

Armed Service Day.....

Dear Dusty,

Some observations concerning this years Armed Forces Day Contest for RTTY. As usual the unexpected happened again during the last few minutes before sked time.

I noticed NPG on their 4016.5 kc frequency had severe space bias distortion, not being inclined to change the Range control on the 15 printer I looked for another broadcast. NSS on 4012.5 kc was printing here, but observations showed deep fades. A5USA on 4025 kc was doing a good printing job but a CW adjacent signal was causing garbles. A6USA on 6997.5 kc was weak at this nearby location due to skip and ground wave cancellation. Looking at 6992.5

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kc showed WAR coming through solid so we settled for them and made it solid.

Last year I set on WAR and they never did transmit the message on their published 14.405kc frequency, needless to say being pressed for time caused considerable scurrying up to NPG to catch what I could with the time remaining. I checked by mail with the MARS official for the Army and he courteously acknowledged that despite the minute preparations made prior to the WAR broadcast it never got off the ground on 14.405 kc.

I have found it helpful to compile a short list of military frequencies and make a dry run a few hours prior to sked time so that I am familiar with the receiver dial settings and can quickly QSY if things happen at the last minute!

73. W6DOU

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RTTY JOURNAL
P O Box 837
Royal Oak, Mich. 48068

First Class Mail --**RTTY**

July-August 1969

JOURNAL

EXCLUSIVELY AMATEUR RADIO TELETYPE

Volume 17 No. 7

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Interpreting the U.S. Weather Bureau Aviation Weather Transmissions

Because we have no back issues of any of the 1967 Journals we have decided to re-run some of the more popular articles of that year. If you have a particular one you would like to see let us know.

From January 1967 JOURNAL
by ED. KOCH. SUN CITY, ARIZONA

The U.S. weather bureau transmits, among many other things, a summary each hour of observed weather as recorded at the major airports of the country. This data is transmitted by radio-teletype at 60 words per minute, and the following data will enable you

to print the report and interpret it, provided you can set your printer so it will not unshift on space. A comparison of a weather type arrangement with your own type system will be explained further on in this article.

Following is a schedule of transmissions by WBR70, Miami, Florida:

3235 KC	2030 to 1400 GMTT
5937	Continuous
8130	Continuous
10950	Continuous
14395	Continuous
16440	1155 to 0500

Here is a sample aviation weather report:

MKC S 150M25⊕ 4RK 132/58/56/1807/993/VR32/ ⊕55 RB05⊕V⊕

LOCATION IDENTIFIERS SKY AND CEILING SPECIAL REPORT VISIBILITY WEATHER & OBSTRUCTION TO VISION TEMPERATURE & DEWPOINT WIND ALTITUDE SETTING RUNWAY VISUAL RANGE CODED PIREPS REMARKS

Explanation and Key to above headings:

Location identifiers -- following is a list of cities in the order in which they are transmitted

ORD O Hare Field, Chicago	RDU Raleigh-Durham, N.C.	FLO Florence, S.C.
EVV Evansville, Indiana	HAT Hattiesburg, S.C.	MYR Myrtle Beach, S.C.
DAY Dayton, Ohio	PMD Palmdale, California	AMG Alma, Georgia
MEM Memphis, Tennessee	ONT Ontario, California	AGS Augusta, Georgia
ATL Atlanta, Georgia	LAX Los Angeles, California	CNM Carlsbad, New Mexico
PHX Phoenix, Arizona	BUR Burbank, California	MAF Midland-Odessa, Texas
DUG Douglas-Bisbee, Arizona	SAN San Diego, California	LBB Lubbock, Texas
ELP El Paso, Texas	TLH Tallahassee, Florida	ABI Abilene, Texas
TUS Tucson, Arizona	TPA Tampa, Florida	DAL Dallas, Texas
CLE Cleveland, Ohio	PIE St. Petersburg, Florida	SJT San Angelo, Texas
ERI Erie, Pa.	FMY Fort Myers, Florida	SAT San Antonio, Texas
JFK New York City	EYW Key West, Florida	JCT Junction, Texas
EWR Newark, New Jersey	MIA Miami, Florida	AUS Austin, Texas
LGA La Guardia, New York	FLL Ft. Lauderdale, Florida	HOU Houston, Texas
PHL Philadelphia, Pa.	PBI West Palm Beach, Florida	COT Cotulla, Texas
DCA Washington D.C.	VRB Vero Beach, Florida	ALI Alice, Texas
DIA Dulles Intern.-Washingt	MLB Melbourne, Florida	PSX Palacios, Texas
BAL Baltimore, Md.	ORL Orlando, Florida	CRP Corpus Christi, Texas
RIC Richmond, Va.	DAB Daytona Beach, Florida	BRO Brownsville, Texas
ORF Norfolk, Va.	JAX Jacksonville, Florida	MKE Milwaukee, Wisc.
GSP Greer, S.C.	SAV Savannah, Georgia	DTW Detroit, Wayne, Mich
GSO Greensboro-High Point	CHS Charleston, S.C.	GRW Greenwood, S.C.

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BHM Birmingham, Alabama	BPT Beaumont/Port Arthur, Tx	Springfield, Mass.
LFK Lufkin, Texas	LCH Lake Charles, La.	BRL Burlington, Iowa
SHV Shreveport, La.	MSY New Orleans, La.	MKC Kansas City, Mo.
JAN Jackson, Miss.	PNS Pensacola, Florida	STL St. Louis, Mo.
MGM Montgomery, Ala.	MOB Mobile, Ala.	LRD Laredo, Texas
DHN Dothan, Ala.	BOS Boston, Mass.	TRF Turner, Ga.
GLS Galveston, Texas	BDL Hartford, Connecticut -	

SKY AND CEILING: Sky cover symbols are in ascending order. Figures preceding symbols are heights in hundreds of feet above station. Sky cover symbols are:

O	Clear: less than 0.1 Sky cover
⊕	Scattered: 0.1 to less than 0.6 sky cover
⊕	Broken: 0.6 to 0.9 sky cover.
⊕	Overcast: more than 0.9 sky cover.
-	Thin (when prefixed to the above symbols) (mystery here -- there is no dash symbol on my weather type basket???)
-X	Partial Obscuration: 0.1 to less than 1.0 sky hidden by precipitation or obstruction to vision (bases at surface)
X	Obscuration: 1.0 sky hidden by precipitation or obstruction to vision (bases at surface).

