



VOLUME 9 NUMBER 1

JANUARY 1992

## ATCO FALL 1991 EVENT REPORT

On Sunday 13 October 1991, sixteen ATCO members and guests attended the Fall 1991 Event held at ABB Process Automation's Shelterhouse on Ackerman Road in Columbus.

Although the crowd wasn't as large as expected, those attending enjoyed the beautiful autumn afternoon talking to friends, eating lunch, and the Show and Tell program.

ATV projects were displayed by Rick, WA3DTO; John, WABEOY; Dale, WABKQQ; Dick, WBRVH; and Bill, WBBURI.

Thanks to our event chairman Rick, WA3DTO, and to those assisting him for a pleasant afternoon.

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## NOW IT'S TIME TO PAY YOUR DUES

Another year has rolled around, and it's dues paying time again. If "12-91" appears after your name and call letters on the mailing label of this issue of the newsletter, then your membership has expired. (continued on page 5)

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The ATCO Newsletter is the official publication of a group of television amateurs known as "AMATEUR TELEVISION IN CENTRAL OHIO" and is published in January, April, July, and October.

Membership in ATCO is open to any FCC licensed radio amateur who has an interest in amateur television.

Any publication of material printed in the ATCO Newsletter without the written consent of ATCO is prohibited.

## NEW ATCO MEMBER

We welcome Terry, WBARE.

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## WB8URI TOWER OF POWER

To save space in the shack, Bill built a rack system for his transmitting equipment. The rack is an old six foot Motorola unit with 19 inch mounts. After removing the old equipment, the cabinet was wire brushed, sanded, and a fresh coat of paint was applied. The aluminum panels were sheared, and meter holes punched at a local metal fabricating shop. Black 10/32 inch cap screws hold the panels securely to the cabinet.

A brief rundown from top to bottom of the units in the rack follows (refer to the accompanying photo):

1. High voltage and bias supply with associated metering for 144 MHz 4CX250 amplifier (at top).

2. 144 MHz 4CX250 amplifier with tuning controls.

3. 440 MHz D1010 amplifier.

4. 440 MHz ATV transmitter.

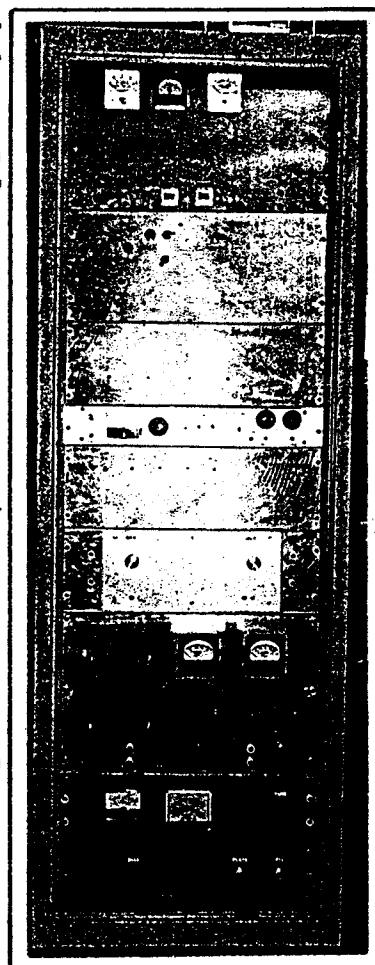
5. Control panel. This includes switching for transmit and receiving relays, fans, and high current 12 volt supply.

6. 1200 MHz FM ATV transmitter.

7. High current 12 volt power supply.

8. 1200 MHz 7289 amplifier with built-in power and bias supplies (at bottom of cabinet).

(Submitted by Bill, WB8URI.)



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THE ATCO ATV NET MEETS AT 9 PM EVERY TUESDAY.

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## ATVERS WITNESS WILD PAYLOAD DESCENT

By Dave, AH2AR

On 6 October 1991, the Dayton Amateur Radio Association launched their second in a series of five high altitude amateur radio packages from the National Weather Service Radiosonde Launch Site in Huber Heights, Ohio. The Sunday morning 0910 (Dayton time) launch was very successful in spite of the cold, windy conditions that prevailed over the weekend. As luck would have it, the only four hours of clear weather during the weekend coincided with the time the balloon was released.

The wind started picking up at about 0850, and the "balloon fill" crew and onlookers watched in horror as the balloon stretched almost two stories in height as the westerly winds started buffeting the expanding balloon. The heavy-duty Kaysam 105-G held up under the high winds as N8NEU, AH2AR, and WB8ELK hurried to ready the balloon for flight. The balloon with its package was finally released at 0910 local time. It was an absolutely flawless launch of the six pound payload and trailing ten by four foot passive radar reflector. With only about 30 ounces of positive lift, the package ascended at around 900 feet per minute and eventually attained an altitude of 110,000 feet after over two hours of ascension time.

