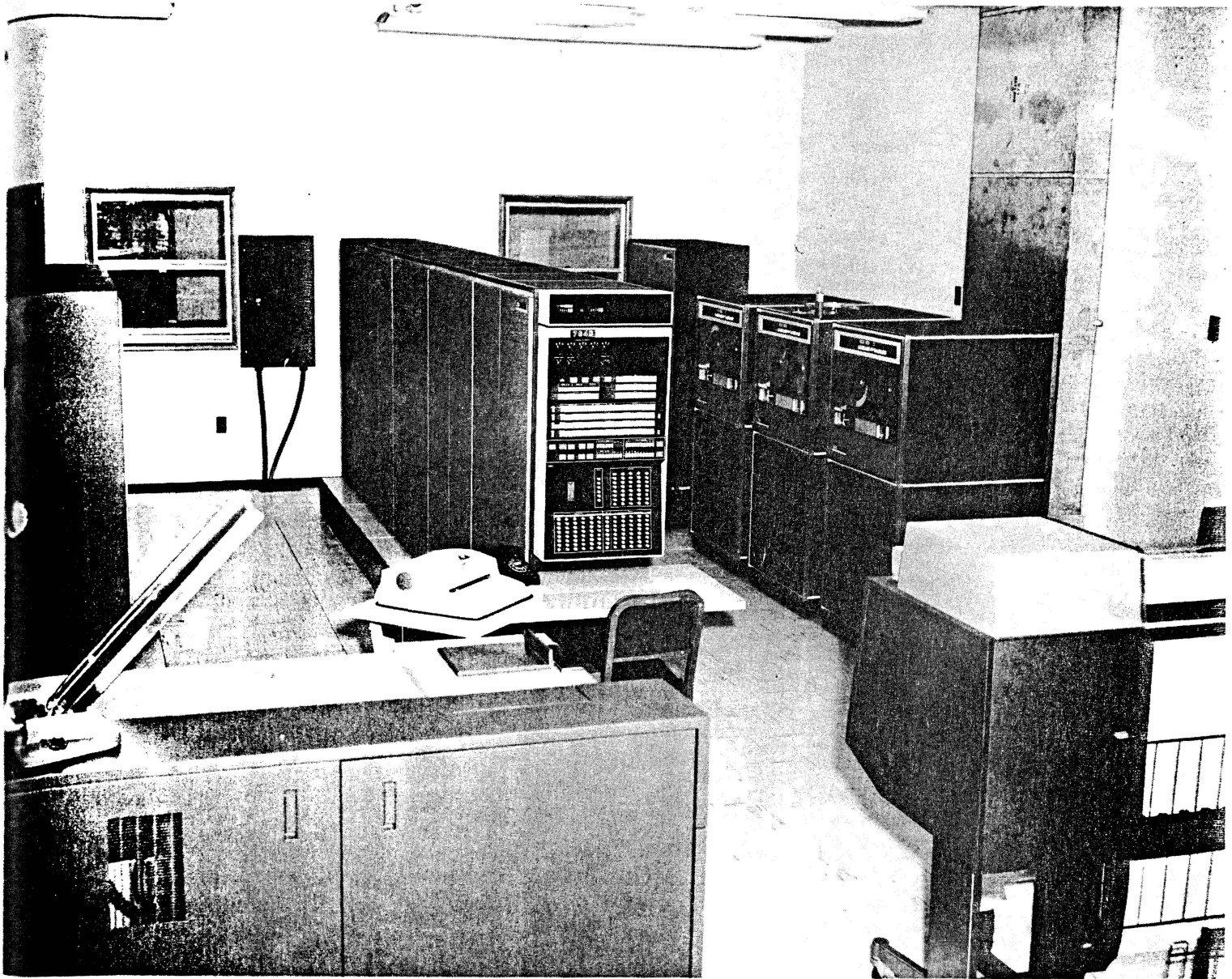


# *The* O B S E R V E R

Vol. 3, No. 11

September 30, 1964



1740 COMPUTER CENTER

Editorial  
by  
Peter B. Good

In the past few months, there has been a steady decrease of news submitted to the editor of the Observer. This situation should and can be mitigated by you. If you lose interest in your paper, then the Observer, like anything else, will fold. I am positive that the majority of you enjoy reading this monthly periodical.

