Better Listening On WOI–FM

by Walt Miller

THIS summer you will be able to hear night events over WOI-FM. WOI-FM is really a new radio station which will be on the air from 4:30 to 10 o'clock. You will be able to hear recorded music, sports and news with no duplication of the programs on WOI.

For some time WOI has wanted to give you night programs, but until now it has had to go off the air before sunset each day. A government agency, the Federal Communications Commission, requires that small stations, such as WOI, must go off the air at night so they will not interfere with stronger stations that use the same frequency. The new FM station has been assigned a frequency all its own, and the station will not be affected by the FCC ruling.

Station WOI-FM will use a new method of broadcasting known as frequency modulation. This method depends upon a change of radio-wave frequency to correspond with changes in sound-wave frequency.

Radio Waves

The ordinary method of broadcasting depends upon a change in the *strength* of the radio waves which is made to correspond to the change of sound-wave frequency.

The new technique of frequency modulation, or FM, is rapidly becoming common throughout the country. The main reason for this is that FM broadcasting gives clearer, more natural music and freedom from radio static and noise.

Static is caused by interfering radio waves. Any electrical spark will produce AM radio waves but not FM radio waves. FM receiving sets are built to interpret FM waves only; so whenever lightning or streetcar trolleys, switches or motors cause electrical sparks, the AM radio waves that are produced will not interfere with the FM waves sent out by the station.

A local Ames radio-dealer likes to compare radio broadcasting to light signalling. Joe could signal Mary with a light by changing its brilliance. This is similar to AM broadcasting since the radio signals depend upon strength variation.

Mary might have trouble telling how bright the light was when light from other houses or passing automobiles interferes. This is much like radio interference, or static, found in AM radio.

If, however, Joe signalled Mary by changing the color of the light, the light from other sources would not interfere, because Mary could always recognize the color of the signal light. This is similar to FM in which the frequency, or "color," of the waves is changed.

Discriminating music-lovers and critics will find a great improvement in musical quality over ordinary radio when they listen to FM programs. You will find that the music on FM radio will sound more real, as though it were played right in your own room.

Natural Overtones

The reason that FM broadcasting sounds better than AM radio is that FM radio transmits the natural overtones, or harmonics, found in music better than ordinary AM radio.

The quality of a musical note depends upon the overtones, or harmonics, that are produced along with the pure note which determines the pitch. Many harmonics cannot be sent by ordinary AM radio, because they are too high—out of the range of this kind of radio. FM radio, however, will transmit almost all of these higher harmonics.

You cannot receive FM programs with an ordinary AM radio, but you can buy fairly inexpensive FM converters for sets that have a phonograph connection or outlet. Since stations all over the country will eventually have this service, it is a good idea, next time you buy, to insist that radio dealers show you a set that already has FM incorporated in it.

Outside Antenna

While you are in the Ames area, you will not need an outside antenna to get WOI-FM. A number of Des Moines and other stations can be heard in Ames by using a small folded-dipole antenna in the attic or on the roof. You can buy an aerial such as this from local dealers for less than $10. Other types of antennae are not recommended by radio engineers.

Richard B. Hull, director of WOI, says the new station with a radiated power of 15,700, will be one of the strongest FM stations in the Midwest. A new broadcasting tower, now being built on a college farm 3 miles west and south of the campus, will be as high as any radio tower in this part of the country.