

Engn copy 11-75

File No. **DLED** **OK** **PP**

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

APPLICATION FOR NONCOMMERCIAL EDUCATIONAL
TV, FM, OR STANDARD BROADCAST STATION LICENSE

Name (See Instruction D) **Back Porch Radio
Broadcasting, Inc.** 11/13/75

Address **Box 3219**

City **Madison** State **Wis** ZIP **53704**

Notices and communications with respect to this application are to be addressed to the following-named persons at the address indicated:

Name **Michael O'Connor**

Address **Box 3219**

City **Madison** State **Wis** ZIP **53704**

INSTRUCTIONS

- A. This form is to be used in all cases when applying for a Noncommercial Educational TV, FM, or Standard Broadcast Station License. This form consists of this part, Section I, and the following sections: Section II-A, License Application Engineering Data Standard Broadcast; Section II-B, License Application Engineering Data FM Broadcast; Section II-C, License Application Engineering Data Television Broadcast.
- B. PREPARE THREE COPIES of this form and all exhibits. Sign one copy. File with the Federal Communications Commission, Washington, D. C. 20554.
- C. Number exhibits serially in the space provided in the body of the form and list each exhibit in the space provided on page 2 of this Section. Date each exhibit and each antenna pattern.
- D. The name of the applicant must be stated exactly as it appears on the construction permit which is being covered. The applicant must notify the Commission of any change of address.
- E. Information called for by this application which is already on file with the Commission need not be repeated in this application provided (1) the information is now on file in an application as FCC form filed by or on behalf of this applicant, (2) the information is identified fully by reference to the file number (if any), the FCC form number and the filing date of the application or other form containing the information and the page or paragraph referred to, and (3) since filing the reference, the applicant states: "No change since date of filing." Any such reference will be considered to incorporate into this application the application or other form referred to in its entirety. Do not incorporate by reference any material which is not to be open to the public.
- F. This application shall be personally signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is partnership; by an officer, if the applicant is a corporation; by a member who is an officer, if the applicant is an unincorporated association; by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction, if the applicant is an eligible government entity; or by the applicant's attorney in case of the applicant physical disability or of his absence from the United States. The attorney shall, in the event he signs for the applicant, separately set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorney's belief only (rather than his knowledge), he shall separately set forth his reasons for believing that such statements are true.
- G. BE SURE ALL NECESSARY INFORMATION IS FURNISHED AND ALL PARAGRAPHS ARE FULLY ANSWERED. IF ANY PORTIONS OF THE APPLICATION ARE NOT APPLICABLE, SPECIFICALLY SO STATE. DEFECTIVE OR INCOMPLETE APPLICATIONS MAY BE RETURNED WITHOUT CONSIDERATION.

RECEIVED BY FCC
NOV 6 1975
MAIL BRANCH

2. Construction permit covered by this application

| | |
|--|---|
| File number BMPED 1282 | Date |
| Construction begun 8/1/75 | Construction completed 10/31/75 |
| Is the station now in satisfactory operating condition and ready for regular operation? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| If not, explain | |

3. Has applicant any contract, arrangement, or understanding, expressed or implied, with a network organization for the broadcasting of network programs?
Yes No

If "Yes," state as Exhibit No. _____ arrangements under which they are to be obtained and attach copies of any contractual arrangement which may have been made. If the arrangement is based on an oral understanding, a written statement of the arrangement should be submitted.

Note: The NET, NAEB Radio Tape Network, Educational Radio Network and Eastern Educational Network are examples of educational networks.

FINANCIAL DATA

4. Give actual cost of installation for which construction is authorized.

| | |
|-----------------------------------|--|
| Frequency and modulation monitors | Antenna system including tower, coupling equipment, and transmission line |
| \$ 100.00 | \$ 7.00 |
| Acquiring land | Studio technical equipment, microphone, transcription equipment, cameras, etc. |
| \$ 60.00 | \$ 2500.00 |
| Other items (state nature) | Acquiring, constructing or modifying buildings |
| \$ | \$ 400.00 |
| | Total |
| \$ | \$ 3067.00 |

5a. Have there been any substantial changes in the financial data submitted with the application for the construction permit?
Yes No

b. If answer to Question 5a is yes, submit as Exhibit No. _____ a statement outlining such changes.

6. Is a request for authority to conduct program tests a part of this application?
Yes No

If "No," explain

7. Is applicant's ownership report (FCC Form 323E) on file with the Commission?
Yes No

If "No," explain

1. Facilities authorized by construction permit

| | | |
|---|---|--------------------------|
| Frequency 89.7 | Channel No. 209 | Call Sign WORT |
| Effective radiated power in kilowatts, or power for standard broadcast stations 3.978 | Antenna height above average terrain in feet (FM and TV only) 105 | |
| Location of main studio State Wisconsin City Madison | | |
| Location of transmitter State Wisconsin County Dane City Madison | | |
| Number and street (or other indication of location) 2047 Winnebago St. | | |

EXISTING FACILITIES

NOV 12 1975

THE APPLICANT hereby waives any claim to the use of any particular frequency or of the other as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934).

THE APPLICANT represents that this application is not filed for the purpose of impeding, obstructing, or delaying determination on any other application with which it may be in conflict.

THE APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations, and that all the exhibits are a material part hereof and are incorporated herein as if set out in full in the application.

CERTIFICATION

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signed and dated this 31 day of October, 1975

Back Porch Radio Broadcasting, Inc.

(NAME OF APPLICANT)

By

Patrick Ryan

(SIGNATURE)

President

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT U. S. CODE, TITLE 18, SECTION 1001.

