AOR AR7030: Text Files 1997 to 1999

WARNING : Any Modifications or adjustments listed in this text document are done at the owners risk. I will NOT be held reasonable in any way for the validly of any of the information below.

Also remember this text is from the time period between 1997 to 1999 and certain parts may no longer be valid.

Dave N9EWO
****
Date: Sat, 31 May 1997 17:02:18 +0000
From: vbbond
Subject: Re: AR7030 SSB Performance

This is in follow up to my earlier email regarding AR7030 SSB performance. I agree with Mr. Fallows that audio characteristics on LSB and USB will most likely be slightly different due to differences in filter symmetry.

The AR7030, in my experience, does a super job in this regard. The additional "coloration" I refer to exhibits itself as an additional slight "hiss" on LSB (on my unit--I heard the SAME phenomenon on USB on another demo 7030 (PBS set at zero) at the local radio store recently). Now, admittedly, gentlemen and ladies, this is a noise you have to really listen for, but if you do any weak signal SSB DXing you'll will notice soon enough (assuming this manifests itself on other 7030 production units!). On my set, I do not hear it on USB and I can place the receiver in LSB, tune the PBS 2.8kc over into USB, and the noise goes away.

I've been in touch with Richard at AOR UK and he recently referred to a "slight audio colouration due to carrier leakage being different on each side band..." According to AOR, "The filter leakage into the IF is by magnetic coupling between the carrier filter and the selected IF filter, so it is dependent on bandwidth..." This might help explain why I seem to hear it more prevalently on the 2.1kc filter. I'm not sure this is the problem with my particular unit but it is interesting to learn more about the beast and how it functions.
****
Date: Thu, 22 May 1997 21:00:14 -0600
From: xxfallowsj
Subject: Re: AR7030 SSB Performance

Come to think of it, I do not recall ever having owned a radio in which LSB and USB had a similar sound. I had thought perhaps it had to do with atmospherics, e.g. differing quality of noise on the lower bands (where hams mostly use LSB) to higher bands (where hams use USB).

The AOR comes the closest of any radio I have owned to producing comparable sound USB<->LSB when tuned to an AM/DSB station on a specific frequency, but there is still a slight difference in tone. I suspect that the sidebands would only sound the same if there was
(1) perfect frequency alignment and
(2) perfect filter/amplifier symmetry

- both of which are unlikely in our price range. AR7030 comes pretty darn close with its CPU controlled alignment of frequencies to filter bandwidth, but I suspect the differences in sound are primarily due to lack of perfect filter symmetry - which any of you who have tried to actually build a filter would appreciate.
****
Date: Thu, 29 May 1997 13:29:29 +0200 (MET DST)
From: r.b.myklebust
Subject: Experiences with external speakers, sound enhancers etc.?

As a new user of the AR 7030, and as a relative newcomer to serious radiolistening, I would be interested in hearing of more seasoned users experiences with different external speakers, sound enhancers etc. used in conjunction with the 7030.

When I first got the AR7030, I was frankly blown-away by the quality of the internal speaker in the receiver. It appeared quite flat and clean, and I could tailor the sound nicely with the built-in treble and bass controls.

However, since the speaker points up 90 degrees, and since the receiver is in a desktop module with other equipment about 5" above it, this did not work out.

For my receivers, I feed the line output audio into a home brew distribution box which feeds audio to a Sony hi-fi system, a dsp, a digital decoder and a tape recorder.

I recently purchased a used NRD535D with the NVA-319 speaker. Despite its weak reviews, I actually like the NVA-319 very much. It has switchable audio input and three sets of highpass-lowpass filters. I feed audio from both the NRD and the AOR through this speaker, so I can do A-B comparisons (They also share antennas) on the receivers.
John Fallows
****
Date: Mon, 28 Jul 1997 11:19:11 +0100
To: veldhuis
From: aor@aor.co.uk
Subject: Penalty for buying early version of AR7030?

In message: bassoon writes

>I bought an early example of the radio (100137) and
>wish I had waited for a later version. This older one has
>turned out to be very expensive. Since there is a
>commercial AM station about 2km away from
>my house, and down hill at that, my early-serial-number
>model was useless much below 7mHz until I got a
>Lowe preselector. AOR says later versions have "leaded
>components" and don't have the problem. Nice,
>that.

The IP3 around 1.7 to 2.0 MHz drops by about 10 dB, this affected the 1st 500 receivers produced. Investigation (following e-mail with Guy Atkins) pointed to the bandpass inductors saturating so they were changed in later production for leaded types... the result is a flat IP3.... I think this is a better solution than still proucing sets with a notch in IP3... we WILL improve the product where practical.

>Now this:
>The NB7030 enhanced processor with the notch filter upgrade just arrived and the manual says, in part,
>
>"If your set is fitted with a version 10A Processor at present

>it will require re calibration when the enhanced processor is fitted. If this is the case you should contact your dealer who will make the necessary arrangements to have this carried out.

>Do not fit the enhanced processor until this has been done.
>

Please look at the processor number again... closely, I think it is likely to be V11A, not V10A ?? I am certain V10A was only shipped on the 20 or so pre-production units.

If it really is V10A, then TALK with us ! We cannot help out if you do not ask the question :-)

>Granted, it's a terrific radio; but I am not pleased.

We do try and do listen.

Regards, Richard Hillier (AOR UK)

****
The AOR NB7030 and FPU7030 options for the AR7030 - Don Phillips

Whatever your interest in DXing, and whichever magazines you read, you will have become aware of the interest caused over the last 18 months by the AOR AR7030 Communications Receiver. You may well already have firm views on the receiver. You may fall into the camp which thinks that it is the best value for money on the market at the moment, and that it makes a quantum leap in terms of performance, holding the center ground between the very best analogue and digital receivers.

