the importance of this type of paper to the general membership.
2. The Board voted to approve IEEE membership in a new proposed "umbrella" society, the American Association of Engineering Societies. It is expected that this association will eventually include all the major U.S. engineering societies. If so, it will provide a forum through which the entire engineering profession can speak out on such key interdisciplinary issues as energy and transportation.
3. The Board upheld an earlier decision of the Executive Committee *not* to proceed with the planned move of the Publication Production Department from New York City to Piscataway, a move that threatened severe, short-term disruptions in Transaction publication. This decision has a financial penalty, however, since higher cost additional space must now be found in New York City.
4. The Board voted against any dues increase for 1980, in spite of the large projected deficit (greater than \$1M). Instead the Board voted to set up a small Ad

Hoc Committee to study the dues and dues structure and recommend a long-term strategy. I feel that the IEEE should be operated with a "pay as you go" policy, with income and expenses in better balance, so I voted against deferring this problem. However, I did agree to serve on the Ad Hoc Committee.

The IEEE continues to enjoy a healthy growth, with a fastest growing segment continuing to be the overseas community. The Institute will have more than 200K members by year's end. Membership in G/S/C is growing at a rate even faster than the overall membership, currently approximately 10.7 percent for all G/S/C and approximately 9.4 percent for Division IV alone. As you might expect, the fastest growing segment is the Computer Society (17.5 percent).

Activities Within Division IV

All of the G/S/C within Division IV have built up extensive reserves, primarily as a result of booming publication and conference revenue, and one of the major preoccupations of all the ADCOMs I have visited is how to use these reserves in innovative ways that will be of direct benefit to the membership. Programs being either implemented or studied seriously by the various ADCOMs include:

1. Sponsorship of a Congressional Fellow.
2. Establishment of new journals—e.g., a fast turnaround letters journal, Electron Device Letters, by EDS, available to members at no added cost.
3. National Merit Scholarships for children of G/S/C members.
4. Increased sponsorship of "National Lecturers," to reach the chapters with recognized experts and timely topics.
5. Grants for student travel and equipment grants to universities to encourage student interest and activity in technical fields relevant to the G/S/C.
6. Upgrading of newsletters to magazines, with applications oriented articles.

I am sure your ADCOM would be glad to receive other suggestions. Remember, it is your money!

TABLE I
1980 TAB BUDGET

Income (K\$)			Expenses (K\$)	
From G/S/C	From General Fund	From "Book Broker"	Amount	Spent On
	519		519	General TAB Administration
	93		93	Special Projects
30*	38	96	164	Conference Activities
137			137	Administrative Support of G/S/C
167	650	96	913	

*Funded for 1980 only from "OOP Net."

LETTERS TO THE EDITOR

ON INFLATION AND THE ENGINEER

Dear Editor:

Al Clavin, Guest Editor for the Summer MTT Newsletter, made some interesting observations about "Inflation and the Engineer" (MTT-Summer 1979, p.8), but concluded with some very inflammatory statements about the retirement system of Government workers that we, as microwave engineers under the Civil Service System, cannot let stand unchallenged.

We quote:

"All this is happening at the same time we hear about government employees who do not pay Social Security taxes and retire early (after 20 years service). They are then double and triple dipping into pension funds plus benefiting from Social Security".

Al should know better, First of all, since when does anyone who does not contribute towards the Social Security Retirement System receive Social Security benefits?

Government workers pay 7% of their income towards the Civil Service Retirement System (6.5% before 1970). Social Security can be collected in addition only if the worker was employed outside the Government for a sufficient length of time and had contributed toward the Social Security Retirement System.

The above form of "double dipping" is very similar to the usual retirement methods utilized by Hughes and all other companies which have their own retirement plans. The difference is that workers at these companies are allowed to contribute to their company's retirement plan at the same time they are contributing to Social Security.

Triple dipping is a scheme which can only be used by certain (20 years or more) military retirees and members of Congress. As such, it affects very few of us.