Take a positive interest and contribute "news" to the editor.

The future of the Observer rests with you.

Editor:  
Peter B. Good

Cub Reporters for Month of September:

|                |              |
|----------------|--------------|
| Peter B. Good  | Neil Albaugh |
| Howard Lambert | Tom Williams |
| Sis Michael    |              |

Stories by:

|               |                    |
|---------------|--------------------|
| Don Hovatter  | Dr. William Howard |
| Marvin DeJong |                    |

Photography and Printing by:  
Graphic Arts Dept.

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From 610 to 7040  
by  
Dr. Howard

Since its beginning the NRAO has had a succession of ever-larger computers starting with simple desk calculators with which we are all familiar, and progressing through the IBM 610, the Bendix G-15, and the IBM 1620. Early this past spring it became evident that the 1620 was going to be taxed to its maximum capability by the addition of the interferometer, the occultation receiver and the autocorrelation receiver, especially since these outputs were being converted by magnetic tape and the 1620 was basically not a tape-oriented computer. Our need, then, was for a faster computer with a tape handling capacity and after some deliberations the Observatory decided to switch to one of the IBM 7000 series of computers, the 7040. The IBM 7040 is much faster than its predecessor - about 4 to 10 times faster depending on how it is used. In fact, the speed with which the 7040 can compute puts it within easy hailing distance of some of the most complex computers now available. Delivery times on this type of system often runs up to a year or more, but we were fortunate in being able to start operations with the 7040 in late August, only six months after we placed the order. At the time of this writing the major bugs have been ironed out - all new installations of this type have them - and we are getting around to a moderately routine operation.

We have made one major change. On the IBM 1620 it was very easy for a programmer to "de-bug" his program right at the computer. Now it is much more difficult to do so; in fact, our system is now so sophisticated that if a program contains an error, the computer prints out the nature of the error and proceeds automatically to the next pro-

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gram waiting in line. This conversion from an "open shop" to a "closed shop" operation should speed up the reduction process so that everyone will get quicker service than he received on the 1620 and all the processing, at least initially, can be confined to the normal 8-hour working day. This new mode of operation is in pretty sharp contrast to the last few month's operation on the IBM 1620 when time on the computer was assigned for a week in advance and scheduled operations took up the full 7-day week, twenty-four hours a day.

Our programmers Dick Bird, Bob Vance, Mike Kaiser, and Don Haxton have done a good job in converting many of the 1620 programs so that they will now run on the 7040. They were given a significant assist by Bill Ogden and Al Braun who were with the Computer Group this summer. Linda Friel remains in her capacity as secretary-clerk for the computer group and assists occasionally at the key punch. We have one addition member of the group, Jacqueline Plyler who operates the key punch and who is currently assisting the scientific staff in their reduction problems. Sandy Rose has now become a very capable machine operator and handles virtually all the input and output of the data at our new warehouse location.

The new IBM 7040 consists of a central processing unit, a card read-punch, a printer and three tape drives. It is a minimum "load-and-go" operating computer. Its new location at the warehouse is temperature and humidity controlled, and contains three offices, a conference room and a small amount of storage space for cards and magnetic tapes. It is still a relatively small operation as computing groups go, but the recent changes in computing machinery should go a long way toward meeting the NRAO computing requirements. This is our goal and we shall do whatever we can to meet the needs of all the NRAO observers.

Do drop in and see our new facility, won't you? No smoking, though!!

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BARGAINS GALORE

ART SHOW

REFRESHMENTS

Green Bank Public Library, OPEN HOUSE and BOOK SALE  
Monday, October 26th, 1-5 p. m.



INTERFEROMETER

Observations are proceeding on 6 of the stronger radio sources for calibration purposes and determination of instrumental parameter.

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300' TELESCOPE

Since the 17th of August, the NRL group has been using the 300 foot telescope for polarization studies. They plan to finish on the 27th of September. They had one of the heaviest observing schedules ever attempted. Over 72 sources were observed each 24 hour period.

Auto-correlation studies will resume on the 28th of September. Dr. Westerhout, Dr. Menon, and Mr. Heiles will be involved.