Alternatively you may find it too fussy to be of any use, too small to be convincing, and impractical for practical listening.

It is likely that your present views will become further polarized with the advent of this package of modifications.

What will you get...?

The kit itself comes well packaged, complete with clear fitting instructions and operating instructions designed as an addition to the owner's manual. As well as screws and headers for connection to the existing PCB's, you get a PCB, an updated microprocessor (type AT89C55) and an EEPROM (type 24C64) for increased memory capacity.

So what are you buying....?

In short, a noise blanker, a notch filter, extra memories and the facility for each memory to have a textual identifier, and new timers. It is possible to purchase just the integrated circuits if you don't want the notch and noise blanker. But you can't have the notch and noise blanker without the extra IC's. OK?

Fitting the new bits.....

The PCB takes up about a quarter of the space inside the receiver, looking downwards, being about the same size as the optional filter daughter-board.

If you have fitted this, you will have to relocate it near the back of the receiver: the NB7030 board has to be sited near to the front of the receiver at the right hand side. Essentially to fit all the modifications you have to remove the old microprocessor from its holder and push in the new one, stuff in the little EEPROM into a hitherto unoccupied holder, solder in three multi-pinned headers to existing boards, and screw the new PCB to the side of the case.

Should I do it?....

Not if you are of a nervous disposition. If you have a small soldering iron, a steady hand, and some experience of soldering up PCB's it should not be difficult. Soldering

one of the headers is best described as a bit tricky because it has to be soldered from the top of the board behind the front display. But this is preferable to disassembling the whole front of the receiver. My advice that if your only experience of soldering has been limited to household plumbing, and the instructions are not perfectly clear to you - get someone else to take the stress for you and stay away from the inside. It is also necessary to take earthing precautions when handling the integrated circuits.

On the whole, I think the designer has been skilful in supplying a board which gets in among the audio and IF circuitry relatively painlessly.

What does each of these options do? And how well?

Let's start with what for me is the minor feature, the new timers. The receiver's clock can now be programmed to include date and month. This enables ten "multi-timers" to be set up to switch in to any memory setting over the period of a year. At first sight this might have a limited appeal, but it would be possible to set up one night of unattended Dxing switching in to various frequencies for just a few minutes each. A tape machine could also switch in.

The noise blanker...

You may know of my history of disappointment about the performance of noise blankers. I think this is partly because share prices in blanker manufacturers have remained low ever since the general demise of OTH radar. (Woodpecker). It also seems to be a fact that noise blankers only really come into their own in the presence of strong transient spikes. Most Dxers erect antenna systems away from these anyway. Put it this way, with my usual antenna I only generally receive distant electrical storm interference (crick-crack). I have not been able to notice any improvement to the audio under these conditions with this noise blanker (neither did I on my Yaesu or my Drake). If I connect a short antenna to my modified 7030 and switch on my desk lamp, I hear a loud click. With the noise blanker switched in, the click totally disappears. Clearly it is working – its threshold level can also be adjusted - and it may have some uses, particularly for the listener in noisy areas with limited antenna possibilities.

The notch filter...

This is a beauty, and possibly worth the expenditure alone. The single filter, which operates in the audio circuitry claims to be better than 50 dB over most of the tuning range. It is manually tunable from 150 Hz to 6 kHz. Even when in manual mode, it is semi-intelligent because the tuning rate slows down as it approaches a heterodyne. When manually tuned, the filter locks in a fashion - it will stay tracked to drifting heterodynes. It will also hold its setting as you slowly tune it. It is interesting to put the receiver on AM mode and a wide filter and watch the filter continue to lock on to the 5 kHz whistles as you tune down the shortwave broadcast bands. The frequency at which the filter is operating is also displayed to the nearest 100 Hz.

The automatic notch search mode does exactly what it says, although covers only 300 Hz to 6 kHz. It works seamlessly and is able to lock on to CW signals. The display also tells you whether you are in the automatic mode or the manual "slow tuning - about to pounce on a hetero - mode".

It might have been nice if the notch filter had gone down to, say, 10 Hz to get rid of rumbles caused by slight variations in carriers beating together. In practice the pass band shift can be adjusted to meet this need.

Will I ever fly this thing?....

The notch filter and the noise blankers are called up from menus controlled by the much used buttons at the front. Yes, the menu tree is now bigger, and the same joys and anxieties meet the user of the modified receiver in the same way that you greet an updated program of your favorite word processor. Every improvement means more features, more power, more things to learn and more chances of getting lost. But for me, I found the additions logical and intuitive. For example the notch filter is found by pressing the "FILTER" button and the noise blanker is called up via the "RF-IF" option.

Memories are made of this.....

The receiver's memory capability has been increased to 400. The scanning facility will cover any block of a hundred of these.

Each memory can also store up to 14 characters of text. The full range of ascii letters - upper and lower case - are available including numbers and punctuation marks. But no accents, bold or underlined!

I must admit that I was a little bit prejudiced when contemplating this feature. It did seem a bit of a gimmick, which might have some use for amnesiac broadcast band listeners, and how shall I put it? - anoraks who prefer playing with equipment to using it. However, I went with the spirit of the new facility and spent a couple of hours putting in all the common

African and Latin American short wave stations. So when I now call up memory number 216, it reads across the top of the display:

9.645.00 Bandeirantes B

I have chosen to put in the station name followed by the ITU code. I have found the 14 characters is usually quite enough to be able to identify a station without too much painful abbreviation.

