

The Troubadour's Art The Empire Broadcasts One Guinea Prize

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Tarascon (the sister-in-law of the Baron Raimon); and this lady, with that sharp perception in sentimental matters for which women are justly credited, immediately smells the correct rat, and acts up to the occasion.

The Baron Raimon is delighted, and on returning to his own castle he proceeds to inform his wife of what has taken place. We can almost imagine the baron's lady exclaiming: "How you do surprise me!" The immediate danger then is surmounted in that way. But the luck of the young troubadour cannot be expected to last indefinitely. In the exuberance of his relief he composes a very amorous set of verses and sings them in the presence of the baronial court. They are of course really addressed to Raimon's lady under a fictitious name, but the baron, who up to this moment seems to have been a very stupid baron, at length wakes up completely and suspects rightly to whom the song is addressed.

Jealousy flames up in his baronial heart—which is not to be wondered at. He again makes occasion to meet the young troubadour in a lonely spot in the wood, and there slays him.

Most of us would think that was enough in itself. But the baron thinks otherwise. He therefore cuts off the young fellow's head, tears out his heart, and returns to the castle. Here he contrives to have the heart roasted and served up for dinner like the most innocent joint. He next persuades his wife to partake of it. She accepts a helping and eats. As soon as she has consumed her portion, the ferocious baron tells her the secret of the meat, asking her at the same time how she enjoyed its flavour. In order to convince his lady of the genuineness of his statement, at this very moment the husband produces the severed head of the lady's lover. The lady's reply to the brutal question of her husband as to the flavour of the meat she has eaten is a lesson in dignity unsurpassed in romantic records.

She replied thus: "It was so good and savoury," she said, "that never other meat or drink shall take from my mouth the sweetness which the heart of Guillem has left there." On this reply, the husband rushes at her with drawn sword, but she swiftly evades him and throwing herself from a balcony to the ground beneath is instantly killed.

This romantic tragedy, became not only a national but an international question of the day. The news of it created consternation and disgust everywhere; "and," says the chronicler, "all the friends of Guillem and the lady, and all the courteous knights of the neighbourhood, and all those who were lovers, united to make war against Raimon."

Matters did not stop there. Alfonso, the King of Aragon, actually invaded the feudal territories of the murderous Baron Raimon, seized his strongholds, took Raimon prisoner, and kept him in close confinement of his life. Even this did not finish the affair, for King Alfonso of Aragon caused the whole of the offending baron's possessions to be distributed among the relatives of the two dead lovers.

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voltage in the neighbourhood of 150. The filament current is drawn from two high-capacity six-volt accumulators.

The panel on the extreme left is the power supply panel, with various meters to show the condition of both sets of batteries and for adjusting charging rate.

The next panel is perhaps the most interesting. At the bottom may be seen the twenty-four rheostats which control the filament voltages of each of the twenty-four valves. Above these



Stan Pritchard,

IYA baritone, who will sing three solos on Monday, January 2.

—S. P. Andrew, photo.

are three rows of switches for throwing valves in and out of circuit and for making quick tests. The black box at the top houses the alarm relay, while just underneath it may be seen two rows of white panel lights twelve in each row. Each is labelled with the name of the valve with which it is associated. Should a valve burn out, the alarm sounds and one of the panel lights shows red. Thus a valve which has broken down can be located at a glance.

Defects in any of the anode circuits are also revealed by the 130-volt lamps, which may be seen in rows along the top of the main panel. These also afford protection to the batteries and the rest of the circuit, for should a short-circuit occur, the "B" supply is not shorted, but the lamp in the faulty circuit takes the load and lights up. Thus these lamps do double duty as protectors and fault indicators.

On the main panel are mounted the controls of the receiver itself, which is a superheterodyne specially designed by the Post and Telegraph engineers. A signal frequency oscillator and an intermediate frequency oscillator are also included for testing or lining up the set.

The receiver covers from approximately 22-38 metres, two sets of plug-in coils being used. Many will no doubt think that the set would be almost impossible to tune, but it really was just a matter of a little experimentation when the set was first placed into operation. A calibrated oscil-

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1930.—So death occurred during or between those dates, and as the date is 30x, it is divisible by 30. The date can only be 1920, which, divided by 30, gives 64. So in 1900 he was 44 years.

A Curious Multiplication.

The number is 987,654,321, which, when multiplied by 18, gives 17,777,777,778, with 1 and 8 at the beginning and end. And so on with the other multipliers, except 90, where the product is 88,888,888,890, with 90 at the end.

The Singular Shilling.

