

WHAT IS TELEVISION ANYWAY?

Today in Australia, country and city viewers enjoy a minimum of 4 channels in most locations – one government-funded station (ABC) and 3 commercial ones. The government, in the late 80's and early 90's, implemented a program called *Equalisation and *Aggregation. In other words they gave country folk the same choices as their city cousins.

HOW TV WORKS

Few of us realise that air isn't empty. It's full. It's just that we can't see what it is full OF. Radio and TV work because of the radio waves that are a feature of atmosphere. There is a kind of spectrum of these waves, ranging from short waves to very long sweeping ones. The length of the waves determines the frequency, for example, channel 2 has a long, wave and channel 10 has a shorter wave and channel 28 is shorter again - the higher the number, the shorter the wave formation.

Part of the spectrum consists of VHF (very high frequency) signals – the type used by most TV stations in Australian cities and UHF (ultra high frequencies), used for SBS and most new country stations. There are approximately 2900 *transmitters/*translators in Australia today and UHF frequencies are used in approximately 80% of cases.

TRANSMITTING

Equipment in television studios converts what the cameraman sees into signals that are sent to a transmitter located on a high point. The transmitter radiates the information, using the waves in the spectrum mentioned earlier, as carriers. These signals are collected by antennas and conveyed to the TV receiver in the household (or caravan) where they are interpreted into sounds and images.

But it's not that simple. The signals coming out of the transmitter lose their power and fade out, just like waves on a beach. Those placed closest to the transmitters are in Prime signal receiving areas, then the signal weakens slightly to produce Secondary areas. Next are the Fringe and Deep Fringe areas until there is no signal at all. The radio waves are still present of course, but they no longer contain the information that can be interpreted into pictures and sound.

CONSEQUENCES OF EQUALISATION AND AGGREGATION

With the coming of Equalisation and Aggregation, steps had to be taken to spread city signals into rural areas. To achieve this, signal had to be collected and strengthened so country folk could "plug" into it. Installations called translators translate the signal from VHF to UHF, thus creating new centres from which signal can radiate.

Since then, the number of translators (or transmitters) has risen to 2900, **making the same number of TV stations now available.**

Of course, these new country translators have Prime, Secondary, Fringe and Deep Fringe zones around them.

In the Prime area, signal is plentiful and collection is simple enough for simple antennas to prove effective. However, if there are multiple TV sets in a home, a more powerful antenna is needed or an *amplifier used, to boost the existing antenna's performance.

In the Secondary zone, there may be large obstructions that "block" the signal or reduction of signal may simply be a result of distance from the translator. This zone requires a more powerful antenna or a boosted antenna to collect enough signal for just one outlet.

Fringe areas, almost without exception, require additional height for the antenna and proper placement becomes imperative, particularly for VHF but amplification and good antenna design are often adequate for UHF frequencies.

Deep Fringe demands a quality antenna which is also amplified and mounted in the best position. Again UHF signals are easier to pick up in these circumstances than VHF signals due to their penetrating ability and laser-like signal path.

QUALITY PICTURES

Equalisation and aggregation make high quality pictures achievable in most areas. The term "high quality pictures" refers to a sharpness of image equal to the cinema. You shouldn't accept snowy, blurry pictures from your TV set, whether you are a caravanner or a city viewer!

In city homes, the quality of TV pictures has improved considerably since the 1950s when Amos and Andy routinely chatted in a "snow storm". This is the result of a number of technical advancements such as TV cameras that take better pictures in studios, thus strengthening the source images; more advanced technology in the design and construction of transmitters leads to pictures being collected and sent more efficiently; improved manufacture of TV sets produces receivers that give truer, clearer pictures.

But the vital link in this chain is the antenna. Antennas have hardly changed in design for the last 40 years and this is where there has been room for technological advancement.

ANTENNAS

Even a high-quality network can only perform well if ALL of the signal is received. This is the role of the overworked, undervalued piece of aluminium everyone puts on his roof which performs 24 hours per day, 365 days a year, whether the TV is on or off!

A poor antenna collects some signal of course, but a well-designed antenna will capture far more of the information being carried on the wave.

CHOOSING AN ANTENNA

It is important to have the right antenna for the job. As signal is transmitted at different frequencies, different antennas are required.

A viewer living at the back of Bourke with just one channel available who knows there isn't going to be another channel in the near future, could buy an antenna specifically designed to collect the signal from the transmitter/translator for that channel. There would be no need to compromise the design to do more than respond to that one frequency because the antenna would only have to do one job.

However, most country areas already have more than one TV station and with aggregation and equalisation providing an average of 4 channels, antennas have to be designed to be multi-responsive. This calls for great design and engineering to ensure that the improvements in TV set design can be maximised so viewers CAN get clearer pictures.

Money spent on new TV sets is money wasted unless the antenna and the cable are able to supply quality signal to make quality pictures.

CABLE

When the signal is collected, it is carried from the antenna through a cable plugged into the set. If this cable is cheap and poorly made, some of this signal will "leak" out, or other electronic data can "seep" in - such as

interference from household equipment or the chainsaw down the road! And cable wears out too. So if it is more than 5 - 8 years old, it should be replaced with new, top-of-the-range cable.

CARAVANNERS

Aggregation and equalisation have made it possible for caravanners to have access to a variety of TV stations and to receive good, clear pictures 95% of the time.

Caravanners should note that Channel 2 is VHF in the city but generally UHF in the country.

So TV isn't magic. It's the result of carefully conducting signal from the TV camera, to the viewer using a series of links that form a communication chain. If all of the links perform well, the results are excellent.

Clear TV pictures are available in most areas within range of the transmitters and translators, providing viewers have: a power supply, a TV set, a transmitter /translator, good quality cable, competent installation techniques and above all, a well-chosen antenna, properly located.

Expect the best and go for it!