If applicant is represented by legal or engineering counsel, state name and post office address:

Robert J. Stein, 1712 N. St. NW, Washington, D.C. 20036

EXHIBITS furnished as required by this form:

| EXHIBIT NO. | SECTION AND PARAGRAPH NO. OF FORM | NAME AND OFFICER OR EMPLOYEE (1) BY WHOM OR (2) UNDER WHOSE DIRECTION EXHIBIT WAS PREPARED (SHOW WHICH) | OFFICIAL TITLE |
|-------------|-----------------------------------|---|--------------------|
| 1 | Proof data & procedure | Patrick Ryan | Technical Director |

C 1

| Broadcast Application | | | FEDERAL COMMUNICATIONS COMMISSION | | | Section II-B | | | | |
|---|--|---|--|---|----------------------------|--|------------------------------|--|----------------------------------|--|
| LICENSE APPLICATION ENGINEERING DATA NONCOMMERCIAL EDUCATIONAL FM STATION | | | | Name of Applicant | | | FOR COMMISSION USE ONLY | | | |
| | | | | | | | File No. | | | |
| 1. Facilities authorized in construction permit | | | | | | 8. Transmission line | | | | |
| Call Letters WORT | | File No. of construction permit BMPED 1282 | | | | Make Andrews | | Type No. 451 | Description rigid coax | |
| Frequency 89.7 | Effective Radiated Power (aural) in dbk: 3.974 in kw: | | Antenna height above average terrain 105 feet | | | Size: (nominal inside transverse dimension) in inches 1 5/8 | Length in feet 215 | Rated efficiency in per- cent for this length 95.8 | | |
| 2. Transmitter location | | | | | | 9. Modulation monitor | | | | |
| State Wisconsin | | County Dane | | | | Make Hewlett-Packard | | Type No. 335-B | | |
| City or town Madison | | Street Address (or other ident.) 2049 Winnebago | | | | 10. Frequency monitor | | | | |
| State Wisconsin | | County Dane | | | | Make Hewlett-Packard | | Type No. 335-B | | |
| City or town Madison | | Street Address 2049 Winnebago | | | | By what method and how often will regular measurements of the calibration of the frequency monitor be repeated? The HP 335*B will be calibrated monthly with a H-P 5382-A frequency counter | | | | |
| 3. Main studio location | | | | | | Give the following data on the frequency measurements | | | | |
| State Wisconsin | | County Dane | | | | Date and time | | Name of measurement agency or method used | | |
| City or town Madison | | Street Address 2049 Winnebago | | | | 1. 10/26/75 | | H-P 5382-A | | |
| 4. Remote control point location | | | | | | 2. _____ | | 3. _____ | | |
| State same | | City or town same | | | | 3. _____ | | 4. _____ | | |
| Street Address (or other identification) same | | 5. Transmitter installed | | | | 4. _____ | | Frequency measured by such agency or method | | |
| State same | | Make Collins | | Type No. 732-A | Rated Power 1 KW | 1. 89.699965 Mhz | | Monitor reading high or low high | | |
| 6. Operating constants | | | | | | 2. _____ | | 3. _____ | | |
| D.C. plate current in last radio stage, in amperes .397 | | Applied D.C. plate voltage of last radio stage, in volts 3700 | | | | 3. _____ | | 4. _____ | | |
| Plate input power to last radio stage, in kilowatts 1471 | | Efficiency factor F of transmitter at operating power, in percent 68% | | | | 4. _____ | | 11. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit? none | | |
| Transmitter power output in kw by indirect method 1.00 | | RF transmission line meter reading 4.43 | | | | | | | | |
| 7. Antenna | | | | | | | | | | |
| Antenna make and type No. Collins 37-M-84 | | Number of sections four | | Power gain 4.15 | | | | | | |
| Overall height of antenna system above ground in feet 163 | | | | | | | | | | |
| Geographical coordinates of antenna (to nearest second) | | | | | | | | | | |
| North latitude 43°05'35" 43°05'35" | | West Longitude 89°21'12" | | | | | | | | |
| Antenna supporting structure (describe fully) Self supporting Blau-Knox tower | | | | | | | | | | |
| I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief. | | | | | | | | | | |
| Date November 4, 1975 | | | | | | Signature Patrick L. Ryan | | | | |
| <input checked="" type="checkbox"/> Technical Director | | | | <input type="checkbox"/> Chief Operator | | <input type="checkbox"/> Consulting Engineer | | | | |
| <input type="checkbox"/> Registered Professional Engineer | | | | | | | | | | |

Done with Heath AV-3 ACVTM
 on input B+W 200 tone generator
 B+W 891 Distortion meter on
 output
 and HP 335 B Mod Mon

25% MODULATION

| P.R. | 50 ops | 100 ops | 400 ops | 1000 ops | 5000 ops | 10000 ops | 15000 ops | EXAMPLE |
|--|-----------|------------|------------|-------------|-------------|--------------|--------------|---------|
| ENTER 1000 ops READING (ALL SPACES) <i>N</i> | -20db | -20db | -20.5 | -21db | -30db | -31.5 | -39db | 22.6 db |
| ENTER 206A ATTENUATOR <i>0.5T</i> READINGS | -19.5 | -20db | -20.5 | -21db | -29db | -33.5 | -37db | 22.8 db |
| SUBTRACT READ- INGS. RESULT IS INPUT VARIATION | +1.5db | 0db | 0db | 0 db | +1db | +1.5db | +2 db | -0.2 db |

