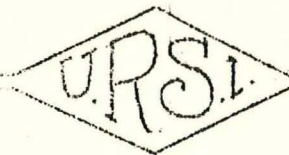


UNION RADIO - SCIENTIFIQUE INTERNATIONALE

International Scientific Radio Union



BULLETIN MENSUEL

MONTHLY BULLETIN

FEVRIER 1939

FEBRUARY 1939

Informations. . . . .	p.	2
Documents. . . . .	p.	2
Ursigrammes Américains. . . . .	p.	6
Ursigrammes Français. . . . .	p.	11
Ursigrammes Italiens. . . . .	p.	15

I N F O R M A T I O N S

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COMPTES - RENDUS DE L'ASSEMBLEE GENERALE DE VENISE-ROME 1938 :

Nous signalons aux Membres des Comités Nationaux de l'U.R.S.I. que le fascicule 1 du Volume V des " Comptes-Rendus des Assemblées Générales de l'U.R.S.I." contenant les mémoires présentés à l'Assemblée de Venise en Septembre 1938 est sorti de presse depuis le début de Janvier 1939 .

Le fascicule 2 contenant les Procès-verbaux des réunions des Commissions sortira très prochainement.

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D O C U M E N T S

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COMITE NATIONAL FRANCAIS

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N° 533 : Evanouissements signalés dans les Ursigrammes Japonais en Novembre 1938.

Complément au document n°11-38 - Evanouissements brusques signalés par Beyrouth pour Novembre 1938.

Evanouissements brusques et renforcement des atmosphériques du 1er au 31 Décembre 1938.

N° 534 : Complément au document 11-38 - Renforcement d'atmosphériques.

Complément au document 12-38 - Evanouissements signalés par Saïgon.

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## COMITE NATIONAL JAPONAIS

N° 532 : REPORT OF RADIO RESEARCH IN JAPAN - Vol.VIII. N°2 -

October 1938.

CONTENTS :Sentron - A New Tube for Ultra Short Waves, by S. Uda -

Summary : A new ultra short wave tube called the " Sentron " in which the thermionic electrons are supplied from the side into the split anode cylinder is described. The results of two types of oscillations obtained with the tube are given. With type A oscillations, approximately 1 watt for wavelengths of from 10 to 13 cm., 0.2 watt for a wavelength of 7 cm., and 0.1-0.2 watt for a wavelength of 5 cm. were obtained. A large output and high efficiency could be obtained with type B oscillations. An output of about 50 watts eff.88%, with 17 cm. wavelength, was obtained, the maximum output being 80 watts, 73% eff. with 17 cm. wavelength, in addition to which outputs of 30 watts, 60% eff. with 15 cm wavelength, and 16 watts, 20% eff. with 11.5 cm wavelength, and more than 10 watts, 40% eff. with 10 cm. wavelength, were obtained. The shortest wavelength obtained by type B oscillations was 8 cm.

A Sentron with grid especially suitable for modulation purposes is described.

A Special Sentron, fitted with an electron lens which act on the electrons from the filament, focussing them into the anode cylinder is also described. The results obtained with a split side plate type of Centron, having an electron coupled secondary circuit are given.

Finally, some notes on the magnetic-field tube amplifier, especially as a power amplifier, are given.

Intercomparison of the Absolute Values of Frequency Standards-Ninth Report of the Sub-Committee for Frequency Standards, by

R. MITSUDA, K. TANI, and Y. KUSUNOSE.

Summary : It was found from past tests that the frequency standards maintained independently at the Electrotechnical Laboratory, the Military Scientific Laboratory, The Naval Technical Research-Department, and the Iwatsuki Radio Receiving Station, agreed within  $3 \times 10^{-7}$  for short periods of about half a day. The purpose of the present test was to determine the relative deviations of these standards over a period of

about one month. Comparisons were made from November 15 to December 18, 1937. By measuring the absolute values of the standards and comparing their fractional deviations the probable error of each standard was obtained. Exclusive of the standard at the Iwatsuki Radio Receiving Station, which did not show a relatively high stability, the standards were found to agree within  $3 \times 10^{-7}$  during the entire test period.

