

A RESOURCE FOR SHORTWAVE BROADCAST DXERS MEDIUM WAVE DX PUBLICATIONS

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I began my radio hobby as a 13 year old in the early 1950's when my father gave me a war surplus shortwave radio. Like many of the rest of us, I largely invented the shortwave DXing hobby for myself. After about a year of SWBC DXing, I jumped ship to MW DX because my two closest friends had "invented" that hobby and could not afford anything more than five tube table model MW-only receivers. For the next six years, I was a very active MW DXer, eventually verifying 45 states and over 400 stations on three continents from a location in central Oklahoma! I was also co-host for the 1957 convention of the National Radio Club held in Ponca City, Oklahoma. In 1959, college, marriage, family and the early years of a career all began to intervene and the radio hobby was abandoned for twenty years.

In 1979, for any number of reasons, I decided to rejoin the active DXing community. However, due to my professional interest in Asia, I decided to become active again as a shortwave rather than medium wave DXer. I did so with growing relish and have remained a very active SWBC DX'er since. When I rejoined the hobby of SWBC DX, it was about as I knew it in the early 1950's, though better organized through the efforts of NASWA, DSWCI and others. By 1979, solid state and digital frequency readout equipment was beginning to make things easier, but in most other areas, the hobby was much the same as it had been 20 years earlier -- a truly intriguing avocation.

After a few years of intensive SWBC DX, I contacted the National Radio Club (mostly for nostalgic reasons) about becoming a member. Unfortunately, they sent me the catalogue of reprints from their past bulletins. By reading the titles, I could tell that MW DXing was a radically different affair in 1982 from what it had been in 1959. A revolution - no several revolutions - had taken place in almost every aspect of the hobby. The entire hobby had become more sophisticated by several orders of magnitude!

Furthermore, this new sophistication was readily available to anyone through their Reprint Service. Reading through the titles, it seemed to me that much of the new work from medium wave was very applicable to SWBC DX. Thus began a journey that continues to this day. To date, I have read almost 400 articles written by and for the medium wave hobby community. Of that number, almost half have relevancy to SWBC DXing.

In the intervening years, I discovered that not one but two strong MW clubs exist in North America. The other is International Radio Club of America. IRCA, like NRC has been in the forefront of the generation-long revolution in MW DXing. Eventually, I joined IRCA rather than NRC, because of personal friendships which developed with some of the IRCA leaders.

As we in **fine tuning** began to develop the concept for Proceedings, I felt that one of the largest services I could perform for the SWBC DX community was to help break down the unintended wall that has risen between our hobby and "the medium wavers". It was not a wall built by animosity. It was built by acreation and we are all penalized by its existence.

As an overview, I offer the following "down-home" analysis of developments in the Medium Wave DX revolution in the thirty years since I left it (gee! was it really that long?).

Antennas:

When I was a medium waver, one simply hung up a long random wire and DX'ed away. There have been two major developments: Loops and Beverages. Loops, usually around 3' to 4' diameter air core loops, have been resurrected from the 1920's. Ferrite core loops of considerably smaller dimension and usually highly amplified have also been developed. I believe that the air-core effort was begun by Gordon Nelson, but it has been carried on with great intensity by a whole generation of DXers. BCB literature is full of plans for various sizes and styles of loops, complete with plans for matching homebrew solid state RF amplifiers. Loops are said to be effective "up to about 6 MHz", however very little is commonly known about loop performance on the Tropical Bands. Hopefully, some SWBC DXer will take up the banner and explore this area of research. The second major antenna development is the emergence of wave, or Beverage, antennas as the antenna of choice for serious DXing. Again, a whole host of senior DXers have been involved in adapting this antenna originally developed in the early days of radio. The most notable MW Beveragers appear to have been Gordon Nelson, Bill Bailey, Mark Connelly, Chuck Hutton, and two Canadian DXers, Don Moman and Nick Hall-Patch. The Beverage has been used by a few shortwave DXers, including this author, with great success. It appears that the Beverage can be very effective on 90 meters and reasonably so up to "about 6 MegaHertz." If you want to hear 250 watt Andeans or Indonesians with near studio quality, "go to school" with the medium wavers and then put up a Beverage!