We are enclosing a calculation of contributions and retirement benefits for both Hughes and the Government for a worker with the following specifications:

Age:	62
Years in the system:	20
Highest salary:	30K
Retirement year:	1980

For this calculation, we have assumed a 5% increase in salary each year. Also we take the case of the employee having a single dependant, also age 62.

The conclusions are quite remarkable. The Government employee, after paying more into the retirement system than the Hughes employee, receives \$9,229 annually as compared to \$14,155 for Hughes! (See Table.)

Let's talk some more about the Civil Service microwave engineer versus his equivalent at Hughes. Al hired Dr. X from a Government lab less than two years ago. Dr. X was earning \$24.8K from the Government. Al offered him \$30K. If Dr. X hadn't gone to Hughes, but instead, basked in the generosity of Uncle Sam, he would now be earning (counting all possible promotions, cost of living increases, etc.) \$26.9K. At Hughes, his salary is presently \$34K. Unfortunately, our Government policy makers presently

GOVERNMENT EMPLOYEE VS.
HUGHES RETIREMENT BENEFITS, 20 YEARS, AGE 62

EMPLOYEE CONTRIBUTIONS

Year	Salary	Government	Hughes	Social Security
1	\$11,306.68	\$ 734.93	\$ 380.27	\$ 84.00
2	11,872.01	771.68	402.88	94.50
3	12,465.61	810.26	426.62	120.00
4	13,088.90	850.78	451.56	144.00
5	13,743.34	893.32	477.73	150.00
6	14,430.51	937.98	505.22	174.00
7	15,152.03	984.88	534.08	277.20
8	15,909.63	1,034.13	564.39	290.40
9	16,705.12	1,085.83	596.20	343.20
10	17,540.37	1,140.12	629.61	374.40
11	18,417.39	1,289.22	664.70	374.40
12	19,338.26	1,353.68	701.53	405.60
13	20,305.17	1,421.36	740.21	468.00
14	21,320.43	1,492.43	780.82	631.80
15	22,386.45	1,567.05	823.46	772.20
16	23,505.78	1,645.40	868.23	824.85
17	24,681.06	1,727.67	915.24	895.05
18	25,915.12	1,814.06	964.60	965.25
19	27,210.87	1,904.76	1,016.43	1,070.85
20	28,571.42	2,000.00	1,070.86	1,403.77
21	29,999.99			

GOVERNMENT EMPLOYEE CONTRIBUTION
\$25,459.56

HUGHES EMPLOYEE PLUS SOCIAL SECURITY
\$13,514.65 + \$9,862.97 = \$23,377.62

GOVERNMENT EMPLOYEE RETIREMENT
\$9,229.09

HUGHES EMPLOYEE RETIREMENT
(INC. 1 DEPENDENT, AGE 62)
\$6,757.33 + \$7,398.00 = \$14,155.33

seem to think that engineers should not climb higher than the GS-12 level unless they do managing instead of engineering.

Whilst pondering other benefits, let's also note that Hughes pays full medical insurance, \$50K life insurance, has an employee investment plan, and also a contributory dental plan. There are no free Government benefits; we have both a medical and a group insurance plan, but we contribute heavily to both of them.

Why do we stay? First of all, let us assure you that we are not all incompetent. Many of us have been offered positions in industry which pay substantially more than our current salaries. In our own cases, the San Diego location and years of credit toward the retirement program are both strong factors for staying. Lately, however, there has been considerable effort on the part of the Administration to merge Social Security with the Civil Service Retirement System. Many of us feel that the retirement benefits we have earned are being threatened. A great many excellent older employees have retired early (with partial annuities) to safeguard against such an event.

Al Clavin wonders, at age 55, whether he should retire or not. At Hughes, anyone can retire at age 55, with their company's full retirement benefits, after working there for 20 years. In the Government, we must have 30 years service before retiring with *any* benefits at age 55. The exception is during a Reduction-in-Force, but the latter isn't likely to happen with so many of us leaving.