50% MODULATION

| P.R. | 50 ops | 100 ops | 400 ops | 1000 ops | 5000 ops | 10000 ops | 15000 ops | EXAMPLE |
|--|-----------|------------|------------|-------------|-------------|--------------|--------------|---------|
| ENTER 1000 ops READING (ALL SPACES) <i>N</i> | -13.5 | -14 | -14 | -15db | -23db | -28.5 | -32db | 16.7 |
| ENTER 206A ATTENUATOR <i>0.5T</i> READINGS | -13.5 | -14 | -14 | -15db | -22db | -26.5 | -30db | 16.6 |
| SUBTRACT READ- INGS. RESULT IS INPUT VARIATION | 0db | 0db | 0db | 0 db | +1db | +2.0db | +2 db | +0.1 db |

Done with
 Heath AV-3 ACVTUM
 on input + B+W 200 tone generator
~~HP~~ B+W 891 Dist meter
 on output
 with HP 335B Mod Monitor

100% MODULATION

| | 50 ops | 100 ops | 400 ops | 1000 ops | 5000 ops | 10000 ops | 15000 ops | EXAMPLE |
|--|------------|------------|------------------------|------------------------|------------------------|-----------------------|--------------------------|---------|
| P.R. ENTER 1000 ops READING (ALL SPACES) | -7.5 | -8 | 7.5 -8.5 | 6db -9.5 | 25 -10.5 | 8.5 -23 | 10.5 -22.5 | 10.6 db |
| ENTER 206A ATTENUATOR READINGS | -8.3 | -8.5 | 7.5 -9 | 6db -10 | 25 -17 | 8.5 -22 | 10.5 -25.5 | 10.5 db |
| SUBTRACT READ- INGS. RESULT IS "INPUT VARIATION" | -0.8 db | -0.5 db | -0.5 db | 0 db | +0.5 db | +1 db | -3 db | +0.1 db |

ATRAC EXISTING FACILITIES

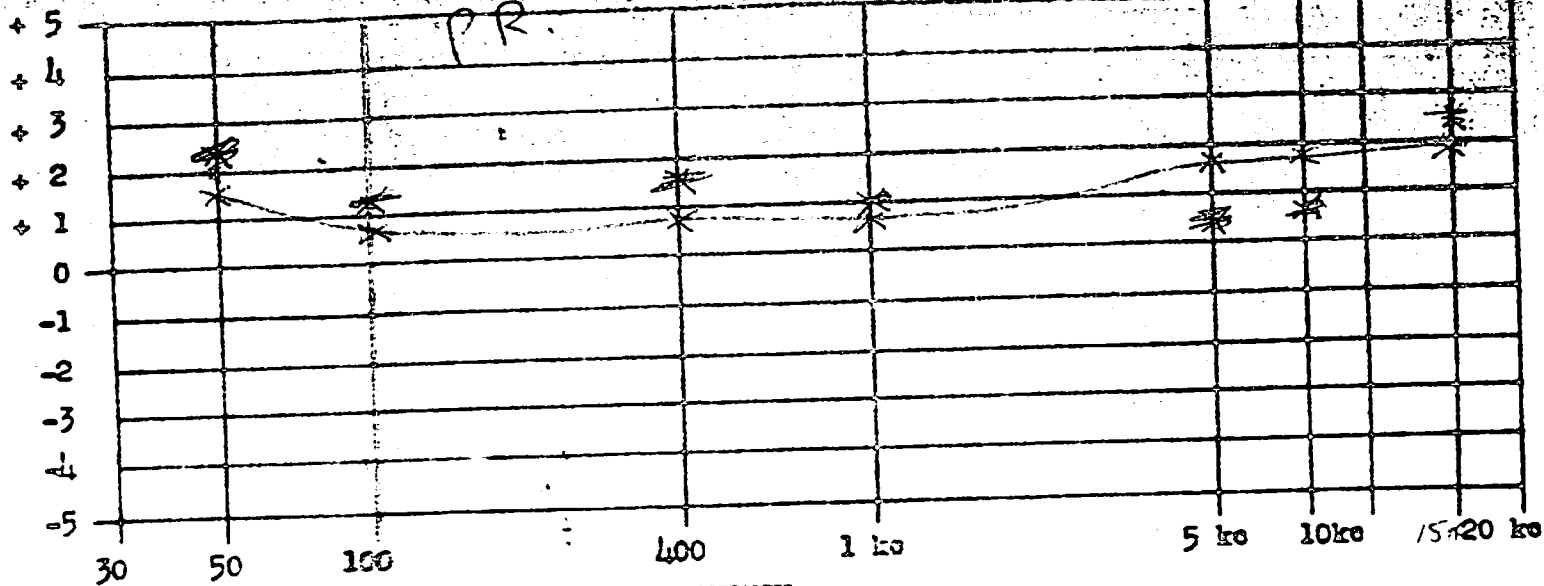
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80% MODULATION

| | 50 ops | 100 ops | 400 ops | 1000 ops | 5000 ops | 10000 ops | 15000 ops | |
|--|-----------|------------|------------|-------------|-------------|--------------|--------------|--|
| P.R. ENTER 1000 ops READING (ALL SPACES) | -9.5 | -10db | -10db | -11db | -20db | -25db | -28.5 | |
| ENTER 206A ATTENUATOR READINGS | -10db | -10db | -10db | -11db | -18.5 | -23db | -26.5 | |
| SUBTRACT READ- INGS. RESULT IS "INPUT VARIATION" | -0.5db | 0db | 0db | 0db | +1.5db | +2db | +2db | |