Take hold of two diagonally opposite corners of the handkerchief, with the thumb on the upper surface of each, and stretch vigorously. The handkerchief will be found to form a tense fold, or "overlap" on either side of the coin, and if the handkerchief, still in this condition, be lifted into a perpendicular position, the shilling will remain gripped in the fold, and will not fall.

Ten Halfpence Puzzle.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10 halfpence. Place 4 upon 1, 7 upon 3, 5 upon 9, 2 upon 6, and 8 upon 10.

Easily Done, But How?

Fold the paper exactly across the centre of the hole, then take it in both hands, and ask some one to drop the penny into the fold. Let it rest just over the hole, its lower edge projecting below. Bend the corners of the paper slightly upwards. This elongates the opening, and if the movement is continued, the penny will, after a second or two, fall through by force of its own weight. The paper remains uninjured.

No. 2 Competition Winner's Effort.

Order of pictures E, H, F, D, B, G, A, C.

A picnic at the seaside was the order of the day, and by 7.30 a.m. the commodious char-a-banc with hood down so that everybody could get the fullest enjoyment from the fine summer's day stood waiting outside the garage. The glad young things began to arrive a few minutes later and piled aboard all ready for the day's fun. Little time was wasted in getting away, and everyone was in a

lator operating on the frequency of the desired station is placed into operation, and the set tuned to this. Of course, once the reading of several stations are known, any others are fairly easily located.

A special aerial system is employed which is very effective in cutting out unwanted transmissions. Its efficacy was strikingly proved to the engineers while experimenting one day. As Wellington readers know, Mount Crawford is on a point jutting out into the harbour. One day a motor-boat circled the point, travelling from the eastward, round the point to the westward. While on the eastward side the interference from the ignition system was quite clearly picked up, but when the boat had rounded the point toward the westward side, however, no trace of interference could be detected.

The signals picked up by this aerial pass through the receiver, are detected and amplified, and then travel by landline to the terminal equipment in the Stout Street Telephone Exchange Building. The programme is then plugged through on a landline to 2YA's studio and then by special cable to the transmitter on Mount Victoria.

high state of expectancy. There was no stopping—not even at the "Washout" inn (all that was aboard), so that by the time the sea was reached everybody greeted it with a whoopee of delight. The sky was clear, there was hardly a breath of wind, and the sea was like a mirror—a glorious day for a picnic.

The morning passed all too quickly, but by lunchtime everybody was ready for their meal, and spirits soared even higher by the aid of the filled glass. Someone proposed a toast, but used his left hand, preferring to keep his right near his "money" pocket—evidently he did not trust his company.

But the sea beach was not all that was planned for the day, and the party, many of whom found the company of the other sex indeed convivial, again boarded the bus, which by nightfall arrived at the "Gay Birds." And wasn't that name apt! With the help of an obliging waiter the party went with a swing: some danced on the lawn under the light of the moon, and the others—well, they didn't. The moon was a lot lower in the sky when the char-a-banc arrived back at the garage, and the party, still in its newly-formed twos, broke up after what all declared was an excellent day.

Radio to a Submarine

A New Invention

AFTER months of experimenting with a special triode valve of 150 kilowatts and a co-operating pilot valve, two engineers have succeeded in making possible perfect transmissions of radio messages to a deeply-immersed submarine. To date the new 150-kilowatt valve, just completed at the Berlin Works, Malmaison, France, is the only one in the world, the most powerful of its kind ever constructed, and the only one which has made possible perfect transmission between the earth and undersea vessels. It is designed to work on a wave-length of 10,000 metres. This valve, however, is only one unit in a very intricate and delicate set of co-operating apparatus. The 150 kilowatt valve only amplifies waves created by another valve of similar construction, but with a power of 40 kilowatts. The chief aim of the engineers was to perfect a system of valves that could quickly and easily be taken apart in order to verify that the electrodes were in good condition and working properly.

For this the "vacuum" of the valve has to be maintained to a suitable degree. To make this taking apart possible required perfection in the arrangement of the joints. The upkeep of the vacuum is obtained by the permanent use of a "molecular" pump.

The assisting "pilot" valve of 40 watts keeps up the oscillations of the circuit, and keying is effected in the circuit of the amplifying valve, which feeds directly into the aerial. Seven thousand five hundred volts is applied to the plates of the triodes by a continuous current supply by dynamos or by mercury rectifying apparatus. The power arriving at the aerial slightly exceeds 100 kilowatts. Starting the gear at a maximum power takes 50 minutes (the same time required to produce the vacuum in the tube from the starting point of atmospheric pressure). If the lamp should be momentarily stopped, one or two minutes is sufficient to start it again if the filaments are extinguished. If they are kept alight it requires only a few seconds.