We think Al Clavin owes the engineers and scientists in the Government an apology.

David Rubin

John Carson

Microwave Antennas and Components Group
Code 8211
Naval Ocean Systems Center
San Diego, California

Dear Editor:

I'd like to comment on your (Al Clavin's) guest editorial in the Summer 79 issue of the MTT Newsletter.

Don't feel too bad about turning 55. As a wise, old philosopher once said, "It's tough to get old, but a helluva lot better than the alternative."

I remember you as a good engineer who marshalled all the facts before drawing conclusions. Thus, I was disturbed and shocked at your erroneous statements about government employees.

The standard minimum conditions for retirement for government employees are age 55 *if* one has 30 years of service. One must meet both the age and length of service criteria. It is true government employees pay no social security taxes. However they contribute 7% of their gross salary to their retirement annuity, and they pay full Federal and State income tax on their retirement annuity.

Also, they get no bonuses, obviously there is no profit sharing, and there are no stock options. They pay 40% of their health premiums. Federal employees get no fringe benefits free of charge. They are the only workers subjected to mandatory wage controls, and impartial studies reveal that 88% of all federal white collar jobs are not now comparable to the same jobs in the private sector when it comes to wages.

Many government employees worked in industry prior to working for the government, and are eligible for social security benefits according to law. Is that your definition of double dipping? And I have no idea how you've defined triple dipping.

I could go on with more facts, but I believe I've made my point. You've taken an unwarranted, casual "cheap shot" that calls for a retraction.

Best regards,

I. REINGOLD, Director
Beam, Plasma & Display Division
Department of the Army
US Army Electronics Technology
and Devices Laboratory,
Fort Monmouth, NJ

REPLY TO LETTERS "ON INFLATION AND THE ENGINEER"

I seem to have raised the ire of some of our civil servants. I am sorry that my "cheap shot" was not clearly

understood. "Government employees", to me, means more than Federal civil service. It also means military, political and municipal employees. A young man can enter the military at age 18 and retire 20 years later (age 38) with a pension equal to one-half his highest salary. Political jobs are even better. After one (or two) terms in an elective (or appointive) office the person may retire. Recently E. Younger (a candidate for Governor of California) was attacked for receiving many government retirement checks. This is becoming so much of a problem that a bill is now going through Congress to change the laws. I know that a number of readers will recognize the problem of double dipping with people they are personally acquainted with.

Now back to Federal civil servants. They do not pay Social Security taxes. We know that Social Security taxes are oppressive. How many of you would love to have the money you put into Social Security in your own account at even a lowly 5% interest? It is also well known that those who put the most into Social Security (percentage-wise) receive less than those who put in the minimum (ten quarters or only two and one-half years).

I have received many letters and phone calls on my editorial comment, and do want to apologize to my friends (hopefully not former friends) in civil service. The term "government employee" should not have been used, but a term such as "political-military." However, these letters published elsewhere in the Newsletter should help to clear the air concerning government pensions.

Regardless of what pension plan you have, we are all in trouble with inflation at its current rate of 13% to 14%. I had formulated a problem of how "far down" one has to live to cope with inflation at retirement and discussed this with Dr. R. S. Elliott. He analyzed my problem and the results are in the curves shown below. I believe we all will find them very disheartening.