Multiple Courses of the Aeronautical Radio Range Beacon, and the Causes of the Phenomenon, by S. YONEZAWA and K. HIRAOKA.

Summary : This paper describes the multiple course phenomenon observed by aircraft in connexion with the Kagosima aeronautical radio range beacon, and gives a theoretical treatment of the causes of the phenomenon.

Direction Finding of very short radio waves of 20 to 50 megacycles per second, by K. MAEDA and K. NISHIKORI.

Summary : This paper describes a direction-finding apparatus for waves of from 20 to 50 Mc/s. and gives measurements made by means of the apparatus. The adcock antenna system was used, and the receiving part that is attached to the antenna stood at a height of 3.5 m above the ground; so that it could be rotated around a wooden shaft.

Directional Observations of GNO 11,605 Kc. from Great Britain received during the day-time in Winter in Japan, by K. OHNO, M. NAKAGAMI and K. MIYA.

Summary : Since the beginning of commercial communications by short radio waves from Japan to countries in Europe, short waves transmitted from European Stations, those especially from Great Britain, did not come through satisfactorily during the day-time in winter in Japan until the winter toward the end of 1936, whence GLY 11,420 kc from the Dorchester Station and GNO 11,605 kc from the Ongar Station, both in Great Britain, started coming pretty regularly with fair signal strength. Although, since 1935, solar activity rapidly increased, with the result that the ionospheric ionization responsible for reflecting these short radio waves back to the earth, also increased all over the earth, ionization along the great circle path between Dorchester and our receiving stations, the Yokkaichi Receiving Station (since then closed on Nov. 21st. 1937), the Ono Receiving Station (opened Nov. 22 nd, and still working) , and the Hukuoka

Receiving Station (where the observations were carried out), seemed insufficient for reflecting GLY and GNO back to the earth. Our doubts as to whether they really did come along the great circle path, led us to conduct directional observations of the signals, with the result that it was found that the direction of arrival usually deviated from 10 to 15 degrees, clockwise, from the great circle path.

Abstracts and References

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COMMISSION II

Sous-Commission IIa

Mesures Ionosphériques

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N° 535 : The Corpuscular Eclipse of 1940 October, 1.

H.M. Nautical Almanac Office

Summary : A brief description is given of the adaptation of the occultation machine in the Nautical Almanac Office to the prediction of the corpuscular eclipse; times of beginning and end at a network of points covering South Africa are tabulated for the two heights of 100 km. and 300 km. and for two assumptions as to the effective radiating diameter of the Sun. A speed of propagation of 1000 miles a second is assumed for the particles, but an indication is given of the variation of the times for a change in the assumed speed.

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U R S I G R A M M E S

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COMITE NATIONAL AMERICAIN

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CODE - PROGRAMME

Bulletin Mensuel n°10, Octobre 1938, p.6

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M.A.G.

U.S. Coast and Geodetic Survey, Cheltenham, Md.

Date	Ursigrams	Amplification
1938		
Dec.		
11	13XXX	Quiet
12	23XXX	Quiet
13	33XXX	Quiet
14	43XXX	Quiet
15	53XXX	Quiet
16	65XXX	Quiet until 3 a.m. Dec.16, then slightly disturbed.
17	75XXX	Slightly disturbed
18	15XXX	Slightly disturbed
19	23XXX	Slightly disturbed
20	33XXX	Quiet
21	43XXX	Quiet
22	5597X 0000X 1300X	Slightly disturbed until midnight, Dec.21, then moderately disturbed until 8 a.m. Dec. 22, then quiet.
23	63XXX	Quiet

1938

Dec.