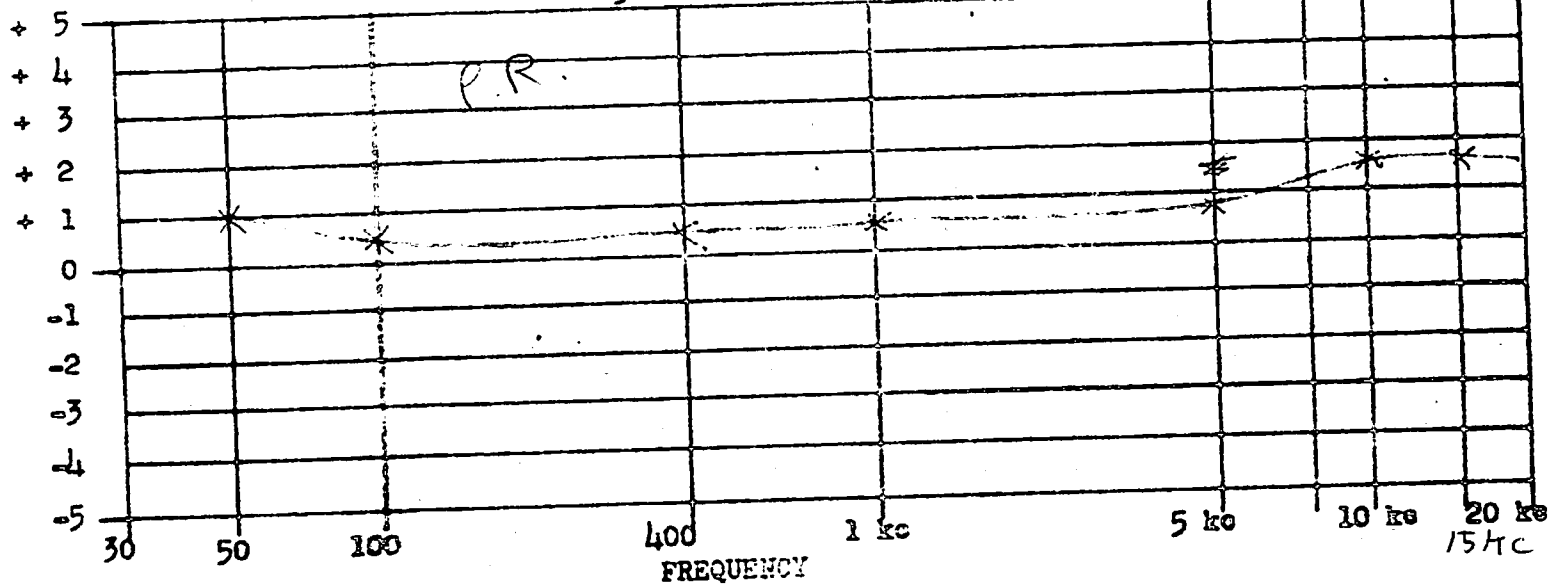
DISTORTION (%)