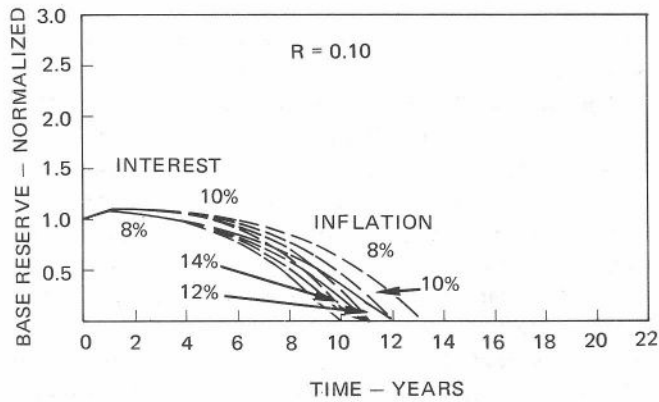
Let us assume we have a financial base upon which we can retire. It may include your pension, but also all other assets such as savings, investments, home, etc. This base generates an income at an interest rate (today about 8-10%) from which you can live in retirement. Because of inflation you choose to live at a lesser rate R ($R = .025, .05, .075, .1$, shown in the curves) and reinvest the difference so as to stretch out the years of income. I also now postulate that at this lower rate R of spendable income I *will* maintain my living standard against inflation. How many years before all assets are gone? The curves give the answer. Here is an example.

Let your normalized base be \$500K. Let your interest rate be 8%, inflation be 14%, and $R = .05$ (\$25K) be your spendable yearly income. R will be maintained against the 14% inflation rate. The curves show you are broke in less than 16 years. If $R = .1$ (\$50K) and you use the same percentage as above, you are broke in 9 years.

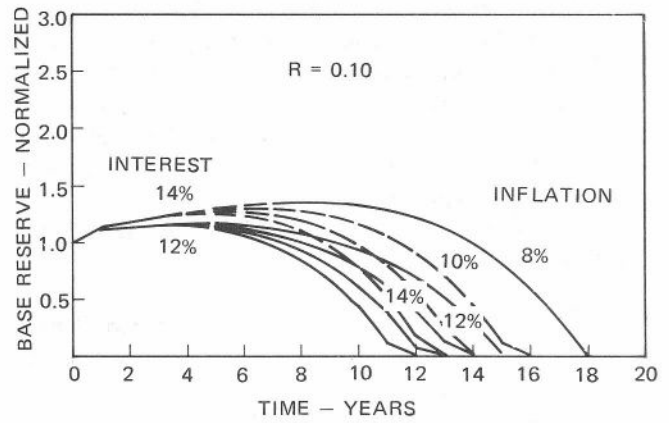
I realize that very few, if any, working engineers have a \$.5M base, so obviously things are much worse. Also note that no income tax is included.

Sleep tight tonight.

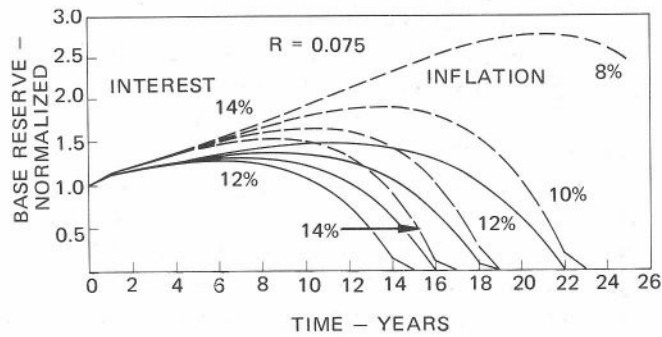
A. Clavin



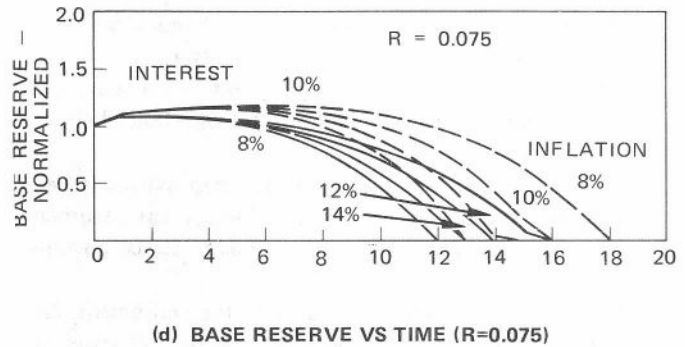
(a) BASE RESERVE VS TIME (R=0.10)