Propagation

The propagation information available to the average BCB DXer outshines that available to us for the higher bands. And again, Gordon Nelson appears to have been the pioneer. If you really want an education in propagation theory, read all of Gordon's reprints from NRC and IRCA. Not all of his work will apply to shortwave, but a very significant amount is relevant. Gordon's pioneering work has been furthered and expanded by a number of other senior DX'ers, most importantly, Father Jack Pejza and in recent years, Randy Seaver. For those of us interested in Tropical Band Propagation and propagation along high-latitude and transpolar routes, the medium wave work is "required reading." A number of other senior DX'ers, especially Bruce Portzer, have done very useful work relating DX conditions to solar and geomagnetic conditions. Much of this work appears relevant to Tropical Band DXing.

Receivers:

Information on modern receiver design and construction is probably most readily available in the amateur radio community. However, in the MW community both Hall-Patch and Worcester have built formidable DX machines and describe their efforts in significant articles.

Information on receiver modification is also most readily available in the medium and long wave communities. It seems that the drive to get the last possible percentile of selectivity, flexibility, and to a certain degree sensitivity, from a receiver is fueled by low frequency devotees who often must DX under almost impossible circumstances.

Receiver reviews, most especially those by Don Moman, are probably of equal quality between the two hobbies. Regretfully, reprints of these reviews are only available through the MW clubs.

Peripheral Equipment:

The medium wave group seem to be rather far in the lead in this area. Mark Connelly has been the most prolific designer/experimenter/author in the area of homebrew antenna tuners and "phasing units." Others have published significant work in this area, as well. Unfortunately, most of these items, by their circuit design, only work well at medium frequencies. Tuners are widely available to the SW hobby, of course. However, "phasing units," currently unavailable to SWBC DXers, combine signals from two antennas, cancelling unwanted QRM and QRN by adding the two signals together out of phase. The use of these units on the crowded lower shortwave bands appears to offer much promise. Many senior medium wavers are convinced that phasing units WILL NOT work above 2 MHz at least. They are totally unaware that W1WSR published two books on the use of phasing units and multiwire Beverages up to 7 MHz, one over a decade ago. This is a perfect example of the artificial walls that have separated us for too long!

Tuning Strategies:

A good deal of material is available from both NRC and IRCA on "how to" DX. Most of this, unfortunately, is applicable only to medium wave. However, Mark Connelly's "Zonal Analysis" approach to DXing appears very applicable as a strategy for SWBC DX.

An Observation:

It may seem as if I find our hobby hopelessly archaic compared with the medium wave crowd. Heck no! But, I do feel that there are a number of significant areas of our hobby that could be strengthened measurably by learning from our lower frequency cousins.

I might add that there are several areas where the medium wavers could benefit from our knowledge and that of our amateur radio colleagues. These include QSLing techniques. Although there is a bit of information available on QSLing techniques in medium wave circles, this area of their hobby appears to be woefully neglected. Further, I have never seen a review or even much mention of "The Secrets of QSLing" by Gerry Dexter in the medium wave press. Although foreign language report forms are available in the medium wave hobby, they are noticeably inferior to those available in shortwave. There also has been no review that I have seen of Dexter's fine "Language Labs" in the medium wave press. Finally, in the area of computer utilization, although a few have applied main frame machines to some of the big problems, the medium wavers seem strangely far behind even us in SW DX in applying the home computer and software revolutions to their hobby.

Notes on the Process:

Since this bibliography task fell to me and since I was an IRCA member, I requested and was granted the privilege of reviewing all of the reprints from IRCA. My purpose was to determine the relevancy of these reprinted articles for those of us involved exclusively in SWBC DX. Some of these articles were already in my possession. Copies of the remainder were loaned to me by IRCA's Phil Bytheway for the purpose of this review.

IRCA currently offers about 400 reprinted articles. Of this group, an even 200 were eliminated by their title/brief catalogue description and were not even read. These included such things as various lists of domestic and foreign medium wave stations, receiver modifications which enhanced only medium wave performance, etc. I read each

of the remaining 183 articles and decided which were relevant to SWBC DXing. Many of these judgements were obvious and easy, but a few were quite difficult. If I was unsure, I chose to err on the side of NOT including the article in this bibliography. This was done to assure SWBC DXers who might wish to purchase these articles from this list that every article in the bibliography was relevant to their interests/needs. However, this conservative approach undoubtedly has caused the elimination of a few articles which would have been of real interest to a few SWBC DXers.

Specifically, since no senior SWBC DXer is known to be DXing regularly on a loop. Therefore, no loop articles are included in this bibliography. I sincerely hope that a few of us SWBC types give this area of research some attention. Further, large "floppy", loops are represented in the bibliography by only one of about six available articles. If you have any interest in exploring the use of loop antennas on the Tropical Bands, write for the full reprint catalogue, from both medium wave clubs.