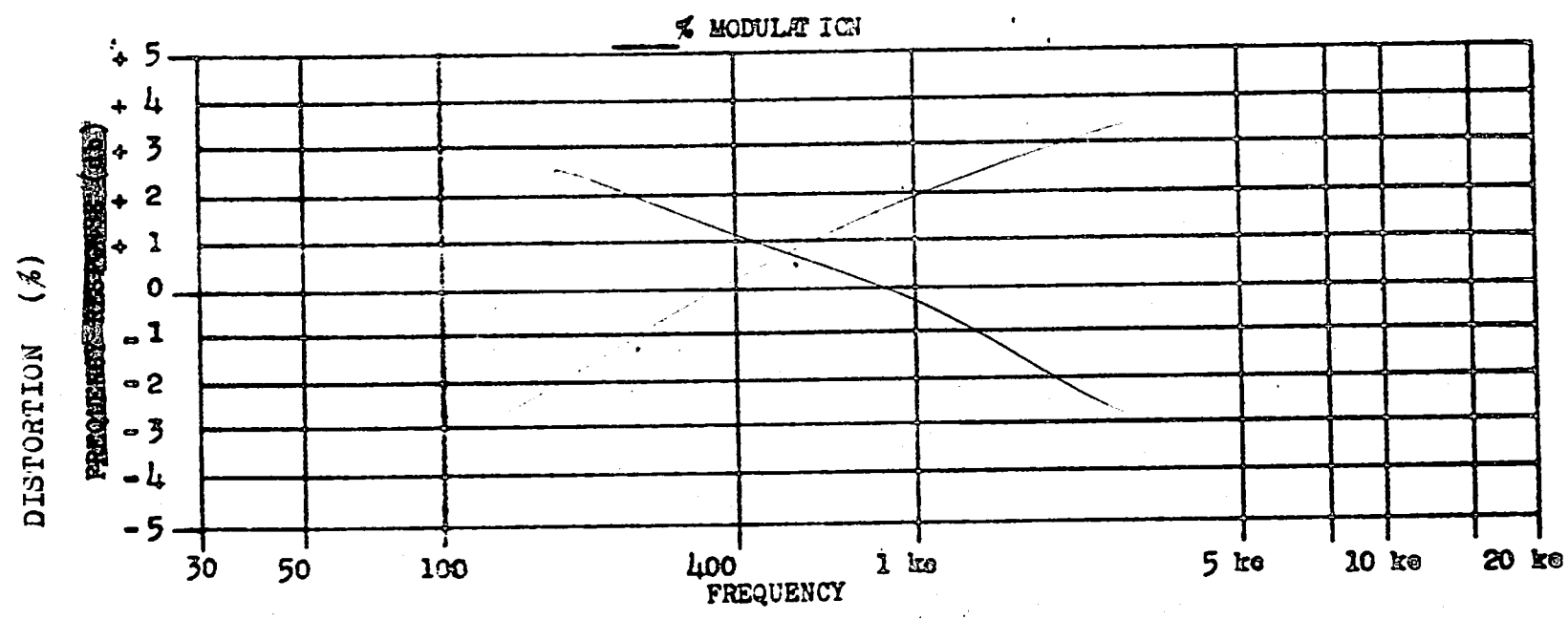
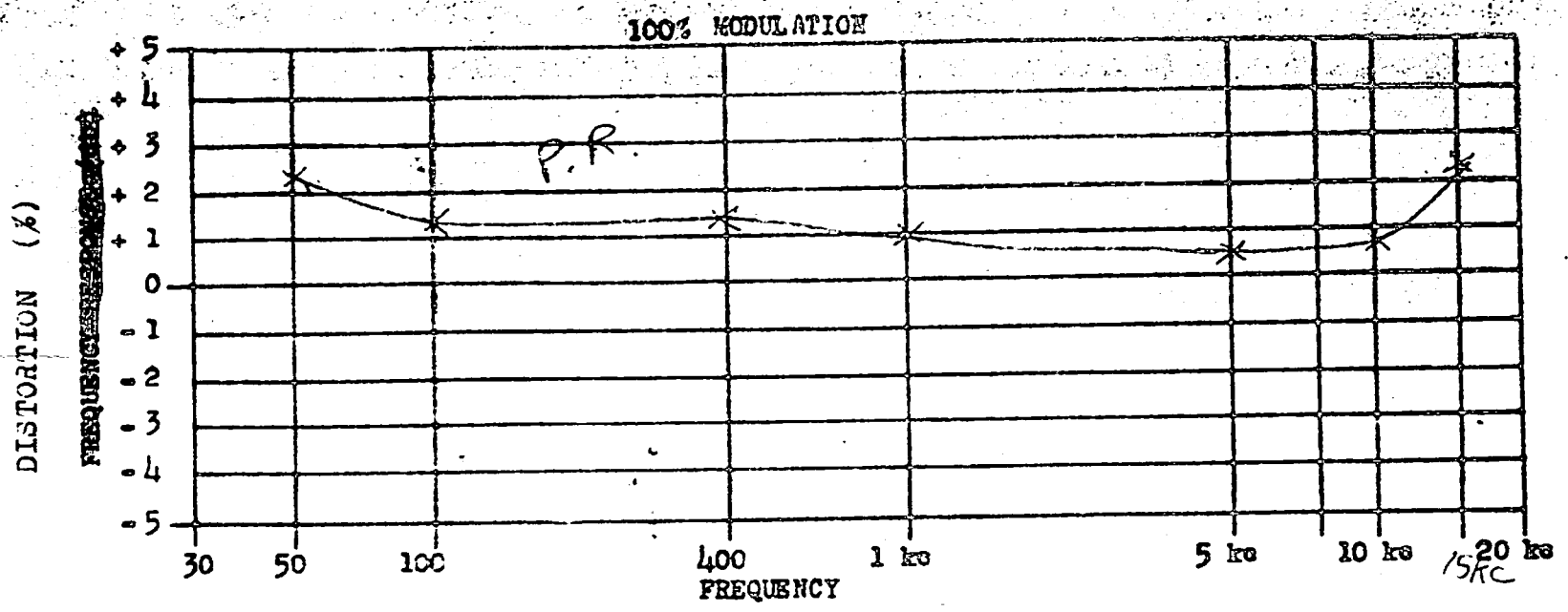
25% MODULATION



DISTORTION (%)

50% MODULATION





Proof of Performance - Equipment and Procedure

Noise:

Measurements were conducted using a B&W 891 distortion analyser, B&W 200 tone generator and ~~an~~ H-P 335B modulation monitor.

Equipment was calibrated with 400 Hz tone fed through a board mic channel driving the transmitter to 100% modulation as indicated by the modulation monitor. Audio generator was then turned off and noise read on the B&W 891. Mic fader was left on while conducting noise measurement.

Noise was recorded at -62 db.

Distortion:

Measurements were conducted using a B&W 891 distortion analyser, B&W 200 tone generator and a ~~H-P 335B modulation monitor~~ ^{P.R.}

Tone from the audio generator was supplied to the transmitter through a mic fader on the console and increased to deflect the modulation monitor the appropriate % modulation. Distortion was then measured with the B&W 891 which was connected to the audio output of ~~the modulation monitor~~ ^{P.R.}

a Kenwood KT 5000
AM-FM solid state tuner.
(unmodified)

Frequency Responce:

Measurements were conducted using a B&W 891 distortion analyser calibrated as a VTVM, a B&W 200 tonegenerator, a Heath AV-3^{A.C.} VTVM and a H-P 335B modulation monitor.

Tone was supplied to transmitter by the B&W 200 tone generator through a mic fader on the console. The output of the tone generator was measured with a Heath AV-3^{A.C.} VTVM. The transmitter was driven to the appropriate amount of modulation as indicated on the H-P 335B. The output of the transmitter was measured with the B&W 891 across the audio output of the modulation monitor. Measurements were conducted at 25, 50, 80 and 100 % modulation and recorded in both chart and graph form.