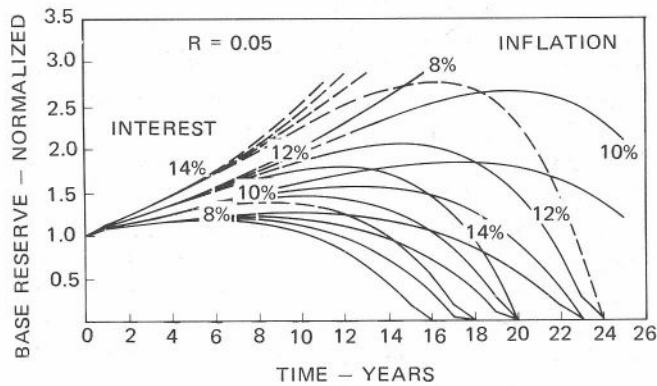
(b) BASE RESERVE VS TIME (R=0.10)



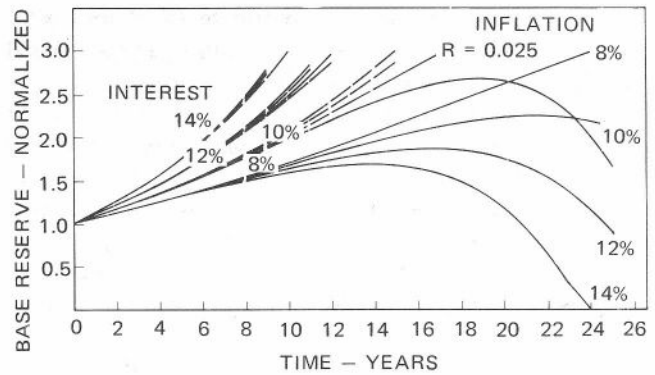
(c) BASE RESERVE VS TIME (R=0.075)



(d) BASE RESERVE VS TIME (R=0.075)



(e) BASE RESERVE VS TIME (R=0.05)



(f) BASE RESERVE VS TIME (R=0.025)

FOURTH INTERNATIONAL CONFERENCE
ON INFRARED AND
NEAR—MILLIMETER WAVES
Americana Hotel of Bal Harbour
Miami Beach, Florida, USA,
December 10-15, 1979

REPLY TO JORGEN P. VINDING "ON THE SHORTAGE OF ENGINEERS"

By A. Clavin

Mr. Vinding wants to summarize my total views "On the Shortage of Engineers" from a single sentence taken out of context. He then goes on to quote from my editorial to justify that the problem is purely economical. I believe the problem is caused by economics and the competition from other professions. But I also feel there is a second reason, namely that technology is unpopular with young people, mostly due to the Vietnam War and industrial pollution (which they relate to technology). There is little disagreement between myself and Mr. Vinding. I still believe long term solutions are required since I know of no microwave engineers at my company doing purely routine (non-engineering) tasks and doubt that this is much different at other companies except, apparently, the company employing Mr. Vinding.

PRESIDENT'S MESSAGE (Continued)

I also want to publicly thank John Horton and Ernie Komarek for their past service on ADCOM. John is a Past President of ADCOM and has served faithfully for several years. He has always been very conscientious and diligent whatever his assignment. Most recently he has been chairman of the Technical Activities Committees and has been successful in keeping them all organized and functioning. Ernie plans to retire early from Government Service and start a new career. He has worked hard for MTT-S and will be missed.

To conclude this message, let me mention briefly some of our current issues. One is the management and locations of our future symposia. With increasing attendance and a larger number of exhibitors each year, only larger hotels in some of our larger cities seem to be able to accommodate us. On the other hand, our society is strengthened and other benefits come by having local chapters sponsor and plan the annual symposium. In the future we must find a way to strike a good balance between the benefits from local sponsorship and increased size.