One other major "gray" area was left out of the list. Articles dealing with "homebrew" equipment fabrication (peripheral equipment and receivers) were left off the list unless the circuits, as shown, were useful in the shortwave spectrum. If you are accomplished enough at circuit design to attempt circuit modification, you should pursue the full lists from IRCA and NRC.... much good work has been done.

Finally, there is one whole area of endeavor included in this bibliography which is rapidly becoming technologically obsolete. Several authors, especially Pejza and Fischer, have done Trojan work detailing methods of hand calculating sunrise/sunset times, Great Circle bearings and distances, grayline targets, and other mathematically definable elements of DXing. Computer programs which perform some of these tasks have been available to the hobby community for some time. Last year, John DeVoldere, ON4UN, the author of the superb "Low Band DXing" (ARRL) made available software which will probably eventually revolutionize the way most of us DX. The software contains programs for all of the above functions and many more besides. DeVoldere, the ham community's pre-eminent Low Bander/Grayliner is offering the software configured for almost any 128 K machine (ARRL for \$20.00). The existence of this software almost caused me to not include the hand calculation articles in the bibliography. However, there are still some SWBC DX'ers who cannot arrange even occasional access to a 128 K machine so the articles are included here.

After my own odyssey through nearly 400 radio articles, I only hope that we can begin to dismantle the accidental walls that seem to separate the three major radio hobbies. There is just no need for any of us to have to re-invent the wheel!

fine tuning hopes to be able to publish a similar bibliography of NRC reprints in the near future. In the meantime, full listings of all reprints from both organizations can be obtained from the addresses listed below. You are encouraged to include a #10 SASE and \$1.00 to cover copying and handling costs:

NRC Publication Center
P.O. Box 164
Mannsville, New York
13661

IRCA Goodie Factory
P.O. Box 21074
Seattle, WA
98111

IRCA ARTICLE REPRINTS OF INTEREST TO SHORTWAVE DXERS
A BIBLIOGRAPHY

Quite a few articles have appeared in the International Radio Club of America's weekly Broadcast Band DX publication, **DX Monitor**, since the club first started in 1964. This is the list of reprints of interest to SW listeners which are currently available. Numbers in parenthesis are the total number of pages contained in the reprint.

ANTENNAS

- A11 **The Super Signal Snatcher** (4) Dave Fischer. Theory on the set up and operation of a Beverage antenna (a very long wire), with tables and graphs. Gives careful study to reception patterns (lobes and nulls) and the advisability of terminating the far end of the antenna. Gives proper values for terminating resistors. 12/72
- A19 **Some Thoughts on Beverages** (1) H. John Clements. An experienced Beverage user gives some practical hints to potential Beverage antenna builders. 4/78
- A24 **DXing with the "DX Flyers"** (1) Gerry Thomas/Charlie Barfield. An interesting article dealing with erecting a 650' longwire antenna suspended from a kite. Deals only with resulting MW signal enhancement, but has obvious SWBC relevancy. 10/79
- A25 **The KRS All-Band "Active" Antenna** (1) Mike Hardester. A brief, but thorough review of Radio West's active antenna. 7/80
- A26 **Random Length Antennas** (1) Bruce Portzer. This article makes an important point about the vertical directivity of random wire antennas and their tendency to favor skywave over ground wave propagation. 10/80
- A34 **The MFJ-1020 Indoor Active Antenna** (1) Randy Tomer. Review. 7/81
- A41 **Defeating Atmospheric Interference by Underground Antennae** (1). Short introduction with description of two techniques. 1/82
- A42 **The Practical Beverage Antenna** (1) Don Moman. Author describes time saving techniques used to create "instant" Beverage antennas. If you have always dreamed of one of these beauties on 90 meters but were worried about "the details", this article is for you. 3/82
- A43 **Large-Area Loops for High-Noise Environments** (1) Glenn Kippel/Steve McGreevy. These are the short articles which cover all the basics of so-called "Floppy Loops." These loops can be tuned throughout the Tropical Bands and exhibit some directional characteristics. 3/82 and 6/83
- A44 **Yaesu FRT-7700, FRA-7700, Grove Signal Match TUN-2** (2) Sheldon Remington/Randy Tomer/ Don Moman. Reviews and a comparison of the FRT-7700 Passive Tuner, FRA-7700 Active Antenna and SW Horizon's Receiver-Antenna Interface #1. 7/82 and 2/83
- A46 **A Simple Guide to Beverage DXpeditions** (1) Doug Nyholm. An introduction to planning a Beverage DXpedition, including equipment and some theory for the layman. An excellent article for both beginning and advanced Beveragers. 3/83
- A50 **The 'APT-2" Active Antenna Tuner** (9) Mark Connelly. Complete details and diagrams for the construction and use of an active parallel tuner with regeneration for use with wires 2/0.6m to 1000/305m (150khz - 8Mhz). Layout and step-by-step construction are included, as well as instructions for use. Excellent for advanced builders. 11/83
- A55 **The BBA-1 Broadband Amplifier** (5) Mark Connelly. Details for construction and operation of a 15db broadband (100 khz to 30 Mhz) amplifier for use in systems where knob tweeking is to be kept to a minimum. Excellent for advanced builders. 3/84