Now, to have memories which tell you the name of the station, however prettily, is to me a limited virtue. (Although it has to be admitted, it looks quite impressive on the display). The additional feature which makes it particularly interesting is the one called the "Ident Preview" option, which can be switched in or out. As I tune my receiver down the 31 m.b. I come near to 9515 kHz. At this point the words

Novas de Paz B

appear, for three seconds, over the part of the display normally occupied by the signal strength indicator. This would remind me of what Brazilian could be found here. The ways in which the identification previews present themselves and can be recalled are rather complicated for me to describe them in just a paragraph although the instruction sheets do a good job.

But I will address the inevitable question - what if I have committed more that one station to the receiver's memories of the same frequency. Well, initially, the one with the lowest memory number shows. However by pressing the MENU button it is then possible to show any other memories on the same frequency.

There is also a clever copy and paste facility which enables memory details to be transferred to other memories - useful if you want to feed in all frequency outlets of Radio Bandeirantes.

I am sure there are many ways this alpha-numerical display could be employed. It could be used as a note book - times, dates of logging, ITU codes and even jokes can be logged in. For example as I tune past the frequency of 5070 kHz the epithet "DANGER BIGOTS!" leaps out at me. Martin Elbe has christened the identification facility "Little Richard" in honour of the AOR UK Sales manager, Richard Hillier. When I tuned my receiver down the band and enquired what a station was, Martin would read the display and say "Little Richard says it is Radio Cora".

Should I buy one....?

In my mind there is no clear answer to this. There are compelling reasons why somebody looking for a good modern receiver should buy a 7030 in its basic form. But at #198 these modifications are not cheap. It depends on most decisions in life concerning expenditure - opportunity cost.

My advice would be this (and I await a deluge of contradiction): If you have the basic receiver and you are a reasonably serious DXer, the first thing you should do is to improve the filters. Do not buy the Collins filters - go straight for the 2.4 kHz 8 pole crystal filter. I use this nearly all the time, and the performance is superb. The next one to get is something like the Murata 3.0 kHz ceramic filter. This is good for Synchrophase listening. These two, together with the daughter board to mount them on them, come to about the cost of the options I have described above.

Then when you have a birthday, go for this new board and software. The notch filter will certainly improve the quality of your DXing. If you are an ace DXer you will have every worthwhile frequency already stored in the memory you were born with; if you are a lesser mortal, the station identification feature could save a lot of time flicking through the back pages of WRTH.

Date: Sat, 24 May 1997 18:37:00 +0200
Subject: FPU7030 and NB7030

I have been using a 7030 with the FPU and NB options installed for the past week.

What I really like is the ID feature.

One thing I don't like about it that is not over yet. I left my unit on continuously for the entire week, and every day I would run the filter alignment routine, and every time I would get a different set of numbers. Right now my display shows that I have a 2.2, a 3.4, a 3.9, a 4.6, a 6.4 and 9.5kHz filter installed. S o I need to do a little thinking before I switch filter, because my immediate reflex is not that of associating the 4.6 label with the 6kHz filter.

The filters are aligned correctly though, because there is really no difference when flipping between LSB and USB. The Syncro is very good and locks on signals like a smart torpedo.

Although this is not the result of a properly carried out test, I am pretty sure that the large ss 40dB of input attenuation. By contrast, my reference receiver, which has a published 3rd ! Order IP of +30dBm and 2nd IP of

just +70dBm, has no attenuator a t all. It does have a preamplifier, but there is no way to cut down to size those pesky signals that trigger the attenuator of the 7030.

Strangely enough this receiver is so quiet that it always surprises me, and yet it has lower published specification and costs almost 7 times as much.

Would I buy the 7030 again? Yes, because I think this is the best amateur grade receiver out there. If you were still undecided about buying it, I would suggest you wait no longer.

Karen
****
I've just started to use my '7030+ again after a couple of weeks gap. It has a Collins 500Hz (700Hz displayed) filter fitted for CW.

In any given mode, cycling through the filters alone, each button push causes only a very quiet click. Equally, presetting the same filter for each mode and then cycling though the modes, each button push causes only a very quiet click.

However changing --mode and filter simultaneously--, the button push causes the 'S' meter to kick to S7 or S9_+10dB, and the loudspeaker to emit a loud click. For example (USB 2.1kHz to AM 3.9khz or AM 5.6kHz) or (CW 700Hz to LSB 2.1kHz) which causes the loudest click. Even with a dummy load attached the radio behaves like this.

I don't remember my '7030 behaving this way before and was wondering if anyone can confirm their '7030 behaves in a similar manner. I would be most grateful for any comments.

Michael Slattery,Sheffield, UK

****
Thanks to all who answered my plea for help!! Took those suggestions and went to the AOR Web Page, and found the fix...resolder "Q47" and it worked!!!

Thanks,

Bill KC4PE
****
On Tue, 15 Jun 1999, Bill Winkis wrote:

> Just turned my AOR 7030+receiver on. Its tuned to 14.178- USB, and nothing...I can hear a little grabled talking in the backround, but?? The "S" meter works. Now switch over to AM -1270.0...and beautiful!!
I've been throught the menu's three time and can't see anything out of line!! Is there a way to -reboot the whole cpu and get back to full default?? Or what's in the wrong position?? Bill KC4PE

Bill, Is your receiver new?
I have same problem when my receiver was 1 month old. The problem was in preselector relay (MW_SW). After I switch to/from MW/SW many times this problem go away.
73, Konstantin.
****
I have an aor 7030+ less than a year old, any problems with the sync, or problems in gen. I am interested!
The 7030+ took it's first tour of the u.k. for about a month or so in march of the new year. The reason was it did not sync properly, and it made high frequency noise's.