Signed,

Patrick L. Ryan
Patrick Ryan
Technical Director
10/31/75

Modulation percentage was calibrated using Bezel Functions.

NOISE -62db 400 eps AT 100% MOD.
 Done on B+W Model 891 Distortion Meter
 + B+W 200 tone generator + HP335B Mod Mon.

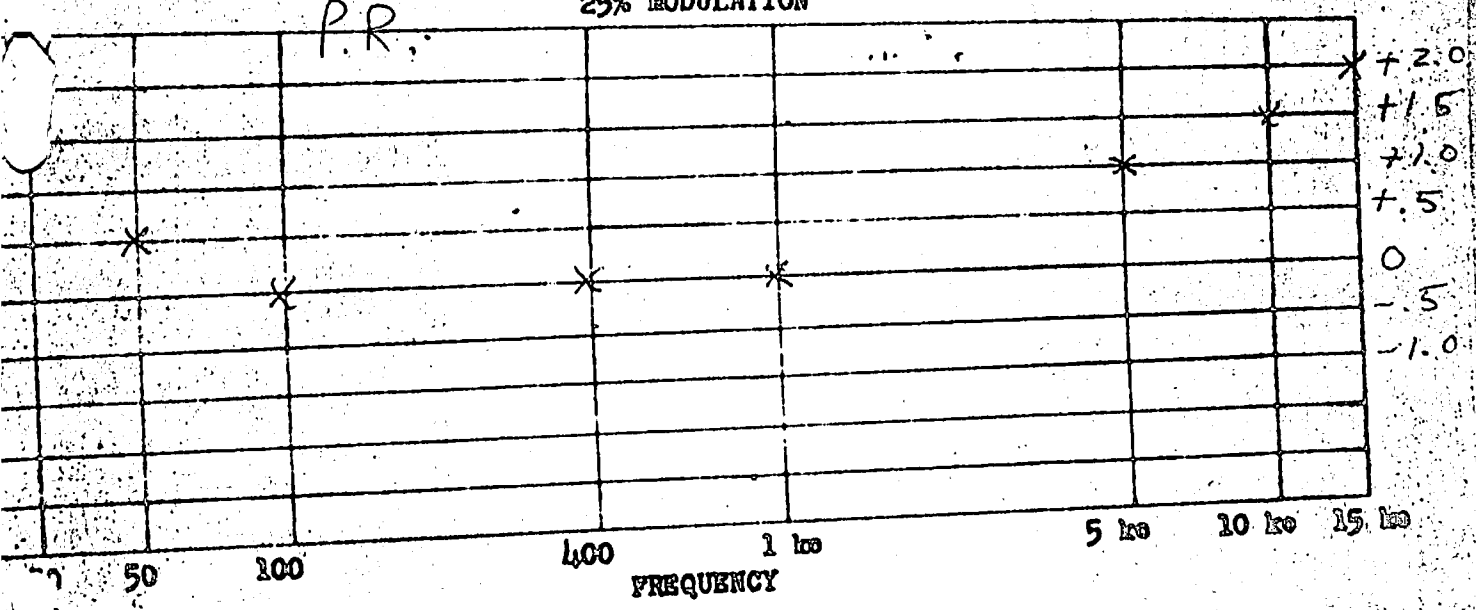
HARMONIC DISTORTION done on B+W Model 891

| P.R. | 50 eps | 100 eps | 400 eps | 1000 eps | 5000 eps | 10000 eps | 15000eps |
|-----------|--------|---------|---------|----------|----------|-----------|----------|
| 25% MOD. | 1.3% | .75% | .85% | .80% | 1.60% | 1.80% | 1.85% |
| 50% MOD. | 1.0% | .50% | .50% | .55% | .95% | 1.50% | 1.50% |
| 100% MOD. | 2.25% | 1.15% | 1.3% | 1.00% | .60% | .75% | 2.3% |

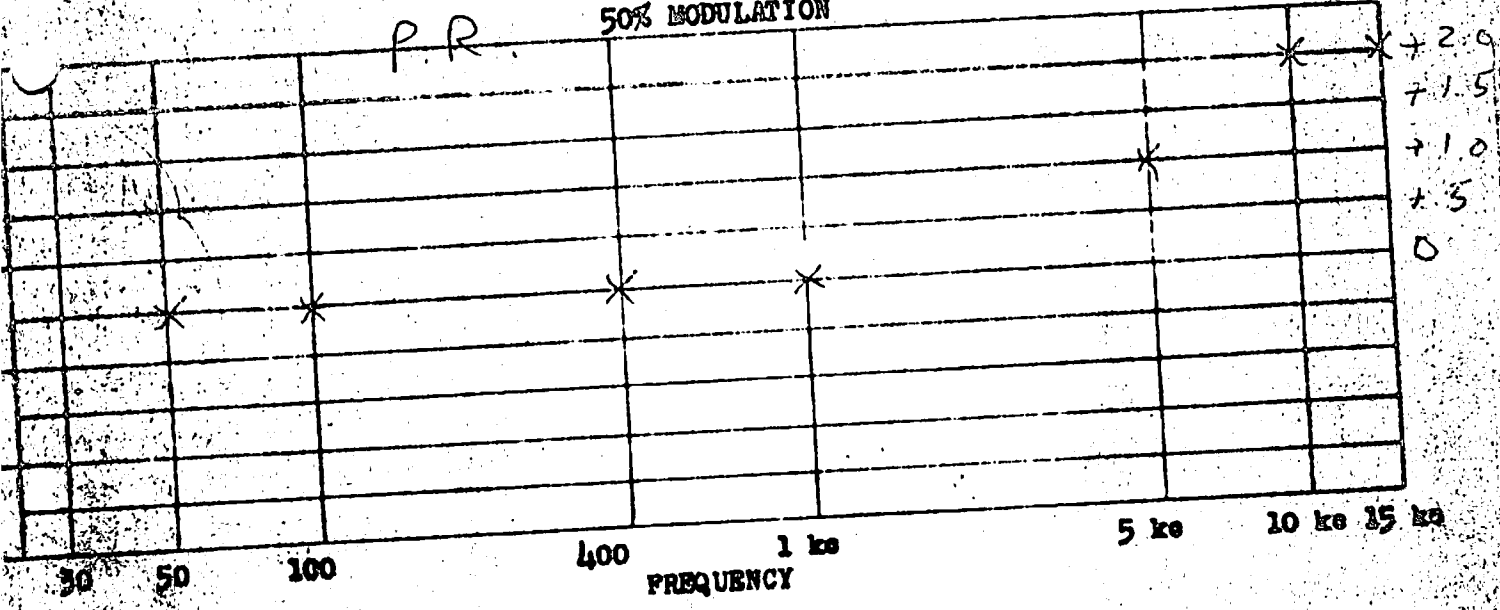
Distortion Meter with Kenwood HP 5000 H.P. Model P.R. 335B P.R. Mod Mon P.R. + Eng. Meter