- A60 **Some Antenna Experiments** (2) W.R. McIntosh. Description of the "Helical Longwire", a loop sized 293'89m coil. Results are presented using different antenna tuners. 6/84
- A63 **An RF Notch Filter** (1) Don Moman. Schematic for a tunable RF filter which will provide a 45db notch. This is an inexpensive, easy to construct outboard notch filter and is a real boon under crowded band conditions. 10/84
- A66 **RT-1 Remotely Controlled Antenna Tuner** (3) Mark Connelly. Complete description and schematics for a varactor diode remotely tuned antenna (up to 50'/15m). This remote tuner covers 140 khz to 6300 khz and is excellent for the advanced builder. 1/85
- A67 **Notes on Mediumwave Beverage Antennas** (3) Nick Hall-Patch/Don Moman. Summary of experiments done on Beverage termination, directional effects, construction and length. Brief description of the effect of two phased Beverages as well. Although most of the experiments are related to MW reception, this article is MUST reading for any Tropical Banders interested in Beverages. 1/85
- A70 **The Mitchell Lee Loop Amplifier** (5) Mark Connelly. Two versions are described, one for use with loops, the other with tuned circuits for LW, BCB and Tropical Band DXing. 3/85 and 9/85
- A80 **Heathkit Model HD-1424 Active Antenna** (1) Karl Zuk. Product review. 2/87
- A85 **Phasing Network for Beverage Antennas** (1). Reprint of an FCC paper describing a phasing network for Beverage antennas at their Powder Springs, GA monitoring station.

FOREIGN

- F26 **Time Pips as an Aid to IDing TP's** (2) Nick Hall-Patch/Bruce Portzer. Discussion on identifying the time pips used by Pacific, Asian and European stations. An excellent aid for SWBC DXers, as well as international Medium Wavers. 9/77
- F30 **Spotlight on Soviet Far East** (3) Randy Seaver. Very informative discussion of Soviet Far East BCB stations including schedules and identifying practices. Although this article deals only with MW, it could be of real assistance to those SWBC DXers specializing in Soviet domestic broadcasting. 10/77
- F35 **How to Pronounce Korean, Chinese and Spanish** (1) Bruce Portzer/Bill Harms. Three short articles to help understand how these languages sound. 10/79
- F44 **A Trans-Atlantic DXers Guide to Sunrise and Sunset Times** (2) Mark Connelly. A technique is described for estimating times to listen for TAs based on the sunrise at the station and sunset at the listener. Tables for TA sunrise and US sunset times are included. Also Latin American sunrise chart is included. 2/80
- F47 **The DXers Guide to China** (5) Bruce Portzer. Everything you wanted to know about broadcasting in China including pronunciation guide, map, list of stations, schedules and formats. Even though this article concentrates on Medium wave outlets, anyone interested in domestic Chinese SW broadcasting will find this article very useful. See also F50. 10/80
- F48 **A Guide to DXing Korea** (3) Bill Harms. A very complete guide to broadcasting in Korea. Networks, IDs and QSL policies are discussed. Includes a list of stations. This article can be of assistance to SWBC DXers interested in regional Korean broadcasting. 2/81
- F50 **Random Remarks on Chinese Broadcasting** (3) Pete Taylor. Comments and information on Chinese broadcasting with station lists, maps, and program information. This article is a companion to F47. 3/81