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140' TELESCOPE

On the light side at the 140' - Pete Good barely made it through the long hot summer. Seems he flipped his lid over some young kid (poetry). His lid always was slightly flipped from the time he first arrived here and at times its been quite a task to keep the lid from falling completely off. Pete has a long way to go - he's really not a bad guy at all - takes an awful lot of kidding from everyone though.

There's slight confusion at times at the 140-ft when someone yells for Howard. Do they want Howard Brown or Howard Lambert? Howard and Howard have solved the problem - they call each other Charlie.

Awards for meritorious service were recently presented to Carolyn Dunkle and Gene Marcum. Carolyn's was from the "Order of Wounded Bucks" and Gene's was from the "Order of Blue Diamonds". Awards of this type are worth working for - keep up the good work.

Al Hollid recently received a TWX (fake) which he went for lock, stock and barrel. It advised him to

report to Reno for his next assignment. Al had a laugh along with the rest of us when told it was faked. We don't own Ford or GM or any other big companies but, we do have some fun at times. What's life without some fun? Red Skelton recently said "Life is great, without it you're dead".

On the serious side - Green Bank's football team seems to be doing pretty well this year. Haven't scouted the opposition so don't know whether it's been tough or not.

Howard Lambert started his third year at the Observatory on September 17. He continues to drive from Franklin every day but, intends, sometime in the near future, to get a place closer to the Observatory. He says this daily drive is quite a burden.

Grabe continues his weekend trips to his home in Pittsburgh.

An often repeated question "What's going on at the 140-ft" is, we hope, answered by the following:

1. Contractor is setting polar gears.
  2. Contractor is fabricating houses to cover spherical bearing and tail bearing.
  3. Contractor is welding stools to aluminum superstructure.
  4. Contractor is placing lifting apparatus on superstructure.
  5. Contractor is bolting outer panels together - and so on, and so on, and so on.
- 

ENGINEERING ESSENCE

The picnic shelter has been completed, however the water pipe will not be installed until next spring.

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For those who enjoy baseball, you will be happy to know that the baseball field has been rejuvenated.

Ski fans!!! The grass behind the tennis courts has been cut. Idea is to make a ski slope for the winter enthusiasts.

Basil Gumm and Bedford Taylor have passed all the welding tests.

John Echternach, engineering student from Drexel has returned to school.

George Knudsen, All-State senior draftsman, here on temporary assignment drove up in a 1960 Rambler and will be leaving in a 1964 Rambler. It seems that the 1960 Rambler split a block to a degree beyond repair. So, he had to buy another auto. Apparently, he likes Ramblers.

Mike Coleman and Bill Sheets, who have been working in Engineering, have returned to college.

Bob Elliott is on vacation.

Tony Hamed hired several people to help him haul in his corn crop. The only trouble is that they forgot to show up. Consequently, Tony and his wife had to do it alone, and after 49-1/4 hours, all the corn was in.

Has this every happened to you? "We are happy to tell you that your husband has been appointed chairman of the recreation committee of the PTA". Of course, your hubby was not informed or even told that his name was being considered for this position. This "direct-action" tactic has not been viewed with favor by those involved. How does that old proverb go - "Do not undo to others what you would not have them undo to you".

### IT'S THE WORKS

The Maintenance Division was pleased to see

my Arbogast, who dropped in to see us between assignments in the Army. He was formerly our room attendant. His reassignment was from a "summer in Texas" to a "winter in Greenland". I'm told the Army is like this.

The Automotive Maintenance group has recently been busy winterising our transportation equipment and getting the snow removal equipment in order. Perhaps this might serve as a suggestion that you do the same.

### CRYOGENICS

Dr. Frank Low has recently returned from the University of Arizona where he observed with the 28 inch optical telescope at 10 microns.

Wade Poteet has returned to Virginia Tech and Ellis Remsberg has taken his place for the next quarter.

### LAB GAB

The 6 cm line receiver has been operating in the Lab. A few more details need to be taken care of before going on the telescope such as: installation of a noise tube and recorder output. This receiver switches between two local oscillators of different frequency in order to detect an emission line if it exists.

Fred Wentworth of Advanced Technology in Timonium, Maryland delivered the 3 mm receiver to NRAO this month. The mixer uses a "roll-your-own" mixer diode which requires a lot of tweaking to reduce the noise figure. Tests so far have been encouraging.