Our TRANSACTIONS is perhaps our most valuable service. However, it is a constant struggle to satisfy the needs of all. Many feel that there should be only one category of papers in the Transactions. Often the Editor and the reviewers receive a paper that contains an item of importance and is timely, but it is not complete in the sense of a "full" paper. How should this be treated? Should it be rejected or should it be given the full status of a paper. Many feel that another category of paper should be provided in the Transactions. I would invite the membership of MTT to ponder these two issues. Write me and let us know your feelings and recommendations. Since our last ADCOM, I have had some feedback on these issues which I greatly appreciate.



GUEST EDITORIAL

By A. Clavin

On Petition Candidates for the IEEE Presidency

In the late 60's and early 70's, as MTT-S newsletter editor, I was dismayed at the loss of jobs and general dissipation of good engineering talent during that now infamous depression in aerospace business. During that period, I wrote a number of editorials on the subject of professionalism that generated response from Newsletter readers. In fact, other newsletter editors from different groups and societies asked to reprint these editorials, and they helped to raise the consciousness of the IEEE membership. Others joined in and the result seemed to be that the members wanted a professional as well as technical society.

MTT was at the forefront. It was at the MTT Symposium at Newport Beach during a special session on professional activities, Vic Galindo stood up to be counted. He later made an important petition to change the By-Laws of IEEE to start the IEEE into professional activities. The petition was defeated but the message was heard and the IEEE moved into professional activities.

But IEEE moved slowly. In our frustration as members wanting action, there was some pleasure in seeing E. Feerst come on the scene. As a petition candidate for president he rode off to challenge the establishment of the IEEE on his white steed—and came back with bent spear.

John Guarrera pushed for pension legislation in Congress.

Later Bob Rivers, past MTT President, rose to the challenge of IEEE presidency by petition. However, he and Feerst split the vote and the establishment won again.

Now we have Leo Young. He has mounted that white charger to make the challenge once again. (As of this writing I do not know the results of the election.) Finally a winner — MTT born and bred. The friend or acquaintance of us all from MTT. I am sure he will begin the process of making IEEE responsive to the membership.

It was a long hard fight and we all owe a great deal of thanks to these petitioners and petition presidential candidates. Many others not mentioned here have helped the fight. They have fought for all of us whether we want IEEE strictly technical or strictly professional—or something between. We have finally been heard. I, for one, want to thank them all. From Galindo, to Feerst, to Guarrera, to Rivers, to Young, for their courage, and personal time spent in our (memberships) behalf.

"Thank you all." You deserve a special award for service to the IEEE!

**1980 IEEE/MTT-S
INTERNATIONAL MICROWAVE SYMPOSIUM
WASHINGTON, DC
MAY 28—MAY 30, 1980**



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The 1980 IEEE MTT-S International Microwave Symposium theme is "Technology Growth for the 80's." This theme highlights the expected growth of microwaves in the next decade.

The following subject areas will be covered in the Technical Program:

- Microwave and Millimeter Wave
 - Solid State Devices
 - Integrated Circuits
 - Components and Networks
- Submillimeter Wave Techniques and Devices
- Gigabit Logic Devices and Applications
- High Power Devices and Techniques
- Microwave Ferrite Devices
- Low Noise Techniques
- Microwave Acoustics
- Microwave Communication Systems
- Radiometry and Remote Sensing Systems and Applications
- Microwave Field and Network Theory
- Computer Aided Design and Measurement Techniques
- Microwave Bioeffects
- Integrated Optics, Fiber Optics and Optical Techniques
- Technology Breakthroughs

The date and location of this conference are presented below.

LOCATION : WASHINGTON, D.C.
SITE : SHOREHAM — AMERICANA HOTEL
DATE : MAY 28 through 30, 1980

The Symposium will be accompanied by exhibits, banquet and social activities.



**TECHNOLOGY
GROWTH FOR
THE 80'S**



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