WEATHER SYMBOLS

A	Hail
AP	Small Hail
E	Sleet
EW	Sleet Showers
EW	Sleet Showers
IC	Ice Crystals
L	Drizzle
R	Rain
RW	Rain Showers
S	Snow
SG	Snow Grains
SP	Snow Pellets
SW	Snow Showers
T	Thunderstorms
ZL	Freezing Drizzle
ZR	Freezing Rain

INTENSITIES ARE INDICATED THUS:

--	Very Light
-	Light
(no Sign)	Moderate
Plus	Heavy

OBSTRUCTION TO VISION SYMBOLS

D	Dust
F	Fog
GF	Ground Fog
H	Haze
IF	Ice Fog
K	Smoke
B ¹	Blowing Dust
BN	Blowing Sand
BS	Blowing Snow

WIND

Direction in tens of degrees from true north, speed in knots. OOOO indicates calm. G indicates gusty. Peak speed of gusts follows G or Q when squall is reported. The contraction-wshft-followed by local time group in remarks indicates windshift and its time of occurrence.

ALTIMETER SETTING

The first figure of the actual altimeter setting is always omitted from the report.

Runway visual range (RVR) is in hundreds of feet.

Letter preceding height of layer identifies ceiling layer and indicates how ceiling height was obtained. Thus:

A	Aircraft
B	Balloon (pilot or ceiling)
D	Estimated height of cirriform clouds on basis of persistence.
E	Estimated heights of noncirriform clouds
M	Measured
R	Radiosonde balloon or radar
W	Indefinite
U	Height of cirriform ceiling layer unknown
/	Height of cirriform non-ceiling layer unknown
"V"	Immediately following numerical value indicates a varying ceiling

VISIBILITY - REPORTED IN STATUTE MILES AND FRACTIONS (V - VARIABLE)

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Coded Pireps: Pilot reports of clouds not visible from ground are coded with MSL (mean sea level) height data preceding and or following sky cover symbol to indicate cloud bases and or tops, respectively.

INTERPRETATION OF A SAMPLE REPORT:

MKC S 150M25 4RK 132 /58/56/ 1807/993/VR32/ 55 RB05V

Decoded report: Kansas City Special observation, 1500 feet scattered clouds, measured ceiling 2500 feet overcast, visibility 4 miles, light rain, smoke, Sea level pressure, 10132 millibars, temperature 58 dewpoint 56, wind 180 degrees, 7 knots, altimeter setting 29.93 inches. Runway visual range 3200 feet. Pilot reports top of overcast 5500 feet, rain began 5 minutes past the hour, overcast variable broken.

S indicates that report contains important change.

A comparison of your own particular keyboard with that of a weather keyboard will provide you with the key to reading the aviation weather forecasts. The top row of keys is not shown, since this is identical for all keyboards. Here are rows 2 and 3 of a weather keyboard:

ROW 2
LETTERS A S D F G H J K L
FIGURES ↑ ↗ → ↘ ↙ ← ↖

ROW 3
LETTERS Z X C V B N M
FIGURES + / O @ # % -

Assuming you have a standard communications keyboard, the sample aviation weather report used above would look like this on your printer:

MKC S 15;M25? 4RK 132/58/56/ 1807/993/VR32/ 55 RBO5?V,

5 Unit-Start, Stop, Printing RTTY Code.

Code Pattern (Total Number of Pulses per Char)	Nominal Speeds and Pulse Lengths							Recv'g Shaft Speed in R.P.M.	Character in Milli-Seconds
	Transmitting Speeds					Pulse Length in Milliseconds			
	Operations per Minute	Average Words per Minute	Bauds (Bits per Second)	Freq. (Cycles per Second)	Chars per Second	Start and 5-Code Pulses	Stop or Rest Pulse		
7.42	368*	61.33	45.45	22.75	6	22	31	420.	163.
7.	390*	65.	45.45	22.75	6.5	22	22	420.	154
7.5	400**	66.67	50.	25.	6.6	20	30	461.5	150
7.42	404**	67.33	50.	25.	6.7	20	28.4	461.7	148.4
7.	428.6	71.43	50.	25.	7.1	20	20	461.5	140.
7.42	460.	76.67	56.88	28.45	7.7	17.57	25	525.7	130.43
7.42	600.	100.	74.2	37.1	10.	13.47	19.18	685.	100.
7.	636.	106.	74.2	37.1	10.6	13.47	13.47	685.	94.3
7.5	600.	100.	75.	37.1	10.	13.33	20.	691.95	100.
7.42	1200.	200.	148.4	74.2	20.	6.7	10.	635.8	45.
7.5	1440.	240.	180.	90.	24.	5.5	8.25		41.25
7.	3856.8	642.8	450.	225.	64.2				

* These two codes are compatible
** These three codes are compatible
*** These three codes are compatible

COURTESY - VE2HY, Dick Bromwich
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Commercial RTTY Stations--

Thanks to W6BPV we are happy to publish another list of commercial RTTY stations. These lists have always been popular but as the frequencies change it is difficult to keep a list up to date. We notice that many of the stations are using narrow shift (Broad Minded) so it will pay to have a converter that takes advantage of narrow shift. On stations using 67 wpm it often helps to adjust the range on your printer for better print. This list was compiled by W6BPV within the last three months and should be fairly accurate.