Peter Mezger, J. Baars, O. Bowyer, and N. Albaugh inspected the 36 foot telescope that has been offered to NRAO by North American Aviation in Columbus, Ohio for observations with the 3 mm receiver.

The telescope is scheduled to be completed and operating in early December.

Bill Kuhlken has almost rebuilt the maser. The dewar has been checked, but noise figure measurements as well as 1F checks are necessary.

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The dewar uses a vacuum thermal insulator; no polystyrene pellets are used anywhere in the system. No date has been set for telescope operation.

Reports that Rose has had the cast removed from her arm but still can't swing a rolling pin.

The auto-correlation receiver will be installed for a month on the 300-ft telescope.

Claude Bare is working on selection of an on-line computer for the 36 foot telescope.

The TV boosters for the residence hall are being held up due to a lack of waterproof housings which were to have been furnished.

Ralph Cooper will soon move to Arbovale.

Jim Oliver's wife Jane gave birth to a baby girl this month. Congratulations!!

A Georgia Tech student, Jeff Hunter, is presently working in the receiver section.

D. Ross's 11 cm diode switch, appears to have promise. Insertion losses of about 1 db have so far been achieved. The loss is expected to be reduced to about 0.5 db by minor magic miracles.

Be sure to watch next month for the adventures of Mighty Maser.

#### WE WOULD LIKE TO WELCOME

|                   |                      |
|-------------------|----------------------|
| Roba G. Mann      | Electronics Division |
| David L. Van Horn | Telescope Operations |
| W. F. Workman     | Plant Maintenance    |
| May Kaftan-Kassim | Research Group       |

#### BUSINESS MANAGEMENT

Dr. Barry Smith of Charles Town, W. Va. will move into the Martin Clinic Building on the first of October to begin his practice in this vicinity. Dr. Smith was graduated from the School of Medicine at West Virginia University and did his internship at Deaconess Hospital in Spokane, Washington.

Democratic candidate for Governor of West Virginia, Mr. Hulett Smith was escorted by Mr. Callender and Mr. Plunkett around the site. Mr. Smith shook as many hands as he could in the 15 minutes that he was here.

Mr. and Mrs. James Michael enjoyed the stock car races at Martinsville, Virginia. Top drivers from across the East participated in the race.

#### LIFE

Did it ever occur to you that a man's life is full of crosses and temptations? He comes into the world without his consent and goes out against his will, and the trip between is exceedingly rocky. The rule of contraries is one of the features of this trip.

When he is little the big girls kiss him; and when he is big the little girls kiss him. If he is poor he is a bad manager; if he is rich he is dishonest. If he needs credit he can't get it; if he is prosperous everyone wants to do him a favor.

If he is in politics it is graft; if he is out of politics you can't find a place for him and he is no good to the country. If he doesn't give to charity he is a stingy cuss; if he does it's for show. If he is actively religious he is a hypocrite; if he takes no interest in religion he is a hardened sinner.

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If he gives affection he is a soft specimen; if he cares for no one he is cold blooded, if he dies young there was a great future for him, if he lives to be an old man he missed his calling.

If you save money you're a grouch, if you spend it you're a loafer. If you get it you're a grafter; if you don't get it your a bum - So  
What The H\_\_\_\_\_ 's The Use?

-----  
FOR SALE

Tube Tester - Model 71 - "Professional"  
National Radio Institute  
"Like New" - will sell very reasonable

See: Jerry C. Shears  
Room 114 - Lab Building

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RIFLE CLUB

Recently (you may have heard them) the members of the Green Bank Rifle & Pistol Club have been attempting to shoot qualifying scores with 30 caliber M1's. We've had a lot of fun and we've seen "aggies drawers" quite a few times.

Actually, the majority of the members have already fired qualifying scores. One who isn't yet qualified is Jim Dolan. Is it because you haven't had time, Jim; or could it be that the claims you made for your shooting ability were a bit exaggerated and you're afraid you can't live up to them?

The club has also been having small calibre .22 and .45 automatic matches. The weapons and ammunition for all of these matches are furnished, free of charge, to club members by the Director of Civilian Marksmanship.