I hooked up a new loop ant to my radio and found out it works best in the whip mode than the main antenna lead. But it seems to have the same noise problem again,
Jen.
++++++++++
Hi Paul,

The notch filter works great but the NB is not so effective in my environment (noise from air-conditioner and switching power supply).

I also have the Collins 500Hz mech filter fitted in my 7030+. The filter is good for CW. But the AGC sometimes (always?) pops at the onset of strong CW signals. Though manual gain control could reduce the effect it is not practical under contest conditions.

Takafumi INOUE, Tokyo
++++++++++
Dear AR7030 users,

Last week I had a puzzling experience with my AR7030 receiver. Instead of starting in the normal way, the display indication of "SETUP" + Software Version Nr. did not disappear after a few seconds, but stayed on. The receiver did not function (no sound), although the different display functions could be selected with the front keys. Even after removing and re-attaching the power cable, the situation did not change. Neither did re-loading the default settings.

After repeating a few times switch off/on and moving the receiver to inspect it from all sides, things suddenly returned to normal. Receiver has functioned normally since then. Only explanation I can think of, is a short circuit in the plug for the tape recorder /relays switch at the back of the receiver. Later I found this connection to be loose. Because of the many wires which have to be connected, this plug is a headache for a someone like me with limited soldering experience, and has given me

problems before, but only resulting in no output to the tape, or no relays switch action, but never a malfunctioning of the receiver.

Are there other users who have experienced something similar? Explanations?

Regards, Aart Rouw
++
Hello Dave,

Richard indicated that the ALPS encoder has a metal housing and that the "feel" of the control seems better and more consistent from sample to sample. Richard seemed to attribute the sample to sample variations of the Bourns controls to slight variations of the "sandwich" of the part made during the manufacturing process.

Best,Paul
++
Dave,

AOR is selling an ALPS replacement kit for the AR7030 for 20GBP and are considering redesigning the PCB assembly for the new ALPS encoder later this year. My contact at AOR is "Richard" and he even sent me instructions on how to perform the modification.

Best regards, Paul
++
Well folks, I obtained a replacement spin wheel (bourns encoder) and decided to tackle this on my own.

The difficult part is cleaning the solder out of the holes to prepare for the new part, I have one hole left to clean and I can install the new encoder.

How did the failed encoder look?

The ceramic back plate was broken into 4 pieces. My guess is that the 7030 took a lick on the volume control during shipping when I received it last year from the previous owner. The volume spin wheel died within the first few days of my ownership.

The resistance section of the ceramic back plate was darkened like the one Dave displays on his web page.

I sure hope this doesn't happen again.

Nick Marsh WB4SQI
++
Hi Nick

>Two gripes:
My '7030+ also suffered both these problems from new.

>My set suffers from the well known sync-detector-heterodynes problem...

The sync detector...
... is very susceptible to temperature changes.
... alignment setting controls are electrically rather course.

A change of ambient temperature from that when aligned in production, or, a strong mechanical shock to the equipment in transit, or indeed, a combination of both, could be responsible for the misalignment.

I followed the sync detector alignment procedure outlined at the by AOR UK web site which improved the perceived audio quality. The detector has since maintained zero-beat alignment.

However, some low-level heterodynes remained when tuned to some stations. These vary in pitch and audibility depending on the overall level of transmitter audio compression/modulation, shifts in ambient temperature, and filter/passband/tuning settings.

I have implemented the full temperature compensation modification outlined at the AOR UK web site, which has improved but not entirely cured the heterodyne problem.

Perhaps I should implement the R109 modification as well! If you decide to try it, please let me know your results and observations.

>Secondly, the tuning control; mine has more resistance to turning than I would have expected, in fact tuning the set when it's switched off I can here what sounds like the result of friction. Subjective I know but what does your set tune like? My '7030+ tuning control caused my fingers to fatigue, considerably diminishing the pleasure to be derived from using the equipment.

To affect a cure:
1. Remove the opto-tuning control from the radio.
2. Orient the shaft downwards and squirt some tape-head cleaner into the point where the shaft enters the bush, rotating the shaft alternately left and right, pushing in and out, until the action becomes more free.
3. Maintaining the shaft orientation downwards, allow some time for the control to dry out. Then check the action is still free.
4. Lubricate the shaft/bush very sparingly with light oil.
5. Reassemble the radio.
This has cured the problem on my '7030+.

>Also the rate of slow-tuning is faster than I was >expecting, using thumb-in-dimple and turning at about 1/2 rev per second I'm clocking >up just over 4KHz per rev in USB, 2-3 times what my cheapo DX-394 does.

Maybe I'll get used to the faster tuning and even find it to be a better tuning rate?

Turning the tuning control at this rate invokes the auto speed-up function, which increases the tuning rate in proportion to the speed of rotation of the tuning control. Slow rotation produces approximate shifts of 1.36kHz/rev in SSB mode and 5.43kHz/rev in AM mode.

Hope this helps

Regards
Michael Slattery
++
Hello list,

I'm the proud owner of a new '7030+, my first serious receiver. Initial impressions are very good, especially of the low noise floor and quality audio. Two gripes though: My set suffers from the well known sync-detector-heterodynes problem, did anyone manage to eliminate this by realigning the sync or by bridging R109 with a 4k7 or 10k as recommended by JT?

Secondly, the tuning control; mine has more resistance to turning than I would have expected, in fact tuning the set when it's switched off I can here what sounds like the result of friction. Subjective I know but what does your set tune like? Also the rate of slow tuning is faster than I was expecting, using thumb-in-dimple and turning at about ½ rev per second I'm clocking up just over 4KHz per rev in USB, 2-3 times what my cheapo DX-394 does. Maybe I'll get used to the faster tuning and even find it to be a better tuning rate?

