

- 8.28: 'Cello—Mr. Harold Beck, (a) "Nocturne" (Tschalkowski); (b) "March On" (Benjamin).
 8.32: Bass—Mr. Malcolm Miller, (a) "I Would I Were a King" (Sullivan); (b) "Lie There, My Lute" (MacCunn).
 8.37: Flute—Mr. A. E. Hutton, "Adagio" (Tulou).
 8.42: Soprano—Miss Lottie Colville, (a) "The Enchanted Forest" (Phillips); (b) "The Rain Fairy" (Arundale).
 8.47: Tenor—Mr. Douglas Suckling, "Dost Thou Not Breathe the Fragrant Scent" (Wagner).
 8.50: Instrumental—Studio Trio, "Allegro Vivace" (from "D Major Trio").
 9.2: Weather forecast and station announcements.
 9.4: Alexandre Glazounov and Orchestra, "The Seasons Ballet, Autumn": "Finale—Les Bacchantes" (Glazounov).
 9.10: Mezzo-contralto—Mrs. Sidney Bryant, (a) "I Sometimes Think" (Liza-Lehmann); (b) "The Wordly Hope" (from "In a Persian Garden").
 9.15: Tenor—Mr. Douglas Suckling, (a) "Echo" (Somerset); (b) "The Last Song" (Rogers).
 9.21: Violin—Paul Godwin, "Concerto No. 2 in D Minor" (Wieniawski).
 Trio—Paul Godwin Trio, "Legende d'Amour" (Bece).
 9.27: Bass—Mr. Malcolm Miller, (a) "Son of Mine" ("Freebooters' Song"; Wallace); (b) "Oh That it Were So" (Bridge).
 9.32: Septet—Septetto Iwan Wassiljeff, "Grandfather Pachom" (Traditional).
 9.35: Flute—Mr. A. E. Hutton, "Concerto" (MacFarren).
 9.41: Soprano—Miss Lottie Colville, (a) "Magdalen at Michael's Gate" (Lehmann); (b) Negro Spiritual, "Were You There?" (Burleigh).
 9.46: Instrumental—Studio Trio, (a) "Serenade" (Mozart); (b) "Tempo di Minuetto" (Godard).
 9.58: Lucerne Kursoral Orchestra, "Dance of the Flowers" (Debussy).
 10.2: God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SUNDAY, MAY 10.

- 3.0: Selected recordings.
 5.30: Children's Song Service, conducted by "Big Brother Bill."
 6.15: Instrumental recordings.
 6.30: Relay of Evening Service from St. Andrew's Street Church of Christ. Preacher: Pastor W. D. More. Choirmaster: Mr. H. W. Mackenzie.
 7.45: Selected recordings.
 8.15: Relay of Concert Programme from Station 3YA, Christchurch.
 10.0: God save the King.

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—SUNDAY, MAY 10.

- 6.0: Children's service.
 8.15: Studio concert.

Schedule of W3XAL

Description of Plant

THE short-wave experimental broadcasting station of the Radio Corporation of America, W3XAL, managed and operated by the National Broadcasting Co., is located in the transmitting building of WJZ at Bound Brook, New Jersey, and has to date transmitted the programmes of this station. The working frequency of W3XAL is 6700 kc., or 49.18 metres, and power input to the antenna ranges from 12 to 15 k.w. Regular hours of operation are from 5.00 p.m. to 6.00 p.m. (Sunday from 5.0 p.m. to 6.45 p.m.), and 11.00 p.m. to 1.00 a.m. E.S.T. (about 10½ hours behind N.Z.T.) daily, although the transmitter is also frequently operated during other hours on programmes of special interest.

The short-wave equipment consists of intermediate and power radio frequency amplifiers, modulator, speech amplifiers, and radiating system, a brief description of which follows:—

One of the four 3050 k.c. quartz crystals with constant temperature regulation controls the frequency of 5, 75, 250 and 500 watt intermediate radio frequency amplifiers, the 75 watt being a shield grid stage and acting

as buffer and frequency doubler. These stages in turn excite the grids of four 10 k.w. UV-854's in a push-pull output stage, which is capable of delivering 20 k.w. to the antenna. Regeneration in the 250, 500 and 20 k.w. stages is prevented by proper neutralisation.

Constant current, or Heising, modulation of the plate power to the power amplifier is provided by ten 10 k.w. UV-854's in parallel, voice frequencies being supplied to the grids of these valves from 500 watt speech amplifiers, preceded by a 5 watt line amplifier. All audio valves are operated at values which will cause no distortion on peak modulation.

Plate power to the modulator and power amplifier is supplied by twelve 10 k.w. UV-855's in a three phase, full wave circuit, two valves in parallel on each half phase, and to the intermediate radio frequency amplifiers and speech amplifiers by two 1 k.w. single phase, full wave rectifiers, employing UV-856's. A similar rectifier supplies grid bias to all radio frequency valves. Filament current for all valves is obtained from a 23 k.w. 23 volt generator, with the exception of the speech amplifiers, which are supplied from storage batteries.