If you'd like to know more about this set up just get in touch with one of the members, and they'll be glad to fill you in. A list of the club officers and members is included here for your

convenience in obtaining information:

John A. Hungerbuhler , President  
Paul J. Devlin, Vice President  
D. H. Hovatter, Secretary-Treasurer  
Fred Crews, Executive Officer  
James L. Dolan  
H. W. Brown  
Claude Bare  
Al Braun  
John W. Parker  
James C. Oliver  
Richard S. Skaggs  
John C. Wooddell  
J. M. Hamed  
Richard Hiner  
William Kuhlken  
Covert C. Poling  
Neil P. Albaugh  
H. W. Hanes  
Merritt Gum  
Sidney Smith  
Norman Savin (Student)  
Andy Rogers

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1 - 2 - 3 HIKE

Pocahontas Redskins Slaughter Green Bank Packers in Opening Grid Tilt.

The first two entries of the recently established United Two Handed Touch Football League opened the 1964 season at Hannah Stadium on September 17. The Redskins downed the Packers to the tune of 42 to 24 in a wide open game of razzle-dazzle two handed football.

Wally (the Foe) Oref quarterbacked the Redskins with carefully planned plays, for example every-one go out for a pass. It was impossible to determine who was the quarterback of the Packers because of the speed with which their plays were executed. Apparently they didn't know themselves. Mike (the Brute) Kaiser was side lined (from work the next day) by a severe ankle injury. As the score indicates, both teams fielded outstanding defensive platoons (same as the offensive platoons). Tom (Speedy) Carpenter played offense for both

teams and sparked the Redskins to their stunning  
victory.

Since Jeanie is employed with the FBI, the family  
was escorted through the White House by the FBI.

TID-BITS

Yervant Terzian has returned from a whirlwind  
trip of Greece. He won't talk much about what  
he did, but we know he's tired and broke.

It is nice to see the elaborate TV antenna  
system finally installed at the Residence Hall.  
We can pick up the radio source 3C273, ap-  
proximately 1,800,000,000,000,000,000 miles  
away but have a difficult time receiving TV Channel  
10 in Roanoke, just 125 miles away. Perhaps a  
pre-amp would help and a new TV set.

10,125 people visited the Observatory this summer.  
28 states and 4 foreign countries were represented  
by registered visitors.  
40 per cent of these visitors were West Virginians.  
Over 4,000 visitors came in August.  
Average number per day for the season was 157,  
rain or shine.  
Most popular day of the week for visitors was on  
Sunday.

Mrs. Maxine Foe left Saturday, Sept. 26, for  
a vacation of 2 weeks at Palm City, Florida.  
All indications before she left is that she is  
going to supervise the launching of a satellite  
or something. Anyway she was going to get in  
orbit.

Largest single day's attendance was 361 on Sept. 6.  
Compare the increase of attendance over the years:

Cleo Harper was visiting in Elkins Sept. 26.  
Murphy's enlarged their 5 and 10 Store.  
Undoubtly she was going Christmas Shopping.

|            |        |
|------------|--------|
| 1960. .... | 2,490  |
| 1961. .... | 5,472  |
| 1962. .... | 5,887  |
| 1963. .... | 9,032  |
| 1964. .... | 10,125 |

Verna Tracy was seen walking home the other  
night. What's the matter Verna - Bramble lose  
his car keys again?

Under present conditions, this is the maximum  
amount that can be handled by Mr. Oref and his  
group.

A welcome back to Rosie Gillispie who is working  
at the Cafeteria while Maxine is soaking up sun in  
Florida.

Martin Barkley has married Miss Joan Monk  
(Bonnie's sister). They were married at  
Rev. John's Parrish in Huntersville on August  
1964. The couple honeymooned in D. C.  
and are now residing in Boyer.

Ann Grace Ware celebrated another birthday  
Sunday September 27. Watch it Anna Grace -  
age has its way of showing.

Homemade soup and chili are prepared daily in  
the Cafeteria. The cooks suggests that you all  
support the cafeteria or we'll both starve.

OBSERVATORY WIVES' MEETING

The Observatory wives will meet Wednesday,  
October 14, 1964 at 1:30 to 3:30. at the  
Residence Hall.