- F56 **TA DX from West Coast North America** (4) Nick Hall-Patch/Bruce Portzer. A very complete analysis of TA reception from the West Coast. Receptions are tabulated by zones and discussed in detail. Although this study deals exclusively with Medium wave reception, Tropical Band SWBC DXers interested in propagation through or near the auroral zone will find this excellent study very useful. 2/82
- F64 **A Cross-Index of China** (4) Art Peterson. Complete listing of the new Pinyin and the older Wade-Giles spelling of Chinese cities with latitude/longitude of each. 12/82

GENERAL

- G2 **Noise** (1) Lawrence Foster/John Kalpus. Discussion of eliminating various types of noise, including fluorescent lamp noise. This article should prove most useful to Tropical Band DXers. 12/67
- G3 **Sunrise/Sunset Maps** (\$2.00) Father Jack Pejza/Ernie Wesolowski. 24 maps showing sunset and sunrise times for the US and the World. Includes explanation of their use and examples of DX made possible by a knowledge of SR/SS times. These maps are a good low cost alternative (1/10th as much) to the "DX Edge" or the ON4UN software available through ARRL.
- G5 **Computation of Sunrise and Sunset Times** (14) Father Jack Pejza. Tables and instructions for computing the exact time of sunrise and sunset for latitudes up to 60 degrees N and S, throughout the year. 12/73
- G12 **All You Wanted to Know about Running a Radio Club Convention But Didn't Know Who to Ask** (12) Father Jack Pejza. An experienced convention host gives suggestions, ideas and warnings. Includes news release and souvenir examples.
- G14 **Morse Code Identification** (1) Larry Godwin. Techniques for using Morse Code to ID testing stations. Also includes the code alphabet. 2/70
- G18 **Sunrise, Sunset, and the Shortest Day of the Year** (1) Bill Hardy. Explains why the length of the day and the time of sunset don't necessarily jibe directly. Also talks about how a DXer can take advantage of it. This article will be of particular interest to Tropical Band DXers who are interested in sunrise/sunset enhancement and "greylining". 12/75
- G20 **World Time Chart** (1). World map showing all time zones and the letter designation of each. 1/77
- G30 **Some Random Notes on Sunrise Skip** (1) Robert Kramer. Discussion of sunrise skip and how it can be used to hear new stations. Good list of guidelines provided. 10/81
- G31 **Time Documentation of DX** (3) Charles R. Smiley, Jr. Author describes two techniques for recording time information on a stereo recorder. 8/82
- G34 **DX Edge** (1) Sheldon Remington. Review of a device used for determining worldwide monthly sunset and sunrise times, as well as the terminator. 11/82
- G38 **DXing During Aurora** (2) Robert Kramer. All the facts and details about DXing during an aurora, including what to expect, what to look for, and a list of pointers. Although this thorough study deals exclusively with MW DXing, SWBC DXers interested in auroral effects on the Tropical Bands should find this article helpful. 4/83
- G41 **A DXer's Guide to Headphones** (1) Dennis Kibbe. Discussion and a list of headphones currently on the market. 11/84
- G42 **(Retail) Electronic Parts Suppliers** (2) Mark Connelly. Addresses of electronic part suppliers and their specialities, in alphabetical order. 1/85

- G44 **Several DX Computer Programs** (6) Mark Connelly. Discussion and program listing for computer programs (in BASIC) to calculate sunrise/sunset times, Great Circle bearing/distance, and sort by frequency for loggings. 4/85

HISTORY OF RADIO

- H20 **Radio History - 1912 to 1937** (5). Reprinted from the 1938 Radio Annual. Short notes on advances in the state of the art. This article covers early SW as well as Medium wave broadcasting.

