

## More on 6-12

### STILL ANOTHER APPROACH TO THE PROBLEM

By PHIL DURYEE\*

The 12 volt change-over problem affected some in 1955, but now almost every mobile radio user is faced with 6 volt radios and 12 volt battery systems. Actually this is not a really tough or expensive problem, but it is one which every system operator and/or engineer must consider thoroughly in order to make sure that the most effective and economical solution is picked in consideration of the problems of the particular system involved.

Some of the factors to be considered are:

1. Cost of modification.
2. Cost of replacement.
3. Age of equipment.
4. Retention of interchangeability during change-over period (particularly important if all cars are not being replaced within a short time).

The cost of modification varies greatly between models. The material required is usually the smallest part of the total cost. Labor cost varies with model of radio as well as with pay rate of technicians, method of accounting, etc. An unfortunate factor is that the extra labor for change-over comes at the same time as the change of installation to new vehicles which often is a problem in itself.

One method of solving the problem which has proven quite satisfactory is to tap the battery at 6 volts and provide means of automatically keeping the battery balanced. This system has several advantages, namely:

1. Low cost.
2. Retains interchangeability.
3. No moving parts to maintain.
4. No modifications to radio.

This system has its greatest advantage in that its low cost justifies use with radios that are of such an age that conversion costs would be questionable, particularly in view of split channel proposals. Its low cost also permits its

use as a method of allowing prompt installation of sets in new vehicles with conversion to follow at a later date as shop time is available. A further consideration reported by many users is that it can be installed by any competent electrical personnel while conversion must be accomplished by someone familiar with the radio itself.

A quick analysis of this system shows that the battery load is balanced by a load equal to the stand-by drain of the set being automatically connected across the top half of the battery by a relay connected to operate with the "A" power relay of the set. The question then arises about what happens during periods

of extended transmissions when the lower half of the battery would be discharged more than the upper half. A further analysis shows that the stand-by drain of the set and the resistor adjusted to the same effective resistance form a voltage divider so there will be a charging current flowing into the lower half of the battery until the charge is equalized. This system is effective enough so that a 6 volt siren may be connected to this same tap and the battery balance is maintained by the stand-by drain of the radio.

The principal disadvantages that have shown up during the several years our adapter kit has been in use by large system operators have been of a simple mechanical nature. These are, namely: (1) that care must be taken in making the 6-volt connection to a 12-volt battery and (2) the sliders on the adjustable resistor must be checked for good contact. However, taps made per suggestions contained in the instructions enclosed with the Ratelco AK-612 and AK-1224 kits have proven completely satisfactory. The matter of checking the sliders on the resistors is similar to the problem of cleaning firewall fuses and it is recommended that the two items be checked at the same time as part of a regular routine inspection.

## Radio Old Timers Roundup

### MEETING DEDICATED TO THE 50th ANNIVERSARY OF THE GRID VACUUM TUBE

Ed Raser, W2ZI, General Chairman, 1956 Old Timers' Nite, advises that all

#### RAY D. O'KOPP SAYS—



"SPRINGFIELD CAR 257 TO MEXICO CITY — PLEASE TELL NOME, ALASKA, TO HAVE ATLANTA INFORM OUR HEADQUARTERS WE WILL BE THERE IN FIVE MINUTES."

are welcome to the Delaware Valley Radio Association Eleventh Annual Old Timers' Nite Roundup and Banquet. This event will be held April 21, 1956, in the Grand Ballroom of the Stacy-Trent Hotel, Trenton, New Jersey. The party will be STAG.

This annual gathering is held to honor the early living pioneers of wireless and to reminisce on their experiences of yesteryear. On this evening one may enjoy a night of good clean fun and meet fellow operators in a spirit of fraternal goodwill and fellowship. The "Nite" will be dedicated to the 50th anniversary of Dr. DeForest's grid vacuum tube, 1906-1956, the key to the vast electronics industry of today.

A turkey dinner will be served promptly at 6:30 p. m. in the hotel ballroom. The program will include personalities in early radio and wireless history. A special award will go to the "Grand OM," whose radio operating experiences date back to the earliest days of wireless.

Tickets are by reservation only. Write to Ed G. Raser, W2ZI, 315 Beechwood Avenue, Trenton 8, New Jersey. The price is \$5.00 per man by mail or \$6.00 at the door.

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