Spencer Greenwood and Paul Devlin entered the  
Hospital of the University of Pennsylvania on  
September 25th. Good Luck.

The hostesses are Mrs. Bertil Hoglund and  
Mrs. David Hogg.

Mr. and Mrs. Russell Clarkson spent an enjoyable  
vacation with their daughter, Jeanie in D. C.

## JUST FOR TODAY

Just for today. I will try to live through this day only, and not tackle my whole life problem at once. I can do some things for twelve hours that would appall me if I felt I had to keep them up for a lifetime.

Just for today I will be cheerful, though it break my heart. Happiness is from within; it is not a matter of externals.

Just for today I will adjust myself to what is, and not try to adjust everything to my own desire.

Just for today I will take care of my body. I will exercise it, care for it and nourish it, and not abuse or neglect it.

Just for today I will try to strengthen my mind. I will study. I will learn something useful. I will not be a mental loafer. I will read something that requires effort, thought, concentration.

Just for today I will exercise my soul-in three ways, to wit: (a) I will do somebody a good turn and not get found out. If I get found out, it will not count. (b) I will do at least two things that I don't want to do-just for exercise. (c) I will not show anyone that my feelings are hurt. They may be hurt, but I won't show it.

Just for today I will have a program. I may not be following it precisely, but I will have it. It will save me from two pests - Hurry and Indecision.

Just for today I will be unafraid. Escpecially, I will not be afraid to be happy, to enjoy what is beautiful, to love and to believe that those I love, love me.

(Courtesy of the B. & O. C. T. R. R. Newsstand, Chicago 7, Illinois - Lee Zylstra, Manager)

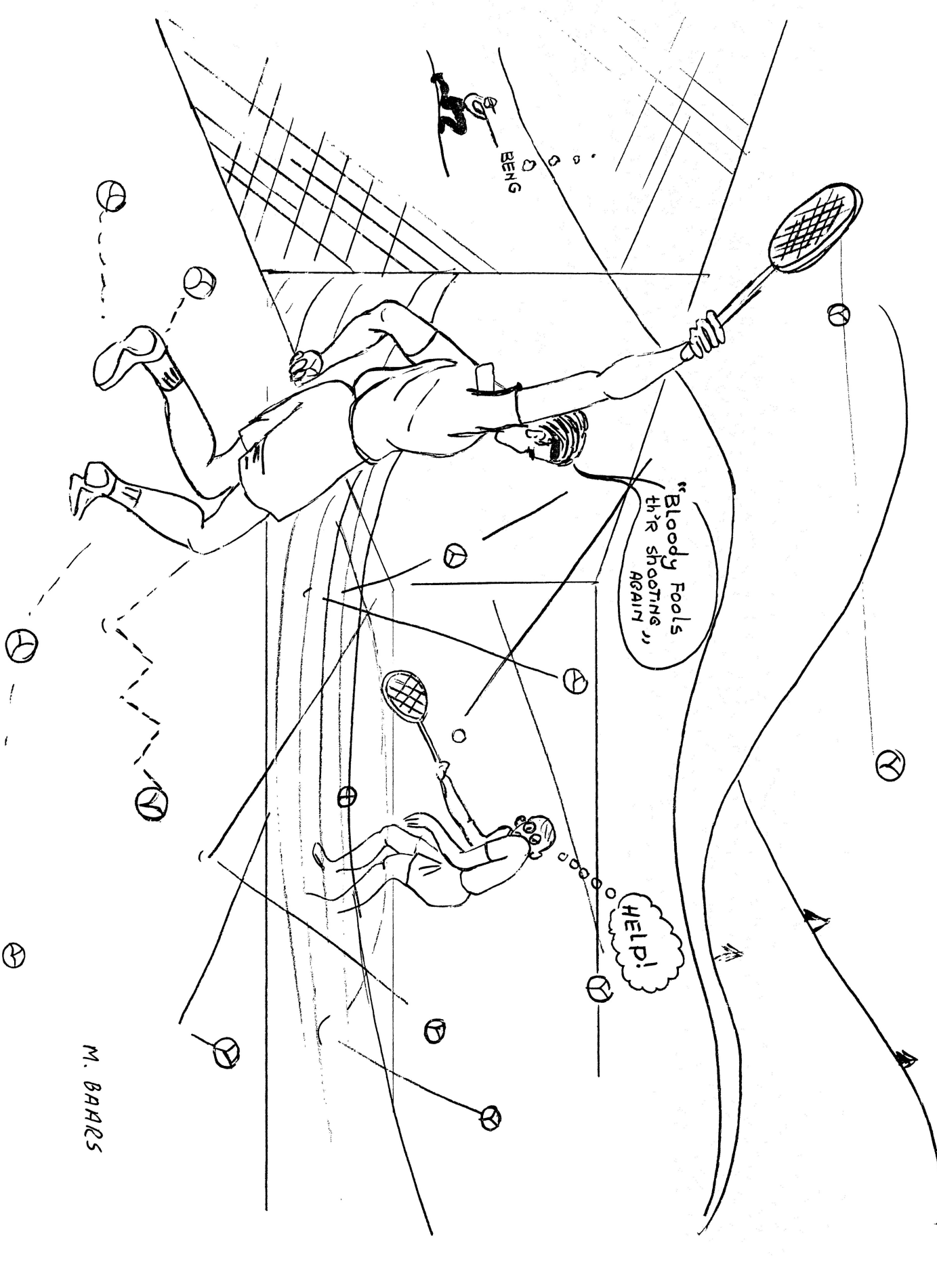
Harry Langdon  
Laurel and Hardy  
Charlie Chaplin  
Andy Clyde  
Charlie Chase  
and  
others  
in