On board the balloon was a two meter FM beacon transmitter, an ATV live camera transmitter with the video telemetry overlay board, and a 20 meter cw beacon. The FAA in Indianapolis was able to track the package by radar during the duration of the flight.

The higher resolution black and white JCV camera on board the package allowed an extremely high resolution view of the surrounding countryside by ATV watchers out to over 400 miles. Additionally, a 40 inch long paddle was placed on the package that helped dampen package rotation velocity on its ascent. A spectacular view from zero altitude to 110,000 feet was offered to all within range of the payload.

The balloon burst at a plotted 110,000 feet, and viewers in the Midwest and surrounding states watched one of the most dramatic and violent descents witnessed to date. Examination of the package after it landed helped substantiate the theory that the two-dimensional "scroll" passive radar reflector hanging 15 feet below the payload tangled the shroud lines. As the payload started to descend at twice its normal velocity, the paddle used for ascent stabilization caused the package to twist in a corkscrew fashion and further entangled the parachute shroud lines. This caused the payload to free fall over 60,000 feet in a dizzying ride from the edge of space. ATVers witnessed the

(continued on page 4)

## ATVERS WITNESS WILD PAYLOAD DESCENT

(continued from page 3)

ride down to earth as the package developed momentum in a harrowing 120 rpm flat spin.

Miraculously, ATV viewers then saw a partial slowing and stabilization of the package as the remnants of the parachute added drag to the payload. The stabilization fin had acted like a rotor blade and continued to impart a slower spin on the package in the thicker atmosphere like a falling large maple seed. The package fell at twice the normal descent speed; estimated speed of the falling payload after entering the denser lower atmosphere was about 45 mph.

With the blackness of outer space and the curvature of the Earth no longer visible, the popcorn sized clouds grew larger and larger as the package fell ten miles short of its predicted touchdown point. The landing occurred in a pasture ten miles east of Mansfield, Ohio (120 miles from the launch area). The package's styrofoam protective jacket absorbed the "sudden stop," and two components on the ATV exciter board were damaged. The 70 cm ATV transmission abruptly went off the air, but the two meter beacon and the 20 meter beacon continued transmitting.

The foxhunting team was approximately ten miles away from the package landing which was witnessed by several unsuspecting cattle. Paul, W9DUU, and Dave, KD8FD, along with other members of the DF team, closed in on the package. The two meter signal led the team to the package's final resting place, and Dan, N9KZA, was first to find the payload and the tangled parachute.

Larry, KB8EMQ, videotaped the balloon flight from liftoff to the payload's descent to about 20,000 feet using a quagi antenna redesigned by George, KE8OH. Set up at the balloon launch site, Larry provided a visual means to monitor the payload's ascent and descent. Mark, N8COZ, provided video to the HF Net Control WBBI run by Vic, N8FFP. Vic's idea of coordinating this launch through the MIDCARS Group on 7.258 MHz ended up being the perfect solution in finding a slot on 40 meters for Balloon Payload HF Net activities. A very unusual large number of check-ins throughout the United States, Canada, and South America provided tracking and propagation information to the net control station. The absence of QRM and adjacent QSO's was a welcome relief in finding an appropriate frequency to run this type of special event.

If the entanglement and subsequent shredding of the parachute had not occurred, the payload would have landed ten miles farther out within a heavily wooded National Forest and Indian Reservation. Except for the presence of two angry bulls among the cattle, the payload's landing was in a near ideal location for balloon recovery operations.

## NOW IT'S TIME TO PAY YOUR DUES

(continued from page 1)

Send your ten dollar check made out to Warren G. Duemmel. The Acting ATCO Treasurer's address is 3488 Darbyshire Drive, Hilliard, Ohio 43026. If you have changed your address or your call recently, please enclose a note with your check.