Station Calls	Location	Approx. Freq.	Shift	Speeds	Services
JAE-27	Tokyo	7330	600	67	Japan A.P.
WFK-67					
WFG-83	Unk	2420Khz	400	60	UPI
WBR-70	Federal Aviation	3235			Weather.2030 TO 1400 Z
WBR-70	Admin. Miami	5937	400	60	Contus
		8130	400	60	Contus
		10950	400	60	Contus
		14395	400	60	Contus
		16440	400	60	1155 to 0500Z
CML-78	SFO/NY	-----	120	60	Press Wireless
CGR-2	-----	14150	---	--	Unknown
HMR-68	K.C.N.A.	16400	120	60	Pyongyang
HMR-68	K.C.N.A.	13580	120	60	Pyongyang
DL-31R	Munich	14500 plus	120	60	Unk. testing ry
BCP-21	Unknown	7950 O	170	70	Unknown
KWX-51	Unknown	18000	850	67	Unknown
WFA-67					
WFE-20					
WFD-59	WFD-24				
WNC-50	WFG-42				
WNC-38	N.Y.	18750	850	60	UPI Press.
KMG-22	Unknown	appx 50510	120	60	Unknown
DZP-22	New York	20250	120	76	Assd. Press N.Y.
WFE-40	WFD-34				
WFG-43	WFA-36				
WFP-79	New York	20258	600	76	Assd. Press
ISX-56		15659			
ISX-57		15724			
ISX-21		10125			
WMM-41	Florida	11643	120	67	Radio Tampa.
OAB-22	France	10560	120	67	A.N.P. Paris.
WFA-67					
WFD-59	WFE-20				
WFG-42	WFD-24				
WNC-50	WFD-24				
WNC-38	New York	18750	850	60	United Press
WNC-74					
WNC-37	New York	14720	600	67	Unknown
CML-47	RCC Habana	16270	170	60	to ITT N.Y.
WFF-59					
WFA-67	WFG-42				
WFE-20	New York	14700	850	60	UPI Press
VEX	Canada	14335	120	60	RY RY
UNKN.	Paris	10350 plus	900	67	France, Reuter Pr
HKA-224	Bogota	21250	120	67	Colombia

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VARIABLE RTTY SPEEDS ?

Last month we mentioned that the only comments we had received had been against the petition to allow faster speeds on amateur RTTY and published a typical letter. This month we are glad to publish a letter in favor of the petition. We think both of these letters express most of the reasons for or against and leave it to the readers to decide for themselves. During the last directors meeting of the ARRL it was voted to support the petition. The directors are always open to discussion, however, and as it may be some time before the petition is brought up for comments by the FCC we could suggest that anyone having decided views either way discuss the matter with their director.

The premise that allowing speeds other than 60 wpm would be a hardship on the beginner, or obsolete present equipment, or create an exclusive group, is valid only from a very limited point of view. Note that I emphasized "allowing" speeds other than 60 wpm. The majority of dissenting comments I have read implies that if the petition is allowed, then everyone should, and many would, go to 75 or 100 wpm and thus cause great confusion and/or hardship. I doubt that more than 20 percent of the RTTY operators in the United States will even try to copy speeds higher than 60 wpm in the near future and probably less than 1 percent initially will take advantage of the proposed changes. For example, the Canadian RTTY regulations have permitted use of speeds between 60 and 100 wpm for some time. To my knowledge there have been no problems nor mass rush to the higher speeds.

Therefore, the proposed change in regulations is hardly likely to cause the beginner any hardship. He is still going to have plenty of stations to contact on 60-wpm speed. Granted, he might be slightly confused should he run across some 100-wpm amateur signal but no more so than hearing a 67-wpm foreign press station or 200-wpm FSK CW signal which, unfortunately, also inhabit our amateur bands. But if he waits ten minutes or less he will hear the CW identification and realize it is an amateur signal and not an interloper.

As to the creation of an "exclusive" group, perhaps to a certain extent a definite exclusive group would exist. But please remember that these "exclusive"

groups already abound in the amateur bands in many forms. The high speed CW operators, some of whom regularly converse or handle traffic at speeds well in excess of 30 wpm, are most assuredly an "exclusive" group. Few beginners can understand what these operators are saying. ATV on the UHF bands and Slow-Scan TV on the HF bands also form "exclusive" groups and it will cost you money and time to be able to monitor or converse in these modes. At this point it should be noted that few if any of the aforementioned "exclusive" groups are "closed" and will gladly welcome newcomers who acquire the necessary skills and/or equipment. This same welcome to newcomers has always been extended by RTTY operators and I am sure that it will be the same in any RTTY group that chooses to operate at the higher speeds.

Consider for a moment the several advantages of narrow shift RTTY operation. Consider also the fate that this excellent proposal might have suffered some years back if a group of progressive amateur RTTY enthusiasts had been denied their petition for a change in regulations to permit any shift of less than 900 hertz. Many of the objections now voiced against permitting higher speeds of operation could have been (and were!) raised against the change in shift width regulations. The same objections were also raised during the infancy of Single Sideband operation in the amateur bands.

Technical innovation, the innate urge to try something new, the frustration of trying to adapt "obsolete" commercial gear to ham use, the joy of finally making the blasted piece of junk work -- this is a major part of amateur radio applicable to 100 wpm RTTY operation as well as 60 wpm operation. Why tie the hands of the adventuresome with the red tape of "special permission" when a simple rule change can implement the spirit of the service. It may not result in a contribution to "commercial" state of the art, but it would be a contribution to "amateur" state of the art.

Gentlemen - ^{stuffs} in this technological age is in reality retrogression. Let us foster positive thinking by promoting and encouraging new ideas and methods. Let us accept this new challenge. Who knows, it may not be at all painful!

Thank you, and 73,
C.A. (Cole) Ellsworth K50LU
P.O. Box 4260 El Paso, Texas 79914

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GE to Build Teleprinters

General Electric Co., which boasts of being the world leader in computer time-sharing, brings a nice piece of business to Teletype Corp. and other makers of communications terminals whenever it signs up new customers.

The terminals are needed to reach the central computer. Now GE has high hopes of bringing that business -- and a lot more -- back home. The company has just announced that its Specialty Controls, Div. in Waynesboro, Va., is manufacturing data communications terminals.

Called TermiNet 300, the GE terminal is intended for straight communications, where most of the market lies, as well as for tying into a computer. It is now estimated that 95% of the communications terminals being used in the U.S. are produced by Teletype Corp., a subsidiary of Western Electric Co., which is the manufacturing arm of the Bell System.

New ground. The TermiNet is similar to the standard Teletype machine in several ways. But GE claims its device can operate faster and quieter and is more reliable. Weighing in at 65 lb. and roughly the size of an electric typewriter, the TermiNet is also more portable. It can be moved around in an office and connected to any telephone when used with an acoustic coupler.

Key to the terminal's compact design is the use of large-scale integrated (LSI) circuits. It's one of the first commercial products to use the silicon chips that contain hundreds of tiny logic devices. GE's terminal, which requires quite a bit of memory and synchronization to make it work, is built around 20 such LSI chips, the largest about 1/8 inch square.

TermiNet prints symbols on impact, which allows for the original and several carbon copies of transmitted data to be instantly available. However, GE says its printer works at speeds up to 300 words per minute, as against speeds of 100 or 150 words common to most Teletypes.