A half-wave vertical Hertz radiator is mounted on a 105 foot wooden mast, the lower end being one-quarter wavelength, or 38 feet, above ground. This is conductively connected to the output stage of the transmitter through a 700 foot double feed line. Provision is made for antenna tuning and coupling adjustment.

Dunedin Radio Exhibition

(Continued from page 3.)

ready a host of new things which people will want, and which will put more people to work. Not the least of these are in the field of radio.

"This year, therefore, we anticipate witnessing a steady advance in radio in New Zealand. The service which the Broadcasting Company gives has been steadily keeping abreast of the public's response.

"Every year has seen a great extension in hours and in the standard of the entertainment and information broadcast. Last year, for instance, that is, the year ending March 31, the four YA stations were transmitting for ap-

DX COMPETITION.

Entries for second period close June 30. Certificates for winners in each district. Verifications are required for every station logged.

proximately 9400 hours. In that period of time there were 6250 different sessions—afternoon sessions, news sessions, children's sessions, dinner music, evening concerts, church services, sporting relays, overseas re-broadcasts, and others. One-third of the total number of hours were devoted to evening entertainments. The afternoon concerts occupied more than one-fifth of the service. The hours devoted to musical items totalled 5070.

"Anyone curious to know how many individual items were sung or played during that period is thus provided with an interesting arithmetical problem. If a total number of items in the vicinity of 70,000 be arrived at, the calculator can consider himself not far wrong. During the past year, 31 re-broadcasts of overseas stations were carried out. Next to the concert programmes, the children's sessions claimed most time, then came the dinner music, after that the news sessions. Sporting broadcasts, numbering 180 from all stations, represented 6.8 of the total broadcast hours, and church broadcasts 3.3.

"The Broadcasting Company's service is a happy mixture of information and entertainment, and an endeavour is made to cater for all tastes some of the time, for it is not possible to please all tastes all of the time. Lately, the Broadcasting Company has lent its service to the Department of Education for the purpose of broadcasting lecture-lessons to the schools throughout New Zealand. Every Tuesday afternoon, from 2 to 3, these broadcasts by officers of the Department of Education take place. This is but the embryo stage of education by the aid of radio broadcasting.

"A few months ago we at 2YA had the pleasure of introducing to listeners an interesting departure in the way of entertainment. I refer to the international programmes which are broadcast every Wednesday evening. The presentation of these exclusive programmes was made possible by the visit which Mr. Harris made overseas last year, when he arranged for the provision of feature attractions, recorded by artists of international re-

pute. So popular have these Wednesday evening programmes been, that in deference to many requests it has been decided to broadcast them from 1YA, Auckland, and 4YA, Dunedin. The first broadcast will take place from Dunedin on Monday, May 11.

"In respect to programmes generally, I might say that the efforts of the Broadcasting Company in the direction of securing entertainment for listeners are unceasing. The difficulties in the way are very great. The Broadcasting Company enlists the services of the best available artists in New Zealand. Last year, for instance, over 1500 contributed to the programmes, quite apart from bands, orchestras and other combinations.

"In conclusion, I would again, on behalf of the general manager and staff of the Broadcasting Company, congratulate the radio dealers of Dunedin on their enterprise and extend to them our best wishes for the success of the exhibition."

World Radio News

THE discovery of a short-wave receiver hidden beneath a gangster's motor-car in America has brought about a prohibition against the carrying of short-wave receivers on private motor-cars. The car in question was able to intercept messages from the police headquarters to the patrol wagon and thereby elude capture.

WHILE testing a new "talkie" installation in a Newcastle picture theatre recently, the engineers were amazed to hear, instead of an actor's voice, that of a clergyman preaching a sermon. Though there is no wireless apparatus in the theatre whatsoever, a powerful broadcasting station is located nearby, and it is thought that in some inexplicable manner the transmissions are picked up and reproduced through the "talkie" apparatus. Pending a solution of the mystery, the theatre remains an exponent of the "silent" screen.

A SHORT time ago the Danish Parliament passed a law concerning power interference. If one or more listeners are troubled by an electrical installation in their neighbourhood and the Electrical Commissioner certifies that such interference cannot be overcome without considerable expense to the listeners, the owners of the offending installation must take effective measures to remove the cause. Special permits, however, are issued in the case of apparatus that can be proved to function only imperfectly when such measures to reduce interference are employed. Under these circumstances the equipment must not be used on Sundays or holidays, nor between the hours of 6 p.m. and 12 p.m. In those cases where the trouble is brought about by defective parts, these must be remedied. Listeners themselves are forbidden to use their receivers in a manner calculated to cause annoyance to others. The Controllers of the Radio Council and the Electrical Commission have the right to examine any electric installation, including wireless receivers, in any house or building. Infringement of the law is attended by fines which go toward the betterment of radio service.