RECEIVER MODIFICATION AND CONSTRUCTION

- M1 **The Curse of the Superhetrodyne, and How to Hex It** (4) Joe Worcester. Describes some advantages and disadvantages of the superhetrodyne receiver. Then, suggests a modified TRF circuit as a possible solution. 3/71
- M2 **Putting a Recording Outlet on Your Receiver** (1) Grant Manning. Describes how and where to attach a recording jack which bypasses the volume control of a receiver.
- M4 **SPR-4 SSB Filter** (1) Grant Manning. How to modify a Drake SPR-4 to use the 2.4 khz sideband filters without turning on the BFO, and speed up the AGC response time. 5/74
- M6 **Intermediate Frequency Transformer Alignment** (2) Jon Perkins. A step-by-step outline for aligning the IF stages of any receiver. 3/70
- M7 **Selectivity** (1) Philip Sullivan. An introduction to the various methods of getting selectivity out of a receiver.
- M9 **R-390A/URR Optimization and Alignment Check** (2) Charles Taylor. Explains how to align the RF and IF stages of an R-390A. 5/81
- M10 **Modifying the Realistic TRF** (6) Gerry Thomas/Mark Connelly. Very detailed and specific instructions for aligning, improving the readout (to 10 khz), better selectivity, adding antenna connections and installing a S-meter in the TRF. 10/80
- M11 **An Audio Switching Unit** (1) Nick Hall-Patch. Explains how to connect two receivers to a tape recorder in order to listen to either one or playback. 10/80
- M12 **Tape Interconnection, the Right Way/An Attenuator Patch Cord for Taping DX** (1) Don Davis/Gerry Thomas. Install an input jack in a receiver to make use of its audio stage for playback. Construction of a patch cord for running radio outputs into the microphone input of a tape recorder. Most applicable to tube type receivers. 2/78
- M14 **Mobilizing the SPR-4 Receiver** (1) Charles Taylor. Addresses problems associated with mobile operation of the SPR-4. Formulates solutions to antenna and power supply problems, and describes the construction of an antenna tuner. 8/78
- M17 **Synchronous AM Detectors** (2) Nick Hall-Patch. Discussion of AM detection and the use of a phase-locked loop to improve reception of weak BCB signals. Includes schematics for several applications. 2/83
- M18 **FRG-7 Mods** (2) Brian Aase/Ralph Sanserino. Describes modifications to the FRG-7 which improve the S-meter, selectivity, AVC and parallax. 10/80
- M20 **R-390A Operating Procedure** (2) Charles Taylor. Complete description with notes and explanations. 10/80
- M21 **More Thoughts on Tape Recording from the TRF and other Portable Radios** (2) Mark Connelly. Several methods are discussed, with diagrams. 12/80

- M23 **R-390A/URR Vacuum-Tube to Solid State Power Supply Conversion** (3) Charles Taylor. Complete concise description for converting a R-390A power supply to its solid-state equivalent. Many good diagrams. 2/81
- M26 **Antenna/Headphone Switching Units** (1) Derek Claridge/Mike Worst/Nick Hall-Patch. Outlines several methods for switching audio and antennas between multiple receivers and headphones. 5/81
- M30 **A Crystal Calibrator** (1) Bruce Portzer. Circuit and description for a 100 khz crystal calibrator, with a modification for 25 khz markers. 1/82
- M32 **R-390A 3TF7 Ballast Tube Replacement** (1) Steve Bohac and others. Several proven techniques for replacing this hard to find regulator tube. 11/82
- M33 **ICF-6500W Selectivity Modification** (2) Gerry Thomas/Dennis Kibbe. Complete details and step-by-step construction for installing a narrow IF ceramic filter. Steps for improving the audio are also included. 2/83 and 11/84
- M34 **Plessy SL 6700 IF/Detector IC** (2) Nick Hall-Patch. Description of the IC, schematic for a receiver IF amp/detector and an evaluation of the circuit. 4/83
- M37 **ICOM R-70 Modifications** (1) Don Moman. Allows the SSB Pass Band Tuning filter to be used in place of the 6 khz AM filter and allow pre-amplifier to operate below 1600 khz. 8/83
- M38 **Torrestronics TK-1 Digital Display Kit** (1) Randy Tomer. Review of kit. Describes how to use the counter on an HQ-180. 8/83
- M40 **Two Sony Modifications** (1) Dennis Kibbe. Describes a technique for improving the selectivity of the 7600A by adding a crystal filter. 12/83
- M41 **ICOM R-70 Mods** (3) Laurens Engel. Describes a number of improvements to the receiver, including RF input protection, enabling the pre-amplifier below 1600 khz, partial elimination of the RF attenuator below 1600 khz, reduction of low frequency audio, dial light on/off and dimming, and more dynamic filter selection for RTTY and AM modes. 9/85
- M42 **Schottky Diode Detectors** (1) Nick Hall-Patch. Discusses the use of schottky diodes in the detector stage of AM receivers.
- M43 **ESKAB PLAM Option for the ICOM R-71** (1) Don Moman. Discusses a commercially available detector stage for the R-71. 1/87
- M44 **ICOM R-71 Mods, Tricks and Tips** (1) Guy Atkins. Describes some simple modifications and operating techniques for the R-71. 11/87
- M45 **Kenwood R-5000 Modifications** (1) Don Moman. Several simple modifications to the receiver including LW/MW sensitivity improvement, front-end protection, SSB level increase and beep-tone adjustment. 12/87
- M46 **Replacing the R-70's PBT Filter** (2) Gerry Thomas. Describes how to replace the ceramic filter in the R-70/71 passband tuner circuit to improve selectivity.