Regards,
Nick Dawes
++
David

We have responded to Robert Gibson directly regarding his observations on his AR7030, however, in the light of your comments to the news group I felt I should bring you up to date on our activities here at AOR Manufacturing.

Contrary to your assumptions, we are not ignoring the problems people are experiencing with the Bourns click encoder used in the AR7030. As you are aware, we have supplied replacement parts under warranty and service where applicable pending finding a more suitable solution.

We have now found a replacement for the Bourns part from a different manufacturer. Unfortunately however, the replacement part requires substantial PCB changes to the control unit to enable it to go into production. These changes are under development at present.

I would still stress that whilst the problem with the Bourns click encoder has occurred on more sets than we would like, it has still only affected a relatively small number of sets in service. The vociferous activities of those who post to news groups are not always an accurate reflection of reality.

This is not an excuse, and our attempts to make sure the part is not used in further productions of the set despite the considerable changes necessary, reflects the fact that we are not complacent regarding this matter.

To reiterate comments from earlier email correspondence, when we chose the Bourns part, it was a careful decision based on the apparent reputation of a respected American component manufacturer. The fact that this part would appear not to have met our expectations is a sad reflection on our initial decision. We are a small manufacturer relying on the co-operation of larger organizations such as Bourns and their agents to maintain our own position as a supplier of a quality product.

If such assistance is not forthcoming, our own position is made very much more difficult.

Regards
Mark W Sumner (Production Controller) AOR UK
++
I have just (like 30 minutes ago) replaced my old Alps encoder with a Bourns optical one. You can get them from RS, Farnell and probably many other distributors. I found mine in a draw at work, they cost about UKP 30 to 50 depending on how many steps they have and if they have a ball race, mine is a 128 step non ball race one.

How to do it....

Top off, front off and knob off. De-solder old control and remove. The hole in the board has to be enlarged to 3/8" and the knob drilled out to 1/4". Connect the terminals on the encoder thus... - to center pad, A to one end pad, B to the other and + to +5C (computer) there is a blank connector position with this labeled or as I did buzz through to the pull up resistor pack just above the encoder and solder it there (two center
pads on the display side on mine). If the knob works backwards swap A & B, mine worked the right way first time but the lid is on now!

As for the spin wheel and volume ones if mine go wrong they will be replaced by me, I hope not to but if I do instructions will be here.

Huw
++
My 7030 is on its third spin wheel and second replacement push button (soft key). Also, the shaft of the tuning encoder is getting slack, causing the tuning knob to wobble. Not good considering the radio is only just over two years old.

I like the receiver, but am worried about the prospect of having to keep replacing these parts.

So what about alternative replacement parts?

Any ideas?

Rob.
++
Nick Marsh wrote:

> Sitting here listening to BBC with my S/N 100125 and wishing the volume spinner knob had not failed as hunting for the remote every time I change the volume is a pain. I hope that AOR addresses this problem in some manner. I know that Drake would!

Wonder if you were unusually hard on the knob, i.e. turned it very fast etc in order for it to fail like that. My serial #101257 has not experienced any failures (yet) with any of the knobs. I use them gently and keep the radio covered with a clean dust cloth when not in use. I agree with you, I hope AOR addresses this issue quickly.

Vince/K7NA
++
Truman wrote:

>> I have a standard model AR7030 purchased almost two years ago and the spin knobs on mine work just fine. Likewise, I use the remote often but not exclusively. I just take care rotating the spin knobs and do not spin them too fast. So far, so good.
>
> Same here -- my serial #137 spinners all still work great, and I use the radio almost every day.
> Questions -- if AOR folks are monitoring this discussion, wonder why one of 'em doesn't inveigh with a response? If the 7030 is indeed coming to the end of its production, does that imply a newer receiver is in the works as a replacement, or is the market just getting
> too small for another over-$1000 shortwave receiver?
>
> cheers -- Truman

Sitting here listening to BBC with my S/N 100125 and wishing the volume spinner knob had not failed as hunting for the remote every time I change the volume is a pain. I hope that AOR addresses this problem in some manner. I know that Drake would!

73
Nick Marsh WB4SQI
++
In message davez writes :
>Hello Mark,
>
>Today I checked the semi-defective encoder (substrate) for the "shorts" that was talked about below I could not find this to be true at least on this one.
>
>However, a interesting find that did appear as I was testing it for general resistance. Of course the resistance was "nil" on the pencil eraser treated part of the track. But if I just cleaned (just a bit of mild solvent) a part of the tarnished track , and tried the ohm meter test again in that cleaned spot, it was a better connection. Not perfect but allot better.

>It seems to me that maybe at least part of the blame on the failure of the encoders that I have on my mind still is >from "whatever it is" that Bourns used to lube the innards going sour(drying out perhaps) ???
>
>Just for the information, The Serial Number of my first 7030 that had a Spin Wheel failure was 100756, and the "Plus" that is now also starting to fail 101570.
>
>Hope this helps..Dave Z
>++
-----Original Message-----
From: Mark Sumner AOR UK
Date: Tuesday, December 01, 1998 9:13 AM
Subject: Bourns click encoder

Dear David,

The problem surrounding the Bourns click encoders is not as simple as it first appears. Not all failures are for the same reason.

Given the number of AR7030 receivers we have sold, you would expect that if the problem were due to tarnishing of the metal deposited on the substrate the service request for replacement encoders would be enormous. Whilst any failure is a great cause for concern, and this particular one occurs too regularly to be ignored, I can tell you that the numbers are not great.

As I think you are aware, we receive no direct input from Bourns regarding any quality issue. Bourns will only deal through their supplying distributor. This has meant that though a number of replacement encoders have been supplied, there seems little desire on our distributor, or

possibly Bourns part, to actually address the problem.