FREQUENCY RESPONSE

25% MODULATION

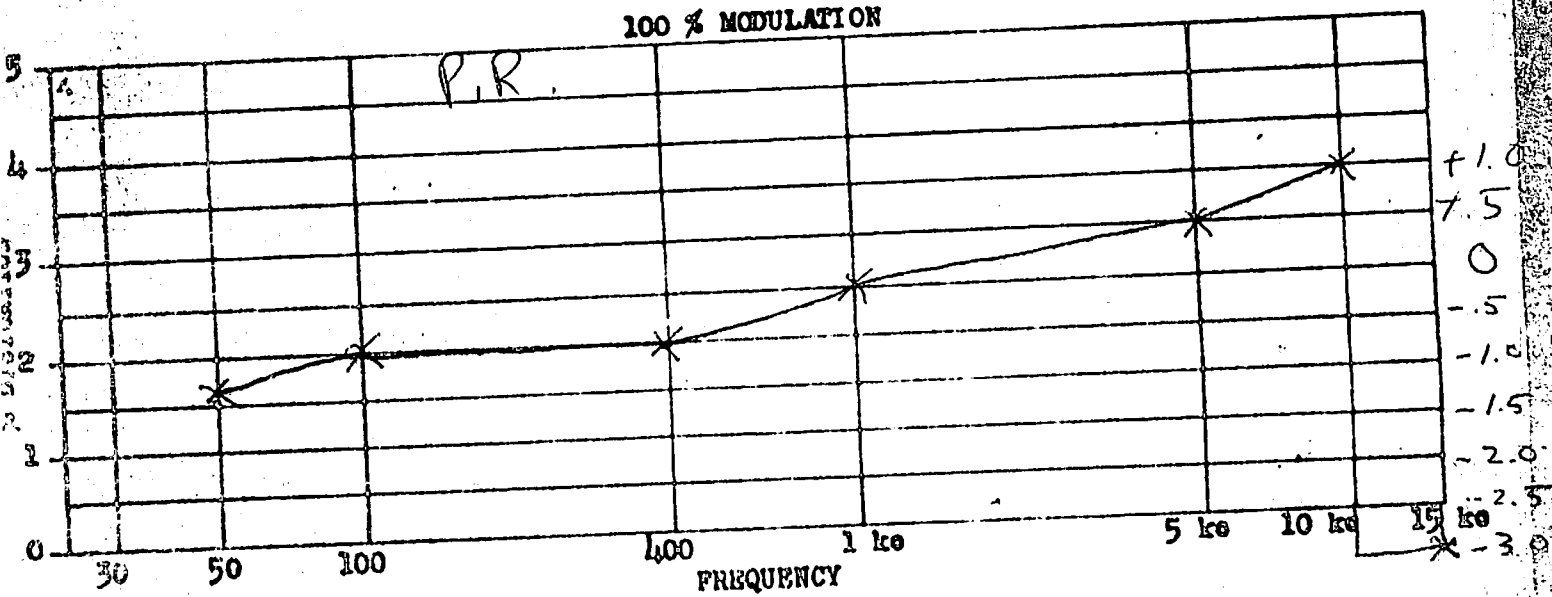


50% MODULATION

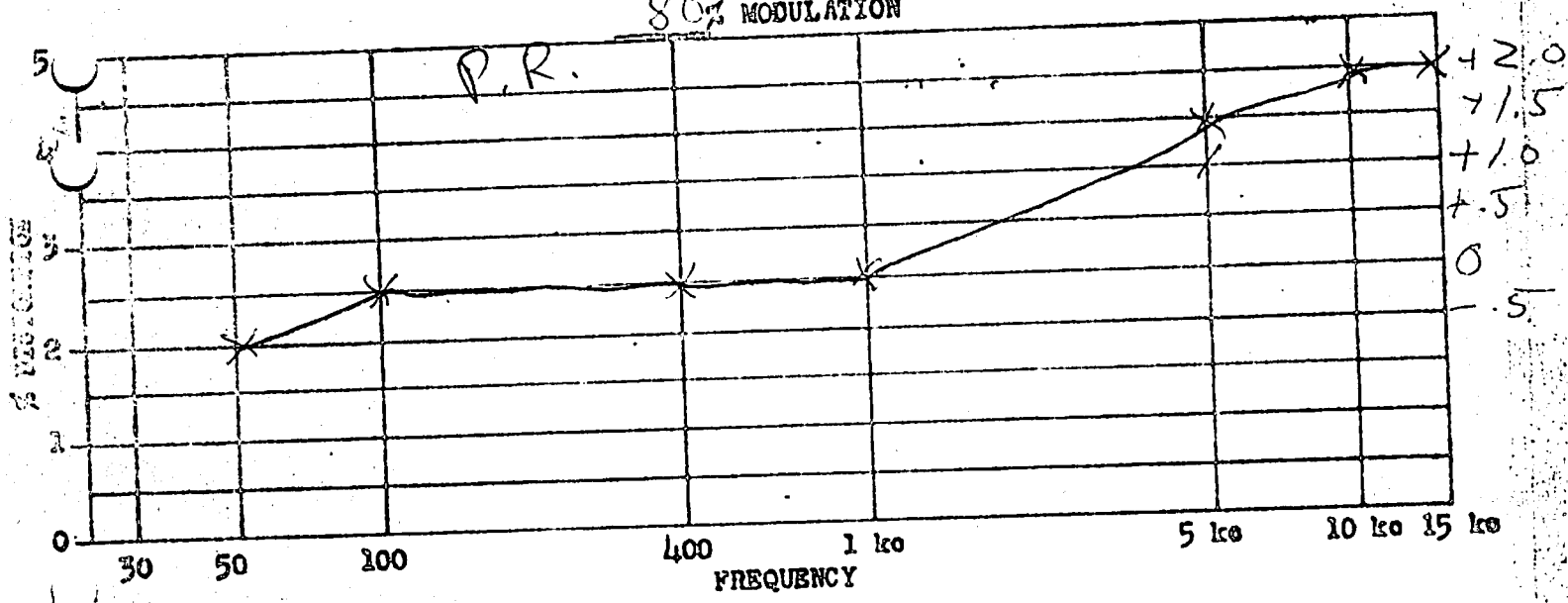


FREQUENCY RESPONSE