RECEIVERS

- R3 **Hammarlund HQ-200** (1) Tom Garcia. Review. 9/73
- R4 **National HRO-500** (1) Paul Daplyn. Review. 12/73
- R5 **Drake SPR-4** (2) Robert Fischer. Detailed review. Includes selectivity curves. 11/72
- R6 **Barlow-Wadley XCR-30** (3) Mike Hardester/Charlie Keleher/J. A. Worcester/Grant Manning. Reviews and notes on modification. 7/75

- R15 **Collins R-392** (1) Ralph Sanserino/Phil Bytheway. Review. 10/80
- R16 **Drake SSR-1/Autek QF-1** (1) Grant Manning. Reviews. 11/75
- R17 **Yaesu FRG-7** (2) Bruce Portzer. Review. 9/77
- R18 **Collins R-390A/URR** (5) Charles Taylor. Complete and detailed review. 7/79
- R20 **Panasonic RF-4800** (1) Grant Manning. Review. 4/78
- R22 **Panasonic RF-2200/RF-2600/RF-2900** (1) Bruce Portzer. Short reviews. 10/80
- R23 **Realistic DX-150/160/Kenwood R-300/Layfayette BCR-101/Sony ICF-6700W** (1) Pete Taylor. Four short reviews. 10/80
- R24 **Yaesu FRG-7000/Kenwood R-1000** (1). FRG-7000 is short, R-1000 is longer. 10/80
- R25 **Modified FRG-7/FRG-7000 and FRG-7700/McKay Dymek DR-33C** (1). Reviews. 2/83
- R26 **Hammarlund HQ-180/SP-600** (1) Bruce Portzer/Phil Bytheway. Reviews. 10/80
- R27 **Radio West Modified SPR-4** (1) Randy Tomer. Discusses the improvement in SPR-4 performance due to Radio West's selectivity and AGC time constant modifications. See M4 for details on the modifications. 12/80
- R30 **Sony ICF-2001** (2) Pete Taylor/Don Moman. Reviews. 3/81 and 10/81
- R31 **Drake R-7** (3) Don Moman/Chuck Hutton/Craig Healy. Reviews. 3/81 and 1/83
- R32 **A Comparison of Tube and Transistorized Receivers** (1) Bruce Portzer. Discusses the differences between tube radios and the newer solid-state sets. 10/80
- R33 **Subjective Evaluation of FRG-7 vs FRG-7** (1) Louis Goldstein. A look at how the FRG-7 evolved over the years. 5/81
- R36 **The Panasonic RF-3100** (1) Don Moman. Review. 7/82
- R37 **The Yaesu FRG-7700** (1) Don Moman. Review. 7/82
- R38 **Kenwood R-600** (1) Tim O'Hare/Bruce Portzer/Randy Tomer. Reviews. 9/82 and 11/82
- R40 **Potomac Instruments SMR-11/Kenwood TS-430 Transceiver** (2) Karl Zuk/Don Moman. Review of a hi-fidelity BCB receiver with features that might interest a DXer and a review of a Ham transceiver with a general coverage receiver. 10/82 and 1/84
- R41 **Panasonic RF-6300/RF-081** (1) Don Moman/Randy Tomer. Reviews. 11/82
- R43 **Sony ICF-6500W - The Perfect Portable** (2) Gerry Thomas. Review. 2/83
- R44 **ICOM R-70** (1) Don Moman. Review. 2/83
- R45 **Kenwood R-2000** (1) Don Moman. Review. 2/83
- R47 **Sony ICF-2002 (7600D)** (1) Dennis Kibbe. Review and first impressions. 12/83
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- R54 **Kenwood R-5000** (3) Don Moman/Nick Hall-Patch. Reviews. 2/87 and 3/87
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- T2 **A Beginners Guide to the Ionosphere** (4) Father Jack Pejza. A simple explanation, with drawings and graphs, of how the ionosphere reradiates radio waves. 1/73
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- T7 **Yes, SAH** (1) Glenn Hauser. A description of sub-audible heterodynes, how to detect them, and how they can be used for determining frequencies. 12/71
- T8 **DX Mathematics** (6) Dave Fischer. Details for using trig tables to calculate Great Circle distance and bearing. A brief description of radio direction finding is included. See also T12.
- T10 **Spurious Responses and How to Recognize Them** (1) Michael Northam. Talks about how signals mix inside a superheterodyne receiver causing stations to be heard on frequencies different from their carriers.
- T11 **The Use of a Tape Recorder in DXing** (1) Arthur Peterson. Tips for the DXer detailing the purchase, use and maintenance of a tape recorder.
- T12 **Easy DX Calculations** (1) Dave Fischer. A simplified version of some of the calculations found in T8. 5/74
- T14 **Comment on FJP Equations for Arrival/Takeoff Angles** (1) Dave Fischer. Corrects an oversight in the computations outlined in T3. 8/74
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- T22 **Summer Static, a Skywave Proposition** (1) Gene Martin. Discusses thunderstorm generated static and why the background noise level often goes down as dawn approaches. This article is of particular use to those interested in dawn enhancement DX on the Tropical Bands. 7/70
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- T27 **Precision Frequency Analysis for the Medium Wave DXer** (2) Ron Schatz. Describes a technique for station identification by measuring exact frequencies. 11/75
- T28 **WWV and You** (2) Bruce Portzer. Complete information on the services of WWV, with three charts and time table. 4/76
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- T31 **Precision Frequency Measurement in the Mediumwave and the Shortwave Broadcast Bands** (8) Charles Taylor. Complete rundown on PFM and how it is accomplished. 2/76