24	73XXX	Quiet
25	13XXX	Quiet
26	23XXX	Quiet
27	33XXX	Quiet
28	43XXX	Quiet
29	53XXX	Quiet
30	63XXX	Quiet
31	73XXX	Quiet

1939

Janv.

1	13XXX	Quiet
2	23XXX	Quiet
3	33XXX	Quiet
4	43XXX	Quiet
5	53XXX	Slightly disturbed
6	63XXX	Quiet
7	73XXX	Quiet

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MAGNETIC CHARACTER FIGURE (x)

Date	0h - 12h	12h - 24h	Date	0h - 12h	12h - 24h
1938 Dec.			1938 Dec.		
10	0.5	1.1	25	0.0	0.0
11	0.4	0.3	26	0.0	0.1
12	0.2	0.1	27	0.0	0.1
13	0.1	0.1	28	0.0	0.4
14	0.1	0.1	29	0.1	0.0
15	0.0	0.0	30	0.0	0.2
16	0.2	0.9	31	0.1	0.1
17	0.9	0.9	1939 Jan.		
18	0.5	1.1	1	0.1	0.0
19	0.8	0.6	2	0.1	0.1
20	0.4	0.6	3	0.2	0.0
21	0.2	0.2	4	0.0	0.4
22	0.8	0.4	5	0.6	0.7
23	0.1	0.0	6	0.1	0.3
24	0.0	0.1			

(x) Average of data from the seven observatories :  
 Cheltenham, Maryland; Tucson, Arizona; Sitka, Arizona;  
 Honolulu, Hawaii; San Juan, Puerto Rico;  
 Huancaayo, Peru; Watheroo, Australia.



K.H.L.

SOURCE : NATIONAL BUREAU OF STANDARDS

For Dec. 14	For Dec. 21	for Dec. 28	For Jan. 4
3417X 40024	3417X 33737	3417X 37023	3417X 37023
25011 46023	25012 36024	25012 46023	25012 46024
33812 78025	32017 44023	32015 70026	33519 70027
33827 94028	32728 62025	33030 94028	34033 94030
34171 20057	33720 94027	34171 18043	34171 16038
10032 24046	34171 32035	12032 24038	06032 20049
10037 26053	10030 32050	12037 28045	10037 220XX
20037 280XX	22030 36039	18034 300XX	12032
	22034 40050		
	28033 420XX		
	28041		

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 MANILA URSIGRAMS
 

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Received at Navy Department

M.A.G. for Dec. 1 to Dec.15 1938.

Dec. 1	53XXX	653XX	759XX	159XX	257XX	359XX	43XXX
	53XXX	657XX	777XX	159XX	207XX	359XX	459XX
	559XX						

: . . for Dec.16 to Dec.31 1938

Dec.16	277XX	379XX	477XX	579XX	659XX	759XX	177XX
	259XX	33XXX	43XXX	53XXX	63XXX	759XX	13XXX
	259XX	33XXX					

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JAPANESE URSIGRAMS

From Tokyo Radio Station J A U-2, 7327.5 Kc., received by  
the R.C.A. San Francisco Station.

S.O.L.

Dec.17 51440 60790 70779 1XXXX 21060 31115 41198  
Thursday, Monday and Tuesday add 100 to number of spots.

Dec.24 51117 61077 70857 10992 2XXXX 3XXXX 4XXXX  
Thursday add 100 to number of spots

Dec.31 50572 6XXXX 70991 10873 20808 30779 4XXXX  
Monday add 100 to number of spots.

Jan. 7 50559 60534 70430 1XXXX 20528 30855 40850

P.R.O.

Dec.17 54321 64321 73312 1XXXX 23332 35434 45221

Dec.24 53221 64242 73133 12132 2XXXX 3XXXX 4XXXX

Dec.31 53142 6XXXX 72234 13238 23221 33141 4XXXX  
Saturday and Sunday add 10 to Area West

Jan. 7 52122 62732 72330 1XXXX 22231 32131 44122  
Friday E Limb High Prominence height 180 000 km.