To operate this rapidly, GE uses a continuous motion printer, which has no moving carriage. A horizontal row of as many as 118 tiny hammers is stretched across the width of the page. Whirring around the bank of hammers are the type characters, 94 in number -- enough for upper and lower case letters, numbers, and various other symbols.

When the operator depresses a letter key, the hammer drives the letter against the paper through an inked ribbon. Then, when another key is depressed, the adjoining hammer drives the appropriate character against the paper one space to the right. And so it goes. In tabulating and other uses where there are blanks, the printer skips, say, from hammer 10 to hammer 30, so no time is lost in waiting for spacing.

TermiNet also can be equipped with tape-punching equipment, allowing an operator to type data but delay its transmission, either to save communication time or to check the input before sending. As a remote computer terminal, the TermiNet can be adjusted to send tape at speeds up to 1,200 words per minute, the maximum that voice-grade telephone lines can handle.

...

One Answer to 'WHY?'

RTTY JOURNAL
P.O. Box 837
Royal Oak, Michigan 48068

Dear Dusty:

In the June 1969 issue, Jerry Hall, K1PLP, mentions a puzzle in the lowering of the resonant frequency of a parallel tuned circuit as the audio voltage across the circuit is increased.

The inductance of a coil depends on the permeability of the core material. Many telephone-type toroids have cores consisting of very fine silicon steel wire. The permeability of silicon steel varies with alternating flux density so that as the flux increases so does the permeability and consequently the inductance too. With the greater inductance the resonant frequency becomes lower. This is true even though the core may not be magnetized with a DC current.

Likewise, permeability of magnetic materials is a function of temperature probably accounting for Jerry's observations in this regard too.

Sincerely,
Edward W. Sanders
W2VM - NØRQH

70 Maxwell Ave.
Geneva, New York 14456

...

RTTY JOURNAL

VHF RTTY NEWS

RON GUENTZLER, W8BBB Editor
Route 1, Box 30
Ada, Ohio 45810



STATION ACTIVITY

On about 1969 APR 1 we received three letters giving VHF RTTY operating information. Seems that appeals for information bring response, but how about operating news without campaigning? We do appreciate receiving the information given below and encourage news of operation in other areas as well as "updates" as new stations come on.

Tom Warren, W2CVR, sends the following information from Schenectady, NY: "Some of us who are active with the two-meter repeaters, WB2NNZ and K2AE, developed an interest in AFSK during the fall of last year. At present there are five stations on the air, and probably as many more are interested and are in the process of getting on. One station is working auto-start, and the rest of us will be building up the necessary circuitry when we get the time. We are presently using 146.76 Mc AFSK-FM for operation. We expect to stay on "76" until we get a lot more RTTY activity and a lot more voice activity on the channel. The five stations are

RAY K2HYD
JOHN K2EJL
JACK K2HUX
DON W2EWY
TOM W2CVR

Frank J. Wisniewski, Jr., W2LXC, Sec. for TU-BORO Radio Club, Inc., Beechhurst, LI, NY made the following comments:

"I find it hard to believe the remarks made in the April issue regarding the freqs. in use etc. and the fact that you cannot obtain news from the N.Y.C. area." Honest, you are the first in that area to supply operating information.

Frank continues: "This station is operating on the crystal frequency of 145.62000, with autostart operation, 24 hours a day. This freq. is the club freq. for the TU-BORO Radio Club Inc., and has besides this station (W2LXC) the possibility of two more going on auto soon. The stations active on the freq. at present,

are W2LXC / WA2MXB / WB2IPO / WA2PMW (can print, not transmit) WA2SOX / WA2PWP / W2OWS, besides these club members, there are several other stations that check into the group, as an example, W2NCA / WB2SUQ / W2LKS / WB2NVJ, and there are many more who are worked from time to time, but not as active as those mentioned.

"As stated above, this station is on auto-start 24 hours a day, the freq. is 145.620005, so will welcome any msgs from N.Y.C. hams."

Sam Lapham, W8MGA/AF8MGA, Middletown, OH reported the following: "Perhaps it is worth note that Ohio Airforce MARS has two 2-meter RATT nets in operation. In southwest Ohio we have an AM RATT net meeting at 0001Z Tuesdays on 143.46 MHz. Usual participation is 6-10 stations in Hamilton Middletown West Carrollton Dayton Springfield Piqua and New Carlisle. Some of these stations also meet nightly at 0300Z on same frequency for exchange of traffic that any station might have garnered from other nets, MARS or amateur. Some of our stations are autostart.

"The other AF MARS 2-meter net is centered on Canton Ohio. K8AHI/AFA8AHI could supply information on that net operation.

"Occasionally some of us in SW Ohio get on amateur frequencies with RTTY but the 2 meter activity is pretty low. . .

"RATT operation here on VHF is with a 15 or 19 to Twincity AFSK to a TGQ transmitter running about 80 watts AM into a 16 element colinear antenna. . ."

We thank all three of the authors of those letters for taking the time to communicate their activity. Hopefully, this will inspire others to get on and make contacts in the N.Y.C., Schenectady, and Middletown areas.

DAYTON

We had the usual very enjoyable and educational experience at the Dayton Hamvention in April. Seems that the majority

of "the crew" was present. In the RTTY Forum, Keith Peterson, W8SDZ, and Tom Lamb, K8ERV gave talks on solid state receiving converters (TUs) that they are developing. Apparently the development is quite slow because it is being done with great care. When the combined effort is unveiled it should be excellent. Guess its like an elephant - it takes a long time in coming, but when it arrives, its a whopper!

The other portion of the forums that impressed us was the talk given by Ed Tilton, W1HDQ, in the VHF Forum. He gave a history of FM and amateur use of FM. We have been in the VHF FM business for over 10 years now and thought we had a fairly good idea of the development of FM for amateur use, but found while listening to Ed that FM goes back a long way. Ed indicated that QST has fallen down in the case of FM because they have always been too early with the development; i.e., the articles in QST appeared before hams were really ready for it. He also indicated that the lack of receivers has been a problem.

Well, that's it for this "month". Keep those cards and letters coming, folks!

--73 ES CUL, RG

RESULTS -

BA.R.T.G. DX Contest.