- T32 **Auroral/Geomagnetic Activity and its Effect on MW Reception** (1) Gordon Nelson. Concise set of guidelines examining the effects of geomagnetic activity on BCB reception. This article, by one of the deans of the radio propagation field, should be very important to any SWBC DXer interested in trans-polar and high latitude propagation. 8/76
- T33 **Silencing QRN from a Fish-Tank Heater** (1) Nick Hall-Patch. Describes a method for reducing line noise buzzes with a capacitor. 8/77
- T45 **Nighttime Medium Wave Propagation by Ionospheric Refraction** (4) Randy Seaver. Article detailing radio wave propagation theory and ionospheric conditions. This article has a great deal of relevance to those SWBC DXers interested in Tropical Band propagation. 9/78
- T46 **On Reflection and Refraction** (2) Randy Seaver. Do radio waves reflect or refract from the ionosphere? Both philosophies are discussed and conclusions are drawn. 1/79
- T47 **A Method of Finding the Distance Between Two Places on Earth** (2) Father Jack Pejza. With these two charts, distance can be determined to within 50 miles. 2/79
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- T50 **Strong Signal Handling** (2) Chuck Hutton. Discussion about strong signal handling in a receiver, and what can be done to improve it. 10/80
- T51 **Audio Filters** (4) Bruce Portzer/Sheldon Remington/Nick Hall-Patch. Includes introduction, reviews of Autek QF-1, MFJ SBF-2BX, SL-55, MFJ-752, Mizuho AP-M1, Laboelectron SF-0330, Datong FL-2 and Hildreth Engineering "CommAudio Processor" filters, and some schematics for "build-your-own" audio filters. Highly recommended reading for shortwave DXers and SWL's alike. 2/83
- T52 **Gilfer GAR-7, KRS DD-2, KRS DD-1-4D** (1) Gerry Thomas/Nick Hall-Patch. Reviews of these commercial digital readouts for radios with Wadley Loops and 455 khz IF. 2/83
- T53 **More Great Circle Calculations** (1) Richard Corry. Simple equations and a Basic program for a HP-25. 11/80
- T55 **Diurnal Field Strength Calculations** (1) FCC. FCC method for calculating interference during sunrise and sunset skip. 2 charts and outline for use. 10/82
- T56 **Great Circle DX Program** (3) Mark Connelly. HP Basic program to calculate Great Circle bearing and distance. The location of many US and world cities is included. 3/83
- T60 **Ceramic Filters** (5) Marc Bergman. Discusses the performance of several commercially available filters. Includes actual lab measurements of their performance. 11/85
- T62 **Sea Gain** (5) Randy Seaver. Explains why trans-oceanic signals are heard exceptionally well near the coast. Although the sea gain effect is most noticeable on low and medium frequencies, SW DXers interested in Tropical Band propagation may find this article very useful. 1/87
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interest to any enthusiast interested in radio propagation at high latitudes or on trans-polar routes. 11/87

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