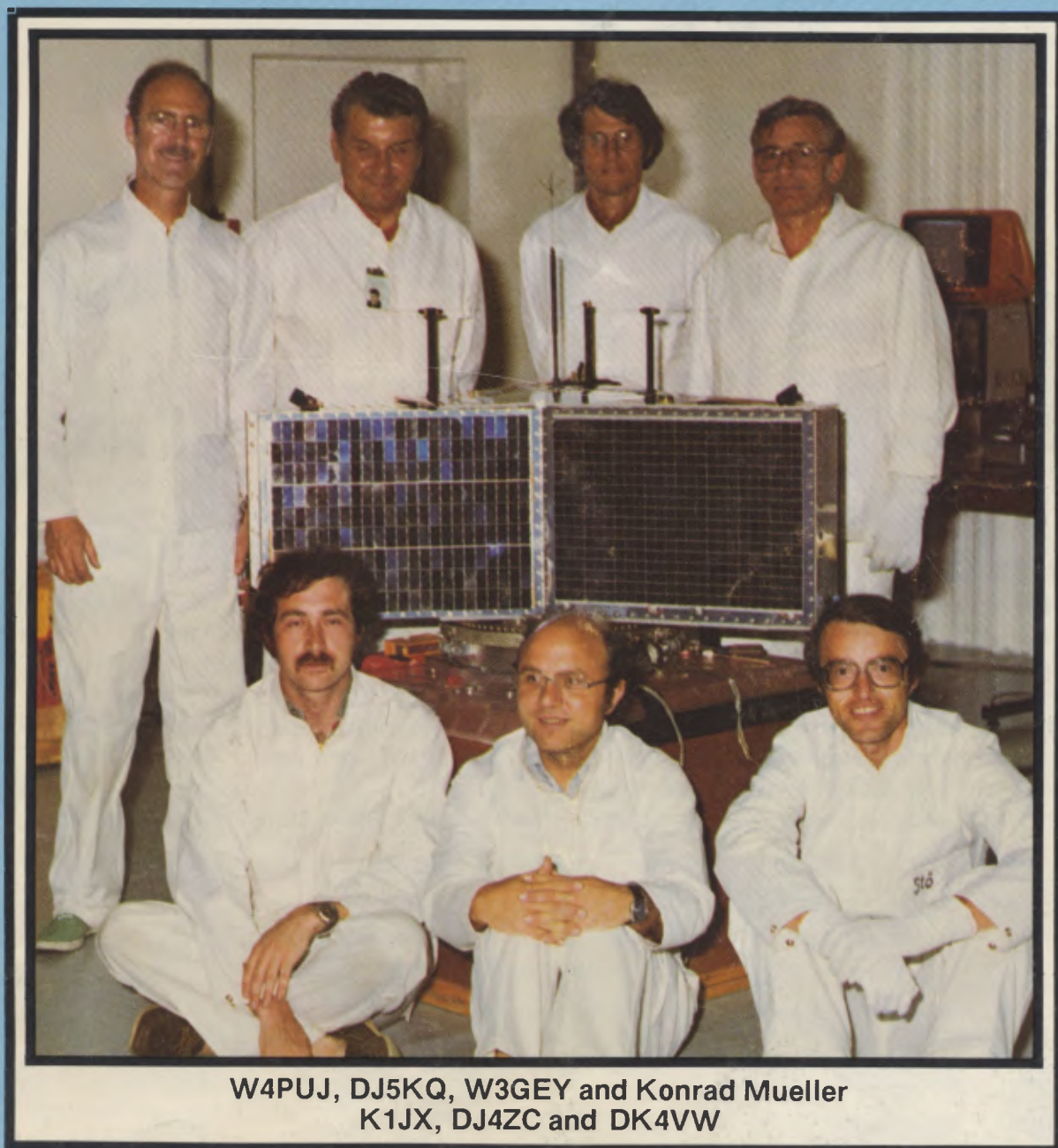


Orbit

June/July 1980

\$2.00

Published by AMSAT — The Radio Amateur Satellite Corporation



FORMULA FOR 2 METER FM ENJOYMENT

4
x RELIABILITY
=



CLEGG FM-88

\$329.95

143-149 MHz

.25 uv sensitivity

mobile mount & microphone included

25 Watts (variable)

Provisions for non-standard splits
(CAP, MARS, etc.)