M.A.G.

Dec.17 80801 21111

Dec.24 81502 22211

Dec.31 82221 00001

Jan. 7 82900 00100

K.H.L.

Dec.17 71303 30231 35430 42600

Dec.24 72003 31333 35538 46700

Dec.31 72703 XX100 33337 42500

Jan. 7 70403 XX1XX XX331 58500

F.A.D.

Dec.17 Nil

Dec.24 Nil

Dec.31 Nil

## COMITE NATIONAL FRANCAIS

## I. PROGRAMME ET CODE

Le programme et le code des Ursigrammes émis sous les auspices du Comité Français de Radiotélégraphie Scientifique, ont été publiés dans " L'Onde Electrique " Vol.10, n°120, Décembre 1931, p.I à X.

Program and code of Ursigrams emitted under the auspices of the French Radioscientific Committee, are contained in " L'Onde de Electricque " Vol.10, n°120, December 1931, p.I to X.

## II. RENSEIGNEMENTS

Date	Bulletin Météorologique Quotidien B.A.R.								Acti- vité so- laire S.O.L.
	Lignes Isobares				Zones des				
	Val. de la ligne (mb.)	Coordonnées			basses		hautes	pressions	
1939 Janv. 2	1015	14728	15024	15523	76003	998	97130	1046	2X222
		16122	15836	16245	75300	990	94018	1031	
		27000	26515	25516	75528	1002	93728	1032	
		24407	23705	23700					
3	1015	15234	14625	14710	75421	995	93920	1032	3XXXX
		14906	14700		74311	1023	97030	1045	
		26700	26213	25835					
4	1015	14337	14333	14920	75200	994	93818	1031	4XXXX
		14513	14204	14200	75331	995	97230	1045	
		26800	25920	26345					
5	1015	14030	14325	14820	75413	1008	93618	1033	5XXXX
		14610	14904	14700	74933	995			
	1015	26130	25720	26011					
		26500							

1939 Janv.									
6	1010	13930 14915 15710	14024 15110 16220	14521 15710 16135	75425	980	93712	1031	63481
7	1015	13635 15200	14122	15107	75623	980	94210	1032	7XXXX
8	1010	14834 13727 15011	14424 14022 15300	14028 14517	76201 75818	983 978	94002	1028	1XXXX
9	1015	17400  25330 24516  33017	17125  24926 24415  33515	24814 24900  33322	76200	980	94500 93900 94334	1022 1023 1025	2XXXX
10	1015	17200 14020 14307	15326 13118 14200	14416 13508	76200 75313 74013	992 1007 1007	97035 94326 93303	1026 1023 1022	3XXXX
11	1015	17003 13500  24045 24527	15225  23035 26547	13210  23529	75400 74305 74637 73934	988 995 1000 1002	96730 93521	1027 1023	4XXXX
12	1005	17005 14507  25535 23827	16008 14500  24825 24032	15117  24420	74428 73700	995 988	96226	1016	53443
13	995	14517 15413  27015	14714 16416  26510	15320 16330  25500	76052 75333	985 970			6XXXX
14	1000	13725 15002  27023 26732	14020 15504  26615	14509 16000  26520			96561 95024	989 960	7XXXX
15	980	14627 15502  26200	14617 16300  26207	14910  26125	77125	1003	95324	944	---
16	985	17115 16320  24730 24810	16717 16028  24625 25200	16615 15630  24818	77002 76100 75613 74032	963 963 947 988	93300	1028	2XXXX