“  
30 years of  
FUN”

\* BRING THE ENTIRE FAMILY.....  
..... AND THE KIDS TOO!

Oct. 5<sup>th</sup> - 7:30<sup>PM</sup>





"BLOODY FOOLS  
THY'R SHOOTING AGAIN"

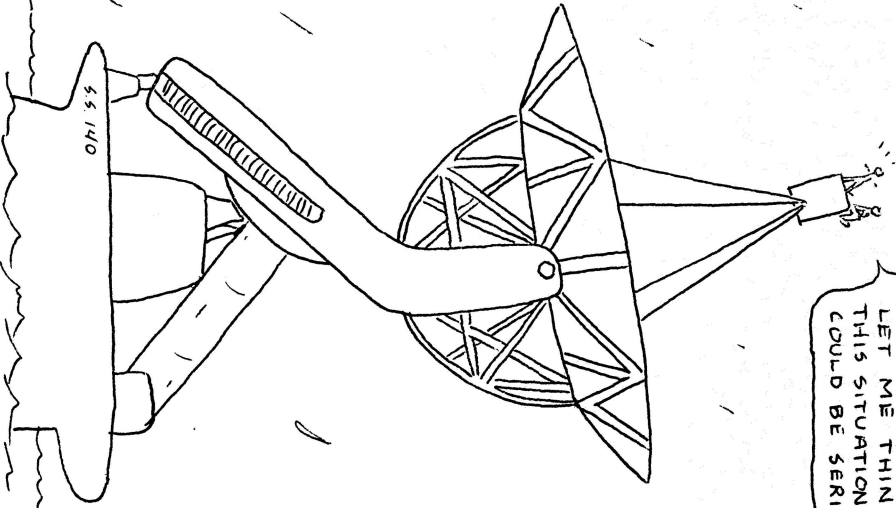
HELP!

BENG

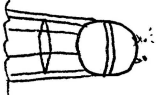
M. BARRS

HOWARD, WHAT DO WE DO NOW?

EUGENE... PLEASE SIT DOWN AND LET ME THINK! THIS SITUATION COULD BE SERIOUS.



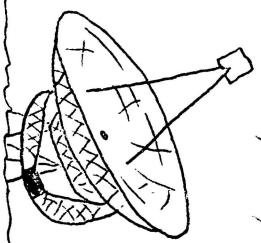
MOTHER...



What's for supper tonight?

I BELIEVE IT'S SPAGHETTI!

WOMEN AND CHILDREN FIRST!



I GUESS THIS ENDS THE DRY SPELL AT THE N.R.A.O.  
SHUDDUP! AND ROW!  
1-2-3, 1-2-3 etc.



Good  
Gayer

Pat B. Snow