Optional AC power supply available

THAT'S CORRECT!!!

We are convinced that the FM-88 is four times more reliable than the other 2 meter rigs being offered. To prove it to you, we are supplying the FM-88 with *four times* more warranty than supplied with other models—One full year instead of the normally expected 90 days.

While there are radios on the market that offer lots of "gadgets"—our past experience

Phone 1 (800) 233-0250 today to order your FM-88 or to request a detailed brochure describing this fantastic transceiver & related accessories.

The FM-88 is also available with an 800 channel, programmable scanner—order model FM-885—\$429.95

has been that simplicity of operation & elimination of unnecessary "Bells & Whistles" actually removes the causes of many failures being experienced with such transceivers.

If you are shopping for a new 2 meter transceiver, don't you owe it to yourself to go with a radio that has proven itself with thousands of hours of reliable, "On the Air" operation?



Clegg

Communications Corp.
1911 Old Homestead Lane
Greenfield Industrial Park East
Lancaster, PA 17601
(717) 299-7221



June/July, 1980
Volume 1, Number 2

Editor:
Joe Kasser, G3ZCZ
P.O. Box 27
Washington, DC 20044

Advertising Director:
Don Waters, WB1CUJ
221 Long Swamp Road
Wolcott, CT 06716

Manager of Production:
Bob Myers, W1XT

Publisher:
Radio Amateur Satellite Corporation
P.O. Box 27
Washington, DC 20044
301-459-9230

AMSAT OFFICERS:

President:
Thomas A. Clark, W3IWI
Executive Vice-President:
Vern Riportella, WA2LQQ

Vice-President, Engineering:
Jan King, W3GEY

Vice-President, Operations:
Richard Zwirko, KIHTV

Treasurer:
Roy Rosner, K4YV

Office Manager:
Martha Saragovitz

Our Cover: See page 32.

Second Class postage paid at Waterbury, CT
by *ORBIT*, 221 Long Swamp Road, Wolcott,
Connecticut 06716.

ORBIT (USPS 041-850) is published six times
per year for \$10 (inseparable from member-
ship dues of \$16) by AMSAT, 221 Long
Swamp Rd. Wolcott, CT 06716.

Copyright © 1980 by AMSAT. Contents
may be reproduced without specific permis-
sion provided proper credit is given. Opinion
expressed is not necessarily that of AMSAT.

Contents:

- 2 Editorial** By Joe Kasser, G3ZCZ
G3ZCZ returns from Japan to find some new challenges at home.
- 5 Ariane Launch Vehicle Malfunctions, Phase IIIA Spacecraft Lost!** By Tom Clark, W3IWI & Joe Kasser, G3ZCZ
While a malfunction of the ESA Ariane rocket has caused some delay in AMSAT's Phase III Program, it doesn't spell the end of Amateur Radio Satellites. Here's what happened at Kourou along with some photographs of the actual operation.
- 10 The AMSAT Phase III Satellite** By Joe Kasser, G3ZCZ
While the recent launch of our Phase III satellite was unsuccessful we all need to be aware of the operational details for when the next launch becomes available. Part I of this informative article appeared in the March issue of *ORBIT* Magazine.
- 16 Satellite DX and Propagation** By Pat Gowen, G3IOR
Satellites can provide a unique opportunity to study propagation. Pat Gowen describes some of his observations and suggests an on-going list. The Russian Satellite operation is also described.
- 20 Mode-A Converter for 432** By John Pronko, W6XN
This construction project allows you to receive Mode-A on your 432-MHz receiver. This converter along with two compact ICOM transceivers provides a complete satellite communications system.
- 23 Letters**
Comments from WB6GFJ, W4GKC, W6SP, W7MKW, W2JMR and an interesting description of simple elevation control with vertically mounted rotors given by W4BE.
- 24 AMSAT News**
Board Meeting Minutes, a call for nominations, Project OSCAR operations, and the Annual Meeting announcement for members interested in the organizational activities of AMSAT. Care to participate?
- 26 Life Members**
Several hundred more Life Members join AMSAT's ranks!
- 28 Orbit Predictions**
June, July and August computer printouts are given.
- 32 Payload Retrieval**

Editorial

By Joe Kasser,* G3ZCZ/W3

That G3ZCZ/JA3 signature on the editorial of the last issue was no misprint. Apart from the time spent on AMSAT activities during the week your editor has to spend at least 40 hours a week of his spare time working for his employer who decided to send him to Japan for six weeks. After a brief flurry of activity spent in putting together the first issue of the magazine, your editor departed to Japan missing the integration of the Phase III satellite, the testing of the Telemetry tracking and control software, and all the fun and games involved in getting the spacecraft ready at the lab.