As I said, the failures are not all clear cut. Any sample of this encoder, when opened reveals a similar level of tarnishing to that which your picture shows, whether it is fully functional or faulty. This has led me to investigate the problem further.

The failures I have seen have a short of a few thousand Ohms between the center pin and either of the outer ones. This short seems to be very close to the pins, rather than on the contact area of the substrate.

This is checked when the substrate is removed from the encoder body as the one in your picture.

I would be grateful if you would check this on your faulty example and let me know your findings. It is possible you have cleared the problem when cleaning etc, but the ones I have seen require quite an effort to clear the short. (Nothing is actually visible.)

During design and manufacture the Bourns part has been evaluated and seemed suitable in every respect, it is regrettable that long term this has not been proved to be the case. Ultimately my preferred course of action is to use a different manufacturers part. Unfortunately, the PCB and front panels are designed to take only the Bourns part. No other manufacturers unit is even remotely compatible physically making retro fitting of other parts difficult or impossible. This does not preclude a change being made in any subsequent production however as PCB's etc can be re designed.

Naturally, if we are able to devise a way of fitting say an Alps part in this application we will make this modification available to existing users who's Bourns encoders fail. I would however stress that even most of the earliest sets have not suffered failure, so there is no reason to suppose that a replacement encoder will fail, once it has been fitted.

Best Regards,Mark W Sumner (Production Controller)
AOR UK LTD
****
Hello Dave,

Thanks for the information. At least AOR is being consistent with the responses - they also indicated with Larry that Alps was being considered.

Anyway, $6.30 for an encoder seems rather cheap. I know Bourns can make quality products but how good of an encoder can you make for $6.30? The real goods ones are $50 and up. I think AOR ought to look a little harder and dig a little deeper into their pockets and invest in a better encoder (or at least, suggest a better substitute that the user can go out and buy and retrofit himself). Or - find a way to service the encoder. If there only was some way to disassemble, clean, and reassemble the unit. Since the encoder has 24 positions I cannot believe that this is a high precision unit that cannot be taken apart.

I have not held the actual part AOR uses but if it is like the Ten-Tec part used in their 1254 kit receiver then I have a theory:

Using a knife or Dremel tool the molten plastic that seals the unit can be removed. The encoder can then be separated into two parts - the ceramic base with the contacts and the housing that holds the shaft and wiper. I strongly suspect that the encoder is very much like a volume control except it has a lot of little contacts instead of one semicircular contact. I would then clean the contacts (which I think are silver) and wiper with a Q-tip and Deoxit (to help prevent tarnishing). The encoder can then be reassembled. The housing's plastic posts will fit back into the ceramic base's holes so alignment shouldn't be a problem.

Now here's the tricky part: If the bracket that holds the encoder on the circuit board holds the part SNUGLY against the circuit board then you will not have to glue or clip the encoder back together because the bracket will do that for you! (kind of like holding a sandwich together) That way, you can clean the encoder as needed (if it ever needs it again) and easily.

I hope all that made sense! Working on tube equipment (R-390a series) has made me very resourceful - rewinding coils, taking apart potentiometers, cleaning, and lubing, etc.

Like most companies, they are not going to make a move unless they thinks sales are going to be hurt - that means draw attention to the problem and get as many people talking about it as you can.

Best, Paul
++
Dave,

I just read your news page. When I built the Ten-Tec 1254 kit I noticed that the solder pads on the Bourns encoder for the connections appeared to be silver. In fact, during the kit construction, Ten Tec recommended that the solder pads be lightly scrubbed with a pencil eraser before soldering. If silver is used for the contacts or whatever, inside the encoder, your theory about tarnish could very well be true.

Unfortunately, the encoder appears to be sealed shut at the

manufacturer by melting four plastic posts on the ceramic back.

Real "high quality" encoders, huh?

Best regards,Paul
++
Dear Dave,

Hello from Tokyo. I really enjoyed your web pages. I'm a owner of an AR7030. I love the radio but one of the spin wheels failed after about one year use. I sent the unit to AOR Japan and they replaced the part. I didn't know that not a few users had the same experience too.

Some other comments on my AR7030:

1. Notch filter works great but N.B. is not so effective at least for my environment.

2. AGC sometimes pops at the onset of strong CW/SSB signals.

When I was a high school student NRD505/515 were my dream sets. Today I can afford a 535 or a newest 545DSP, but they don't attract me as much as 505/515 did.

Takafumi INOUE, Tokyo Japan
++
I wish I could afford a 7030, so I could complain about it! Just one, never mind owning 3!!! But I guess it just makes us aware that no matter what the price of the unit, it seems manufacturers will try to shave their costs to bare minimum. So AOR has stuff manufactured in Mexico. Maybe there should be a law that manufacturers would have to list the ingredients of their receivers (or whatever) on the box, like they do for food. So the side of the box in which the receiver comes from will say:

AOR 7030 Mostly made in England except for below parts:

Volume Spin Wheels: Made in Mexico
IF Stages: Made in Korea
RF Stages: Made in Taiwan
Crystal Filters: Made in China

and so forth. Maybe I'm a bit off to suggest this, but it is a shame that such a well reviewed product can have inferior components hidden inside, and it seems the manufacturer (AOR in this case) is unwilling to acknowledge or fix the problem to date. Good luck with AOR and keep the NG informed so we will all know how AOR treats their customers.
Stan
++

Dave,

Last night the second rotary encoder from the left went dead! Great - on a $1300 radio! Fortunately, it is still in the warranty period. I tried AOR-USA, and asked them to install the Notch, Noise Blanker, but they said "special equipment was required for this and they did not have it"!!! They recommended sending it to the UK.

so it goes...