W2RUI	1.	64800	25. VE6MM	14952
G3MWI	2.	60320	26. DJ8BT	13860
I1KPK	3.	59136	27. HB9P	13022
SM4CMG	4.	49680	28. WA8IQZ	12992
VE7UBC	5.	45252	29. WB6JSY	12974
WA6WGL	6.	44814	30. W6FFY	11676
W9HHX	7.	41664	31. G3IYG	11570
VE2HL	8.	34216	32. KH6GLU	11070
I1CQD	9.	31326	33. SM0KV	8944
DL5PQ	10.	30636	34. W6AEE	8808
W5VJP	11.	29964	35. ZL2ALW	8016
K2KVF	12.	29856	36. OZ6OB	7920
VK3NR	13.	29568	37. W0HAH	7680
I1RRE	14.	28350	38. I1LCF	7110
XE1YJ	15.	28260	39. W2HAJ	6696
I1KFL	16.	22952	40. W9CTX	6462
SM5CLW	17.	22640	41. VO1EE	5440
W2DIZ	18.	20824	42. ZL2AFE/	5072
I1EVK	19.	19532	43. F3PI	4992
W8CAT	20.	18942	44. HA5FE	3618
K4VDM	21.	17918	45. WA6TLA	3348
PA0GKO	22.	17884	46. DJ9XB	2150
VE3RTT	23.	17490	47. I1JOE	1460
K1GYF	24.	17366		

Check Logs were also received from:- DL3NO, G8CDW and ON4BX

RTTY JOURNAL

Modification for Punching Tape --

Here is a small modification that may be of interest to those punching tape. It permits having the tape stop automatically whenever information from the keyboard is to be inserted and then having the tape start again when needed.

A microswitch is mounted so that it is closed anytime the "Signal Bell Hammer" is moved to ring the bell. This switch operates a relay that has several contact points on it. One set of contacts are used to hold the relay energized once it has been activated by the Bell Hammer Switch. This would be normal open set of contacts. A normally closed set of contacts are in series with the clutch circuit of the TD. Now then punching a tape that I want to stop in a predetermined position, I simply print upper case "S" or "Bell" and when the tape in the TD reaches this point it will automatically stop the TD. This is handy in a contest as the inserted data changes with each contact while the general format remains the same. It is also nice in sending RTTY QSL cards as it is easy to program the tape to stop for insertion of date-report-time etc. Once the TD has been stopped by the relay you can print anything you wish from the keyboard then have the TD start again by simply pushing a normally closed push button switch that is in series with the coil of the relay that caused the TD to stop.

That's all, and the thing works like a charm. If you have any questions, I will try to answer them.

It saddens us to report that Floyd Zeil, W2RUI, the winner of the last BARTG contest and a high placer in most DX contests died of a heart attack on June 4th.

Contests just won't be the same without the familiar, strong CQ de "Skipper" W2RUI signal from start to finish of every contest.

RTTY-DX

JOHN POSSEHL - W3KV
Box 73 Blue Bell, Pa., 19422



A combination of the flu-bug in Pennsylvania and the need to get the magazine to the printer a little early because we are leaving on a business trip for a few days caused us to miss John's DX column.

From listening on the band, DX has been few and far between anyway the past month. Propagation has been good at times but the summer lull must be keeping many stations from being active. The September issue will start off another DX season and I am sure that John will have all the latest news available for that issue.

A few notes from subscribers -

A W8 will be stationed in Monaco for some time and will get on RTTY if he can arrange for a printer and TU to take with him. He has everything else ready to go.

We have a subscriber in British Guiana, hopefully he can get on as a first on RTTY from that country.

Noel, VK3NR says conditions have been poor from that area but the boys are still on and waiting for chances to get going.

Ven, VU2KV, is still waiting a new antenna to be on with a good signal. On his recent trip to England he brought home tape equipment and promises to be active soon.

The CARTG "medallion Sweepstakes" on October 4-6 will start off the DX season. With the excellent management of Sid and his crew this promises to be a top contest again. Start now to tell all DX stations to make plans for a big weekend. Full details will be in the next issue.

The '3 Blind Mice' of the Ratty Journal---



Ron Dusty John

Taken in Dayton by K8QLD

RTTY JOURNAL

TELEPRINTER GEAR SPEED IDENTIFICATION

For those wishing to identify the operating speed of their equipment, or alter the speed thereof, the following is submitted:

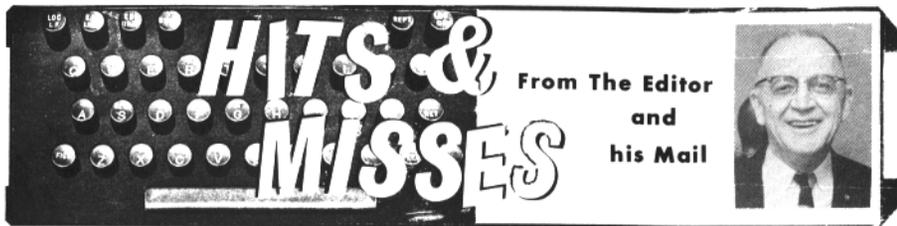
TELETYPE CORPORATION

Mod. 15 and 19 Left hand pinion (drive)			Model 14 TD Left hand pinion		
74912	7T 60 @	1800 gear	80164	6T 40 @	1800
74913	30T 60	1800	80163	45T 40	1800
74505	7T 60	2100	87371	6T 50	1800
74151	35T 60	2100	135062	34T 50	1800 metal clutch
84018	7T 60	1500	123717	8T 50	2100
84018	25T 60	1500	135069	53T 50	2100 metal clutch
91286	7T 75	1800	80166	9T 60	1800
91287	24T 75	1800	80165	44T 60	1800
84105	8T 75	2100	135036	44T 60	1800 metal clutch
114460	?T 66	1800	87222	44T 60	1800 TT26 no clutch
114461	?T 66	1800	77034	7T 60	2100
			77036	40T 60	2100
			135068	40T 60	2100 metal clutch
			84357	40T 60	2100 TT26 no clutch
			91131	13T 60	1500
			91132	53T 60	1500
78510	7T 60	1800	135067	53T 60	1500 metal clutch
78509	30T 60	1800	136582	13T 65	1800
71974	7T 60	2100	136583	60T 65	1800 metal clutch
73106	35T 60	2100	116767	11T 66	1800
84064	7T 60	1500	135065	50T 66	1800 metal clutch
84065	25T 60	1500	123711	10T 66	2100
94267	7T 75	1800	135065	53T 66	2100 metal clutch
88945	24T 75	1800	91285	12T 75	1800
7082	8T 75	2100	136525	47T 75	1800
6991	32T 75	2100	136525	47T 75	1800 metal clutch
110876	16T100	1800	91283	7T 75	2100
110877	42T100	1800	135064	32T 75	2100 metal clutch
110881	14T100	2100	110883	12T100	1800
110882	43T100	2100	135035	36T100	1800 metal clutch
			77025	10T100	2100
			135061	35T100	2100 metal clutch
151129	48T	Steel intermed. gear	104579	7T 60	1800 TT25 rcvg TD
151130	96T 60		104580	30T 60	1800 TT25 rcvg TD
151131	96T 60		104659	9T 60	2100 TT25 rcvg TD
148085	14T 60	ASR	104558	45T 60	2100 TT25 rcvg TD
159278	14T 60	NYLON SET			
159279	96T 60	NYLON SET			
151132	17T 75	FIBER SET			
151133	93T 75	FIBER SET			
159281	17T 75	NYLON SET			
159282	93T 75	NYLON SET			
158083	17T 75	ASR			
151134	20T100	FIBER SET			
151135	84T100	FIBER SET			
158181	20T100	ASR			
159284	20T100	NYLON SET			
159285	84T100	NYLON SET			

(TT25 is rcvg TD, turns at rcvg speed)
 (TT26 dual-chan. trans. TD, no clutch)

MOTORS: 14-15-19 generally 1800 sync. or 2100 gov. (set by "87.6 vps" fork). Note 1500 & 1800 gov., and dual-speed gov. may occasionally be found.

28: both sync. & gov. are 3600 rpm. gov. set by 120 vps. fork.



HITS & MISSES

From The Editor
and
his Mail



The writers association with ham radio now goes back further than we like to admit. We do admit however that we have never been much of a technical whiz. QST and the handbook were our bible and anything built was verbatim from the book. In those days things were fairly simple and they usually worked, at least after a fashion, in fact there wasn't much to compare with.

However the technically inclined were making progress and many of the firsts in radio were developed by amateurs. Lambs SS receiver was a milestone for new development. Experiments in the higher frequencies were largely conducted by amateurs with ingenious haywired equipment. Commercial radio was largely for communication and the amateurs were pioneers in experimenting in new ideas.

Taint so anymore. As we listened and watched the last Apollo moon flight we couldn't help but think how far radio has gone in the past 25 years. Today's technicians have infinitely more knowledge, more equipment for research, computers, millions of dollars for the best brains in the world to work with. To us this means that all amateurs can do is hope to copy and use some of the new ideas and equipment as it is available for their own use.

We don't believe the companies catering to amateurs have kept pace with new developments either. About 20 years ago Collins came out with equipment that was the ultimate in stability and accuracy. Since that time other manufacturers have been able to come close to matching it, the power available from a small box has grown but at the expense of larger fans and more breakdowns. And this is merely to match equipment that is already 20 years old. Nothing really new or exciting has appeared in ham gear for a long time. The new "Signal One" transceiver may be an exception. Completely solid state except for a final tube, latest circuits and with a digital counter instead of the usual dial it sounds

like a piece of equipment designed with some new ideas. If and when it gets on the market it may set the pattern for more up to date amateur equipment. In the mean time we will probably have more of the same old equipment with new numbers and more watts in a smaller box.

What is this all about in a RTTY magazine? I guess two reasons the first is that RTTY is still a pioneer area for many of the new materials available now. The other is that it fills up some space while you readers are developing some new ideas for us to publish.

For some time we have wanted to try a contest similar to the ARRL Sweepstakes, with multipliers for ARRL divisions and Canadian provinces.... Our first idea was to ask the ARRL if they could include a division for KTTY in their annual contest held in November. It is under advisement by the contest committee and we hope to have the answer soon.

The original Sweepstakes promoted by the Southern California RTTY Society was a similar affair but as dx stations appeared it changed into the DX Sweepstakes which has been run so capably for the CARTG the past several years. Now we feel that a contest for using states as multipliers could create a lot of interest especially on lower frequencies as well as aiding those looking for a WAS award.

Speaking of the CARTG DX Sweepstakes, which will be held on October 4-6th weekend, a new idea is being tried - scoring of logs by a computer. A special form of log will be used. Full details will be in the September issue but mark the calendar now for that week end.

This is our combined July-August issue. Next issue will be mailed for delivery about the 1st of September.

RTTY JOURNAL

Simple- Inexpensive Scope for RTTY.

Although most RTTY operators have a scope the following adaptation of W6NRM scope is compact, simple and lends itself well for being built in the demodulator itself. The TU illustrated in this issue has one. The unit diagram is self explanatory and drives the 902ACRT very nicely.

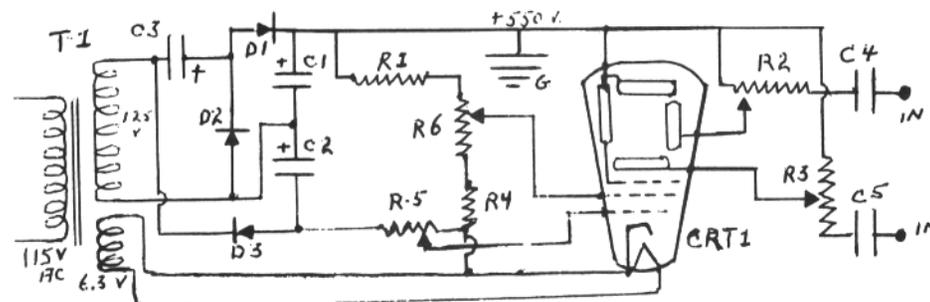
If you have a lot of money you can use a Millen 80072 scope bezel. However if you are like most hams go to your nearest plumbing supply house and ask for a 2" by 1 1/2" reducing spud washer. It will cost about 35¢ and makes a very attractive scope bezel. One word of caution - if no shield is used around the scope be sure to keep all transformers and magnetic devices as far away as possible. Cashion Electronics can also furnish a printed board for this scope if you want to keep everything uniform.