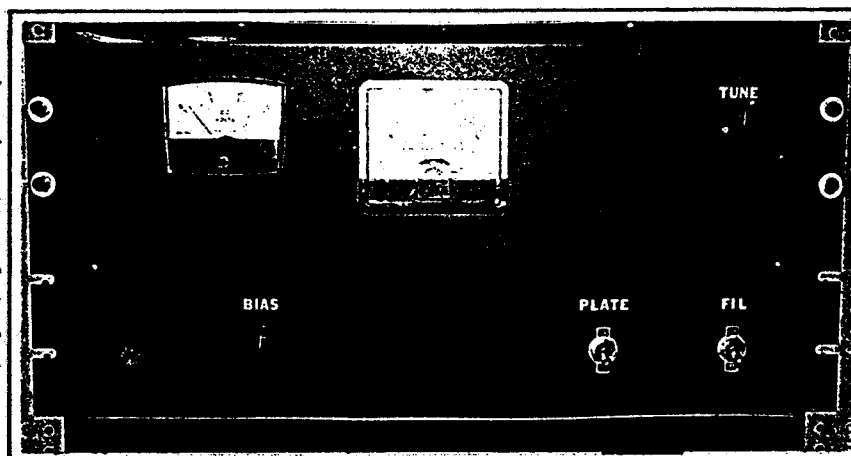
Every member of record as of 31 December 1991 receives the January 1992 issue of the ATCO Newsletter, but if you don't renew your membership now, this is your last newsletter.

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### 1200 MHz AMPLIFIER DISPLAYED BY WBBURI

At the ATCO Fall 1991 Event, three 1200 MHz amplifiers were shown during the Show and Tell part of the program. A description of the unit (see photo at right) put together by Bill is as follows:

The entire amplifier and voltage supplies were mounted in an old 17" x 12" Premier chassis that had been cleaned and then repainted. Circuitry for the high voltage supply was taken from the 1988 ARRL Handbook, chapter 27, page 39.



Block diodes and a single oil filled capacitor eased construction and saved space. All high voltage wiring was RG-58 with vinyl jacket and outer braid removed.

The bias supply uses circuitry from the 1988 ARRL Handbook, chapter 32, page 49. The amplifier unit (described in the October 1991 issue of the ATCO Newsletter) sits neatly in a corner of the chassis. Provision was made at the time of construction for further improvements, such as water cooling and replacing the one tube amplifier with a two tube amplifier.

The front panel has high voltage and current metering. The final appearance was complemented by the use of 1/4" white lettering that is available from office supply stores. (Submitted by Bill, WBBURI.)

## ATCO MEMBER TO SPEAK

Bill, WB8URI, is scheduled to give a talk on Saturday 25 January 1992 at the Indiana UHF Club meeting. The meeting will be held in Indianapolis and will start at 7:30 p.m. Bill's topic will be related to operation and home building of 1200 MHZ ATV equipment.

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## AND NOW - SuperNTSC

Several test demonstrations were made last summer in the United States showing a television system called SuperNTSC. It doubles the number of horizontal scanning lines on a TV screen to 1050 from 525.

The standard of 525 lines is called NTSC because it was set by the North American Television Standards Committee in the 1940s. SuperNTSC is compatible with NTSC and the Super signal can add some improvement to the picture even on today's standard set.

To realize the full improvement of SuperNTSC, a viewer must have the right kind of a receiver. Modifications for Super might add \$300 to the cost of a TV set. And modifications for broadcasting might cost a broadcaster \$400,000.

These additional costs may seem like a lot of money, but are considered small when compared to the projected costs of full HDTV (high definition television). Prices in the thousands of dollars per TV set and broadcasting investments in the millions of dollars are predicted for HDTV.

Those who have seen the demonstrations said it looked so good that they couldn't believe it. They seemed to take it for granted that television necessarily is blurred and fuzzy. The demonstrations proved that that isn't so.

In considering HDTV, the Federal Communications Commission has ruled that a new system should not have the effect of making present equipment obsolete. There are about 160 million television sets in the United States of the NTSC variety.

A new HDTV system would be vastly different from NTSC. The new signal would probably be a different sort, digital instead of analog, and designed so that it would not interfere with NTSC. A station could broadcast both simultaneously.

Just what kind of a system HDTV will be in the United States is to be decided by the FCC by June 1993. It will be the first setting of such a U.S. standard in more than 50 years. (From the St. Louis Post-Dispatch December 1991.)