73, Fred
++
Colin Thompson wrote:
>
> AOR UK is still providing excellent service with timely answers to my questions. Twice with in the last week. BTW, they monitor this list and the usenet traffic.
>
> 73, Colin

Colin,

I wasn't aware that AOR monitored the list, that is good news. I hope they take a serious look at the audio gain control problem on the 7030. Mine has totally quit functioning now and all audio adjustment is via remote control.

Makes for a real headache when I need to turn it down to answer my phone in my home office.
--
73, Nick Marsh, WB4SQI
++
>I hope all have not been flamed too much by all my >comments?? Not trying to be a "Downer" here, but I >wanted to let all know what I have been experiencing. I >really do like my AR7030's. But for the cost of these >radio's, I do not feel that the Volume Control should fail >like this either?? And it seems like I'm not the only one ??

>Davez

Thanks for taking the time to tell your experience.

What a horrendous story! With that kind of treatment I'm amazed you stuck with your '7030's. You must really love the radio...

Of course the Volume control shouldn't fail so soon. That is quite out of order, especially on an expensive 'quality' piece of gear.

Michael Slattery G8PNX, Sheffield, UK
++

>The North American Importer/Repair station (EDCO in Va) did the very poor repair attempts (they did actually replace the spin wheel), and about all that AOR UK did was to make a few phone calls to "EDCO" (after I e-mailed AOR UK). After really destroying the units case, stripping the units screws, and also just plan beating it up (gouged and scratched up case), also software gremlins (this after a number of trips back and forth.....)..I wanted some action (how about a new unit after all that was done to it or at least entire new case parts!) and never got it.

As I recall, EDCO's retail outlet was EEB in Vienna, Va. where I purchased my AR7030. When my brand new unit arrived, the lens on the remote control was broken. So, I sent the remote back to EEB and asked for a replacement.

They said they would get a new one out to me within 3-4 weeks (they had to special order it). Finally it arrived at EEB and they mailed me the unit. Guess what? They mistakenly sent me my old broken unit!! This time I was furious and I let the store manager know it in no uncertain terms because my new remote control had been sent to some else and I would have to wait *another* four weeks. During this time one of their techs quit and the other probably worked on the radio mentioned in the above posting. It's a shame, but no wonder the store folded.

With the speed and wide utilization of the Internet, no business that treats customers like that will long survive. Now...I understand that Universal Radio in Ohio markets the 7030 and has a repair facility. Does anyone have any solid experience with these people at Universal in order to recommend for or against sending units to them for repair? It's hard to believe that AOR hasn't established a viable repair center in the USA, given the fact that so many people in the States have purchased AOR-UK products. Any thoughts?

Vince Bond K7NA

++

>Two questions
>
> 1. Using the 2.1kHz filter in SSB modes, PBS set to zero, and no signal present, is the background noise the same in both USB and LSB modes? Even after it has been operating continuously for days my '7030's isn't. Running the filter calibration routine doesn't seem to make any difference!

That can certainly be the symmetry of the filter as pointed out in several messages. The other source of the "problem" could be that the carrier offset is not centered in the filter passband. This adjustment can be done by ear if you know what to adjust.

However, there is a downside. If the filter is not symmetrical, your adjusting the offset may not accomplish very much in real terms and performance.

> 2. Using any filter in any mode, PBS set to zero, and no signal present, is there a broad peak in the background noise that can be removed using the audio notch filter set to 1.8kHz? On my '7030 it gives a slightly smoother quality to the background noise.

You have discovered the frequency of the bulk of the internally generated noise. Kiwa Electronics can upgrade the audio in the radio with impressive results.

Chuck Rippel, WA4HHG

++

From: AOR (UK) LTD
Sent: Wednesday, September 02, 1998
To: Fred Kelcz
Subject: Re: AR7030 noise problem

The LCD on the AR7030 produced a small amount of noise which can be picked up by the radio under certain circumstances. This is most noticeable at lower frequencies when using the set with an internal battery pack, a telescopic whip and no RF earth. All later sets have an extra earthing strap fitted to overcome this problem (from serial number 101713).

To retro fit this extra earthing strap, both covers and the front panel will have to be removed. 6 bottom panel screws, 4 top case screws and 4 front panel screws (2 on front and 2 behind each fitted with 2 spacers).

Once the front PCB is visible, the earth strap replaces the existing one that is fitted from the main PCB to the < > encoder. The new strap is now extended to earth the LCD surround as well.

The new strap is made from a piece of brass shim 5mm X 70mm. Shape the metal to form a curve at one end (radius; approx 3mm). Add a thin piece of insulation to the outside edge of the radius. The curve can now be slid under the LCD screening surround without shorting the LCD contacts (the earth strip hooks around the inside edge of the display screening can and sits between this and the LCD rubber contact pieces).

Once behind the LCD screening, the rest of the strip can be shaped over the < > encoder and bent around the front panel to enable soldering onto the main board earthing point.

The final shape and resting place of the strip will be as shown in the diagram. The strip should be trapped between the encoder and the front panel when this is replaced.

Replace the front panel and case halves.

Regards Simon (AOR UK)
++
Michael Slattery wrote:

> 1. Using the 2.1kHz filter in SSB modes, PBS set to zero, and no signal present, is the background noise the same in both USB and LSB modes? Even after it has been operating continuously for days my '7030's isn't. Running the filter calibration routine doesn't seem to make any difference!
>
Michael:
I have had a similar experience with my AR7030. I find that the amount of background "hiss" is louder and more noticeable on LSB than on USB but is adjustable when tuning the PBT control. AOR UK thought the culprit might possibly be a defective 2.1 kc ceramic filter. I disagree. I checked with AOR distributor EEB (before they left the scene) and they confirmed that earlier units exhibited that characteristic, albeit, you have to know what you're listening for in order to confirm the phenomena. I also tried the filter calibration routine and it made no difference. Thus, I surmised that it is an artifact of the design of the receiver, similar to the little spurs that you will hear on strong signals when you use the sync detector.