The 902A Cathode ray tube (CRT) is available at surplus. Two sources we know of are Marty's Surplus, 1236 Market St.,

San Francisco, Cal. and from Ralph Leland, W8DLT, 118 Cambridge Blvd., Pleasant Ridge, Mich. 48069. The prices we were quoted was \$3.50 postpaid.

- T1 --115 to 125v 15ma. & 6.3 v@.6A Stancor PS8415
- C1-2-3 -- 1Mfd 450V electrolytic
- C4-5 -- .02 600 vt. Mylar capacitor
- D1-2-3 -- Motorola Surmetic Diode - 1N4005
- R1 --360K 1/2 watt carbon.
- R2-3 --1 meg. height and width pot. MalloryMTC 16L4
- R4 --120K 1/2 w. carbon.
- R5 --100K Intensity pot. Mallory MTC15L4
- R6 --500K Focus pot. Mallory MTC55L4
- CRT-1 Cathode Ray Tube 902A- (see text)
- Scope Shield- Millen 80042
- Scope Bezel - Millen 80072 (see text.)

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BACK ISSUES — CARTG DX Sweepstakes Oct. 4-5-6

ONLY back issues available are July through December 1966, February 1968 to date. The TT/L-2 Reprint is also available. Single copies are 30¢ each. RTTY JOURNAL Binders are available at \$2.50 pp in US, Canada or Mexico. \$3.50 elsewhere.

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BROAD MINDED ? -

USE NARROW SHIFT

...

RTTY JOURNAL

RTTY JOURNAL

P.O. Box 837 Royal Oak, Mich. 48068

"Dusty" Dunn — WBCQ

Editor & Publisher

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NO GLARE WINDOWS for Model 15 & 19 Printers. Cadinum plated & Gold Iridite finish. \$12.50 P.P. Check or M.O. Bud WA6UEF, 17114 Sunderland Dr., Granada Hills, Calif. 91344.

RTTY GEAR For Sale; List Issued monthly. 88 or 44 mh toroids - 5 for \$2.50 postpaid. Elliott Buchanan and Associates. 1067 Mandana Blvd., Oakland, Calif. 94610

TYPEWRITER RIBBON REINKER, Hand operated model now only \$3.00. K575 or K764 Ink available at all National Cash Register Co. stores at 75¢ per tube. Walter Nettles W7ARS-8355 Tanque Verde Rd. Tucson, Ariz. 85715.

SELL; BOONTON FM signal Generator, model 202-D; H-P Audio Osc model 202-B, 0.5 Hz to 60 KHz. Both excellent with manuals \$125. ea. Shipping prepaid. Page paper \$7.50 case. WB2PLY, Box 207, Princeton Jct., N.J. -08550

88 mh TOROIDS, 5/\$1/75 pp. W.E. Carrier crystal filters, 64kHz from CH MODEM. \$10. ea. pp. W9FTE, 8800 W. Ciovernook Ct., Milwaukee, Wisc. 53224

TELETYPE SYNCHRONOUS Motor: complete with fan and base checked. \$8.00 ea. Keyboard for model 15, with all keytops, springs and gear excellent \$5.00 ea. Keyboard for model 15 with (here is) attachment on keyboard to set up identification, complete with all keytops, spring and gears excellent. \$15.00. 4 X 150 A tube - unused \$14.50 ea. Automatic - Teletypewriter LO-15, later version of model 15 with (here is) attachment on keyboard, white keys, greenish color cover, very quiet and much smoother than 15 model. Excellent operating condition \$80.00 ea. With steel table to match with electric box add \$15. extra. Fax Trans - Receiver; combination, desk model, 5 inch drum, 115 vts 60 cycle single phase. 25 amps, excellent \$12.00 ea. Atlantic Surplus, 300 7th St., Brooklyn, N.Y. 11215

WANTED MODEL 28KSR printer. H.V. Smith, W2LFL, 1757 Seaman Dr. Merrick, LI. N.Y. 11566 Phone area 516-378-2139

WILL TRADE two Model 15 teletype machines in mint condition, complete with tables - want terminal unit TT/L-2 or equivalent. Pete Feges, WN8DPH, 14625 Arlington, Allen Park, Mich. 48101

TTL/2 PRINTED CIRCUIT BOARD, \$6.00, newly designed input filter/discriminator board for two shift frequencies, same size as TTL/2 board (6 x 9), \$6.00. Also, smaller individual input filter or discriminator boards, about 2 x 6 each \$2.00. All postpaid in USA. James R. Salter, K5BQA, 11040 Creekmore, Dallas, Texas, 75218.

SELL: BERKELEY DIGITAL Counter Model 554B in good operating condition, with some scratches on panel. Cabinet mounted with book. Counts frequency to 100 khz in 5 columnar displays. Crystal time base with 10, 1, and 0.1 second gate times. \$100 cash FOB El Paso or trade for working model 28 typing unit (LP). Collins 75A-4 500 hertz mechanical filter \$35. PP. Both items money back guarantee. Cole Ellsworth K50LU 915-755-4376. P.O. Box 4260 El Paso 79914.

SELL: 32V-3 with new tubes and manual, \$125, excellent. Sell TT/L-2, built in scope, \$175. Need base with keyboard for 28 KSR. W4AIS, 7 Artillery Rd., Taylors, S.C. 29687

TELETYPE PARTS - All models, relays, power supplies, hardware, motors, mods. etc. 2 M14 tape printers series governed 60-75 wpm by operating switch. Charles Wall, 858 W. 2nd St. Lansdale, Pa. 19446

MAINLINE TT/L-2 FSK demodulator. Now you can have the TT/L-2 custom built with your choice of filters completely wired and tested with silkscreened front panel (see May QST) suitable for rack mounting, available with/without 2 inch scope indicator on same chassis. Also available ST-3 / AK-1 completely wired and tested ready to go. Mainline TT/L-2 filters wired and tested. J-J Electronics, Communication Specialist, Canterbury, Conn. 06331

CUSTOM ENGRAVING of your panels will make your home brew gear look like factory built equipment. We can engrave panels to your specifications. We also engrave plastics, brass and name plates of all kinds. Prompt service on all orders. NAME-O-PLATE Co. 20350 LaCrosse Ave., Southfield, Mich. 48075, Tele. 353-7926

SELL OR SWAP - Collins 75A4 Receiver-Mint condition-Serial #5777. Complete with 3 filters: 2.1 KC (SSB), 1.5 KC (850 cycle FSK), .5 KC (NFSK). Price \$350.00, or will consider swap of this receiver, plus a Model 28 KSR printer, complete in perfect operating condition, for a Model 28 ASR in good operating condition, for a Model 28 ASR in good operating condition. E.H. Swanson, W2PEE, 11 Beaver Drive, Locust Valley, New York 11560 - Days (516) 694-1414, Evenings (516) 676-7676.