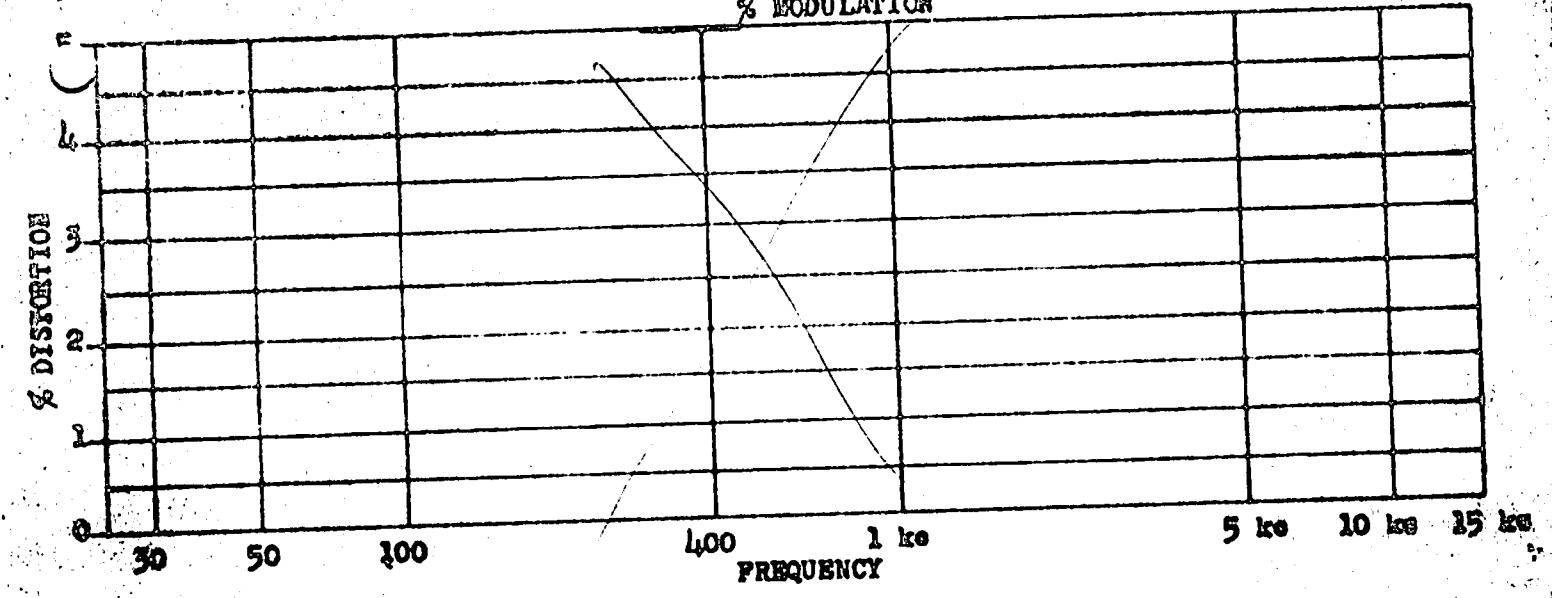
100% MODULATION



80% MODULATION



% MODULATION



10/21/75
10/21/75
10/21/75

10/21/75

ADVICE RECEIVED FACILITIES
NOV 12 1975