Actually, I found that the different hiss on LSB was, to a lessor degree, evident on all filters. So, I suppose you might just live with this and accept it as a characteristic of the beast. Good listening!

Vince Bond, K7NA
++
For those having problems with distortion/noises when the AR7030 is in AM Sync try changing your power supply. When I received my AR7030 Plus last August the AM Sync was totally unusable due to distortion and noise. In addition when the receiver was turned off there was a low level hum from the speaker which would gradually get louder and after a couple of minutes it could be heard all over the house. Sent E-mail to AOR and they suggested the power supply might be the problem. When I fed the receiver from another power supply all the problems immediately cleared up. AOR promptly sent me a replacement supply. Don't know if this will help anyone but it is worth a try.

73 Al-K4GLU, Chincoteague Island, VA
++
I own an AOR AR7030 "Plus" receiver (serial no. 100697; firmware revision 1.6B); hence, I am participating in this mailing list. I began with the base model and recently (10 March 1998) upgraded to the "Plus Performance" model. AOR Manufacturing Ltd. did the work and also installed the UPNB7030 option and the Collins MF500 filter for CW. The six IF filters display as 0.7, 2.1, 3.7, 5.1, 6.1, and 9.5 kHz bandwidths. Depending on conditions, the bandwidths also have displayed as 3.6, 5.0, and 6.5 kHz for the 3rd, 4th, and 5th filter positions.

Some problems that were addressed during the workshop attention during the "Plus" upgrade included a failed 1st mixer IC, hand capacitance (specifically, when in proximity with the LCD display/main tuning dial area), and others. Since the time my set was upgraded, AOR Manufacturing Ltd. developed a modification for the hand capacitance; an additional earthing strap was applied (to the LCD) to my set (one is now fitted as standard to all new sets). The rear external speaker socket was replaced as this was thought to be worn. A problem with the set "tuning it self" was addressed with the addition of the Bournes optical encoder (fitted as part of the "Plus" modification).

Earlier modifications included an adjustment to an AR7030 external speaker component to drive high fidelity speakers (performed by Universal Radio to AOR's specifications) and a CPU upgrade to help eliminate processor noise related to the synchronous detector. By the way, another noise (a little high pitch-almost a sort of whistle) associated with the synchronous detector was eliminated during the "Plus" upgrade. All issues were successfully and professionally resolved; my hats off to AOR for their notable service.

Regarding the recent E-mail traffic on the clock accuracy and precision, I wonder, couldn't one control the AR7030 clock via the serial interface using the Computer Remote Control Protocol? From examining the AOR AR-7030 Protocol document (last revised 05/05/97), one can find that the real time clock registers are available in the battery sustained RAM, registers that appear to be available for read/write operation under program control.

An accuracy factor could be program adjusted using a (user) calculation based on clock drift or the deviation from the correct time. An accuracy factor is the time interval at which one unit is added to or subtracted from the clock's time. This is similar to a routine used by Hewlett-Packard in their HP-41 series (and later series) calculators. A precision error could be accounted for by adjusting for program execution speed and data transfer rate. By the way, my AR7030 clock appears accurate to within a few seconds per month and is easily corrected using the facilities on the AR7030.

Christopher
++

Chuck Rippel wrote:

> Is there anyone else out there who has experience with the HF-150/E?

My HF-150E came about 2 months ago. I would guess that whether you prefer the Lowe or the AOR depends on what's important to you in a radio. To my ears the Lowe sounds better than the AOR on strong, in-the-clear stations, especially for music. I also have an AP-150 which provides a much needed notch filter when using the "hi-fi" setting on the Lowe. Don't have the new Lowe key pad yet, so can't comment on that.

Interesting to note that there was, last I checked, a 3 1/2 to 1 ratio of 7030's for sale on rec.radio.shortwave as opposed to HF-150's. Folks are keeping HF-150's?

The sync lock range on the Lowe is quite narrow, and the radio "rumbles" sometimes when the station fades. My 7030 holds sync lock like a vise on a much wider frequency range, and never rumbles in the deepest fades. When listening to DX stations like North Korea and Indonesia, the 7030 makes more sense out of the noise than the Lowe. On the other hand, the tuning knob on the Lowe is silky smooth and spins easily; my (not plus) 7030 feels like it needs a wrench (spanner) to turn it in comparison. Probably need to upgrade to the new knob....

I bought the HF-150E for use also as a portable. It's much smaller and attracts less attention at airport security than lugging a 7030. The frequency display on the Lowe is easier to read, but I miss the pass band tuning that lets me eliminate teletype interference. I live near three(!) transmitters and the Europa version of the Lowe behaves better than the older one, but still overloads at times from the local behemoths. The 7030 handles the strongest nearby signals with aplomb.

Now if I can just figure out a way to carry a KIWA broadcast band filter on trips, the Lowe will be great....
cheers -- Truman
++
I have found with my 7030+ at rev 15B that it is possible to corrupt the filter calibration tables by starting the cal routine while (whilst) the gain is set to manual control and turned down. This can be fixed by setting the gain to automatic and running the calibration routine again.

One possible guess at the problem/solution is that the gain control selected by the user should be overridden and stored by the calibration routine, and then restored after it is finished.

73 de Jon