## ATCO MEMBERS AS OF 31 DEC 1991

KBAEH	Wilbur Wollerman...	1672	Rosehill Rd.....	Reynoldsburg	43068
WBAER	David Sears.....	1678	Kaiser Dr.....	Reynoldsburg	43068
KBAOH	Charles Tucker.....	1316	Kenwood Ave.....	Springfield	45505
AH2AR	David Pelaez.....	4872	Trailside Court.....	Huber Heights	45424
WBARE	Terry Meredith.....	1524	Ashdowne Rd.....	Columbus	43221
KB2ARL	Dave DiGiuseppe.....	391	3A Directory Dr.....	Columbus	43213
WABATF	Emmett McDonald...	14120	Flintridge Rd. SE...	Glenford	43739
W9AZO	Jim Walter.....	2662	St.Rt. 39 NW RD#3...	Mansfield	44903
KB8BIY	Bob Shaw.....	59	Parkview Ave.....	Westerville	43081
W8BJN	Gene Kirby.....	13613	U.S. 36.....	Marysville	43040
W8BLN	Bob Pfeiffer.....	135	S. Main P.O.Box 224.	North Hampton	45349
KB8BQC	Phil Boerger.....	15044	Scottslawn Rd.....	Marysville	43040
W8CCW	John Ferrell.....	3722	Wagner Court.....	Grove City	43123
W8CJW	Dale Elshoff.....	8904	Winoak Pl.....	Powell	43065
N8CYV	Blaire Standley.....	721	West North St.....	Springfield	45504
WA3DTO	Rick White.....	5314	Grosbeak Glen.....	Orient	43146
N8EHW	Foster Warren.....	124	East Clark St.....	North Hampton	45349
W8E0Y	John Schlaechter...	3199	Lewis Rd.....	Columbus	43207
KB8ESR	Tommy Camm.....	1267	Arkwood Ave.....	Columbus	43227
N8FFO	Edward Hauff.....	2716	Columbus Ave.....	Columbus	43209
KB9FO	Henry Ruh.....	1545	Lee Street Suite 73.	Des Plaines, IL	60018
KB8GZO	Jason Pelaez.....	4872	Trailside Court.....	Huber Heights	45424
KABGZO	Warren Duemmel.....	3488	Darbyshire Dr.....	Hilliard	43026
K8HRR	Ira Bickham.....	260	Tiki Dr.....	Merritt Is., FL	32953
KBHVA	Guy Cunningham, Jr...	31	Birchfield St.....	Plymouth	44865
KBISM	Steve Iacono.....	1075	Virginia Ave.....	Columbus	43212
K8JGY	Fred Yost.....	330	Dellfield Way.....	Gahanna	43230
N8KCB	Chris Morris.....	3181	Gerbert Rd.....	Columbus	43224
W8K0Q	Dale Waymire.....	225	Riffle Ave.....	Greenville	45331
W8Q0T	Tom Camm.....	1267	Arkwood Ave.....	Columbus	43227
W8B0TH	Perry Yantis.....	1850	Lisle Ave.....	Obetz	43207
W8BF	Bob Mills.....	6834	Halligan Ave. East..	Worthington	43085
KEBPN	James Easley.....	1507	Michigan Ave.....	Columbus	43201
W8RMC	Arthur Towslee.....	180	Fairdale Ave.....	Westerville	43081
W8RUT	Ken Morris.....	3181	Gerbert Rd.....	Columbus	43224
W8RVH	Richard Goode.....	9391	Ballentine Rd.....	New Carlisle	45344
W8TTE	Phil Morrison.....	154	Llewellyn Ave.....	Westerville	43081
W8TV	Bob Dye.....	6118	Sedgwick Rd.....	Columbus	43235
W8BUGV	Bruce Jaquish.....	4817	W. Arlington Park...	Fort Wayne, IN	46835
W8BURI	William Heiden.....	4435	Kaufman Rd.....	Plain City	43064
W8VSY	Jack Schmermund.....	401	North Main St.....	West Milton	45383
KABWEX	Philip Hardman.....	940	Oakwood Ave.....	Columbus	43206
KABWGX	Martha Yost.....	330	Dellfield Way.....	Gahanna	43230
KABZPF	Johnny Camm.....	1267	Arkwood Ave.....	Columbus	43227

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## ATCO FINANCIAL STATEMENT

Cash balance as of 30 September 1991: \$504.12. Receipts: \$40.00. Expenditures: printing charges for October 1991 ATCO Newsletter \$25.91; postage for October 1991 ATCO Newsletter \$12.18; miscellaneous costs incidental to publication of newsletter \$16.37; food and incidentals for Fall 1991 ATCO Event \$100.13; total expenditures \$116.50. Summary: cash balance as of 30 September 1991 \$504.12; receipts \$40.00; expenditures \$116.50; balance as of 31 December 1991 \$389.53.

The above financial report was prepared as of 31 December 1991 by Warren G. Duemmel, KABGZO, ATCO Acting Treasurer.

Editor: Warren, K86Z0

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FIRST CLASS MAIL  
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ATCO NEWSLETTER  
c/o Warren G. Duemmel  
3488 Darbyshire Drive  
Hilliard OH 43026

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HAPPY NEW YEAR 1992  
RENEW YOUR ATCO MEMBERSHIP NOW  
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