WANTED- TUBES Type 4-400A, sockets and chimeys. Inductor B & W type 850A. Filament transformer, 5 vts-30 amps. B & W cnoke FC-30A. Five or six foot rack-cabinet with back door, lock and casters. Orville Magoon, 1941 Oakdell Dr., Menlo Park, Calif. 94025

Additional Classified on Next Page

Additional Classified on Page 14

SALE* FRXD-10 or 20 combo (typing reperforator and trns. - dist) with synchronous motor. This is an exceptional flexible unit combining typing reperforator, a reader and distributor on one base. All these units can be used separately or together. Used with a model 15 page printer it will provide all the functions of a model 19 with much more flexibility. See Feb. 1964 CQ for schematic and additional information. Excellent condition, no cover, \$32.00 ea. With out cover or retainer \$22.00 ea. KEYBOARD for model 15 with Here-Is answer back attachments for identification. 21 characters. This mechanism is an electromechanical device which allows the identity of the called station to be transmitted automatically to the originating station upon the receipt of FIGS upper case "d" from the signal line. Like new \$12. Send for free catalog of teletype parts and equipment. Atlantic Surplus Sales, 300 7th St., Brooklyn, N.Y. 11215

TOROIDS, 88 or 44mhz., center-typed, never potted, 5/\$2.00 PGSTPAID. 11/16" oiled reperforator tape \$3./box/10. Page printer page \$6./box/12. F.C.B. Polar relays \$3. Sync motors \$10. Gears for most machines \$6./set. 60 speed gears for 14TD limited quantity \$7.50/set. Model 32KSR complete page printer for 60 or 100 speed, newest type in excellent condition \$150. Model 15 page printer \$65. FRXD typing reperforator and TD combo \$25. DEX-fax facimile transceivers #6500 complete \$20. or 2/\$35. Drake R4 receiver \$225. Drake 2B&2BQ \$175. Gonset Communicator IV Two-meters \$160. WANTED: Ham-Mrotator, 100KC crystal for H.P. counter (oven-type). Stamp for list. Van W2DLT 302R Passaic Avenue. Stirling, N.J. 07980.

Mite TT-299 Teletype Machine. Weight 36 pounds, condition like new, 4 speeds gears included, changes speed in 15 seconds, uses standard paper and ribbon, keyboard slides into machine for easy portability, small good looking table top installation. Has non-overline, copy lights, keyboard lights, built in loop supply comes with all manuals. Will ship anywhere in U.S. upon receipt of \$350., or trade for Model 28 KSR in excellent condition. Bill Sherwood W6FBY, area code 213-272-9400. 716 N. Rodeo Drive, Beverly Hills, Cal. 90210.

Heath HW-16 Transceiver, like new, set up for 80, 40, 20 Meters. Xtal control receive (xtals included) for 3637.5 KC, 3612.5 KC and 14.075 MC. 500 selectivity excellent for 170 hz autostart, including all modification notes and inst. book. \$125.00 or use as part payment on trade for Collins 75-S-1 or SBA 301 or 101. Bill Sherwood, W6FBY 213-2729400, 716 N. Rodeo Drive, Beverly Hills, Cal. 90210.

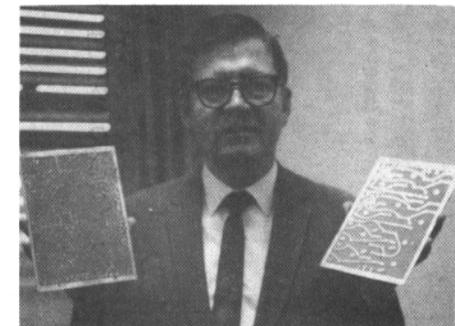
WANTED TELETYPE PART #92635 (overriding clutch) and #90463 (function arm) for model 25. Keith Petersen 1418 Genesse, Royal Oak, Michigan 48073.

FOR SALE: TDA-2 Distortion analyser with manual \$50. 15 type Sequential Selector \$10. Four units from AN/FRT 6. 0-9 stabilized master VFC. 2-4.5 mc (contains 2 Collins PTOs and 31 tubes). 0-9A crystal osc. with 10 channel oven. KY-45 FSK keyer, shift variable 10 to 2000 cps. Equalized for both FSK and FAX - 12 tubes. PP-454A power supply for above. With Manual \$75.00. Jennings U250-15kv \$25.00. WDLT. Ralph Leland, 1:8 Cambridge Blvd., Pleasant Ridge, Mich. 48069.

SALE8 RELAYS HG1004 Clare mercury-wetted contact relay, unused \$5. ea. used excellent \$3.25 ea. HG4C-HG1003 mercury-wetted relay Clare, used, excellent \$3.60 ea. HGP1017 Clare mercury wetted relay, used excellent \$4.00 ea. Western Electric 275D relay, used, excellent \$1.50 ea. Clare SK5014 relay, new \$2.00 ea. Send for our teletype catalog. Atlantic Surplus Sales, 300 7th St. Brooklyn, N.Y. 11215

SET OF FOUR-VOLUME directory to hundreds of surplus military, commercial, test sets, prepared for USAF, 1,500 pages, \$5.50 postpaid; also list free of RTTY gear. G. White, 5716 N. King's Highway, Alexandria, Virginia, 22303.

RTTY RIBBON INK: Intense, highly legible black. Cheaper than replacing ribbons. Is it good? Ask any user. Big 2 ounces only \$1.00. Marvin Cook, WA2RDO. 1992 Windsor Street, Westbury, N.Y. 11590



Probably the most popular item in RTTY has been the TT/L-2 terminal unit. Jim Salter (above) K5BQA who has supplied a great many printed circuit boards for this popular TU now has another board to hold the filters. It is the same size as the circuit board and can be mounted piggy back with spacers for separation. It accommodates filters for both wide and narrow shift and makes for easy assembly using 88mh toroids.