Arriving in Japan was like landing on another planet. The language, culture and way of doing things was different in many respects from the Western equivalent. When I first heard Japanese spoken, on the plane and at the airport it sounded like random noise, not even registering as a language.

During my stay in Japan, I did get to Tokyo twice and met several of the JAMSAT crowd including Harry Yoneida, JA1ANG and Miki Nakayama, JR1SWB. I had a number of discussions with them, mostly about AMSAT, JAMSAT and microcomputers. Miki also served as our parttime guide and took us around Tokyo. We visited the offices of *CQ Ham Radio* magazine, the offices of the Japan Amateur Radio League (JARL), and the Akihabara district of Tokyo in which lie the surplus and Amateur Radio stores. Ham equipment is roughly 60% of its state-side cost. For example, I saw ASCII encoded keyboards in cases for only \$10.00. If my suitcases were not already bulging I'd have bought some of those as well. Funnily enough S-100 hardware is cheaper in the USA. Miki, Harry and all the other Japanese that I met, really went out of their way to aid and assist the foreigners in their country, and I'd like to use this page to once again convey my thanks. During the trip, I hope that I obtained some understanding of their problems, one of which is FM-QRM in the satellite downlink passbands. Many was the FM QSO that I heard on 145.90 MHz, and other frequencies between 145.85 and 146.00 MHz. Considering the fact that there are no repeaters in Japan, the band is filled with used simplex channels. I saw a copy of the Japanese domestic call book—it is thicker than both issues of the *CALLBOOK* magazine combined, and a lot of those amateurs are on two meters.

By the time that I left Japan, it was no longer a strange planet. It had turned into a charming and friendly country that in some ways I was sorry to leave. Even the language was beginning to make sense, no longer sounding like random noise. One day I hope to return.

Life Member Mailing

The cost of mailing the first issue of *ORBIT* to life members was nearly \$1000. The cost of mailing the magazine to the rest of the U.S. membership was about \$50. It was this cost which generated the confusion about first class mailing of the magazine. It is assumed that most life members want their donations to support AMSAT rather than the U.S. Post Office and except for special situations, would not mind receiving the magazine by second class mail, knowing that the funds thus saved would be put to good use within AMSAT. As such it is proposed to mail all issues of the magazine in envelopes at the reduced rate unless life members specifically request that theirs be mailed first class.

It Never Rains But It Pours . . .

As you may have heard and can read in the magazine, our President Perry Klein has resigned from the organization. This necessitated moving the offices just at the time of the launch. There may have been inadvertent anomalies in the actions of the organization and headquarters staff. The transition was eased by the efforts of our Office Manager Martha Saragovitz and those Washington area volunteers who helped move miscellaneous office supplies, equipment and 10 years of accumulated spacecraft telemetry data and related correspondence.

Nominations

Once again it is time for nominating candidates for election to the Board of Directors. It only takes five members to nominate somebody (or a member society). If you feel strongly about one aspect of the organization why not run for office or stand for election.

Payload Retrieval

ORBIT is a little different from the *AMSAT Newsletter*, in case you haven't noticed. We'd like some feedback from you as to the type of article you'd like to see in the magazine. As such we've instigated a new feature in which your vote will tell us which articles you liked best. Please also let us know what kind of articles you'd like.

The AMSAT Board of Directors have decided upon the following policy on providing honorariums to authors published in the magazine. The readers will be called upon to vote for the best article in each issue in both of two categories. One category is "technical", the other "general interest". You the reader choose by returning the Payload Retrieval coupon in each issue. If you feel that the best article meets the requirements of both categories, so be it. The author of the article voted "best of the issue" in each category in each issue will be awarded an honorarium of \$50.00. At the end of the year, you, the reader will be asked to vote for the "best of the year" articles from amongst the issue best and a suitable prize will be awarded.

*Editor, *ORBIT* Magazine.



Harry Yoneida, JA1ANG, Fay Kasser and Miki Yasu Nakayama, JR1SWB, outside the Meji Shrine in Tokyo.