1939  
Janv.

17	995	16425 15135 14900	16017 14020	15532 14505	74914 77100	968 968	93100	1030	3XXXX
18	1000	15900 16514  24533 25522 24700	15807 17120	16019	75103 75137	981 980	93013	1031	4XXXX
19	1005	14230 15505	14617 16109	15009 16900	75324 76426	960 983	93412 93305	1032 1032	5XXXX
20	1005	14332 14609	14826 14700	14715	75308 76224 74837	987 952 992	93410 93322	1031 1033	6XXXX
21	1015	14131 14410	14623 14305	15122 14200	74831 76513 75303	983 986 986	93517 93604	1032 1031	7XXXX
22	1015	14736 14505	14932 14700	14620	76623 75615	978 972	93322	1036	1XXXX
23	1020	14030 15235	14526	15027					
	1020	25832 29502 23700	25515 24300	25009 23902	76918 74633	988 1005	94719	1030	2XXXX
24	1020	14232 14120 15008	14430 14115 15406	14225 14810 15100	75022	992	96230 93713 93423	1026 1031 1032	3XXXX
25	1015	16600 14116 14132 15225	16010 11509 14030 16035	15016 13400 14526	75002 75237	985 994	96517 93521	1031 1027	4XXXX
26	1010	16000 14922 14009	15011 14725 13500	14717 14318 13005	74901 74121	982 1005	96221 93315	1031 1021	5XXXX
27	1015	16000 15028	15011 16036	14722					
	1015	24433 23229	24026 22925	23725	74933 74112 73612	1005 1000 998	96119 93733	1028 1021	63322

1939									
Janv.									
28	1015	15200 13220	14916	14225	74109	982	96117 93931	1027 1023	7XXXX
		24735	25326	26135					
29	1010	13530 13008	14123	13517					
	1010	25000 15025	25108 16030	24723 17038	74307 74332	988 990	96005	1030	13331
30	1015	15000 16235	15314	15622	74506 74525	1000 990	93112 96207	1018 1031	23422
		23105 23712	23405 23317	23308					
31	1010	13325 14300 15513	13518 14500 16022	13910 14804 16229	74127 74622	990 982	96100	1028	33433
Févr.									
1er	1015	13526 13200	12921	13110	75124	990	96151	1023	43342
		24800 26725	23408	26014					
2	1015	13726 13105	14020	13315	75434	980	95262 92925	1023 1023	52332
		24600 26606	25111	25907					
3	1015	13530 14514 15900	14220 15013	14015 15508	75429	980	93020 94672	1026 1023	---
4	1015	13729 14615	13620 15510	14016 15700	76903 75231	975 985	92825 94862	1025 1035	73443
5	1015	13525 14715	13620 15110	14216 15700	76805 75827	978 980	94859 92723	1032 1025	12334



1939  
Janv.

- |    |   |
|----|---|
| 5  | Perturbation de faible étendue  |
| 6  | Perturbation de faible étendue  |
| 7  | Perturbation de faible étendue  |
| 8  | Perturbation de faible étendue  |
| 9  | Perturbation de faible étendue  |
| 10 | Perturbation de faible étendue  |
| 11 | Perturbation de faible étendue  |
| 12 | Presque calme   |
| 13 | Perturbation de faible étendue  |
| 14 | Perturbation de faible étendue  |
| 15 | Calme   |
| 16 | Presque calme   |
| 17 | Agité, oscillations de longue période de la déclinaison,<br>début 0050, fin 0400.           |
| 18 | Presque calme   |
| 19 | Un peu agité  |
| 20 | Un peu agité  |
| 21 | Agité, perturbation générale des trois éléments.<br>Début à 1225 et fin à 2000.             |
| 22 | Agité, perturbation générale des trois éléments.<br>Début à 1815 et fin le lendemain à 0600 |
| 23 | Un peu agité  |
| 24 | Un peu agité  |
-



S.O.I.URSIGRAMMES

du 29.12.38 au 4.1.39 : 52223 X84X6 14187 62223 X71X7  
 15214 72233 X66X6 14189 12XX3  
 X46X5 X5125 22XX3 X42X4 X2X38  
 3XXXX 42XX3 X73X7 X5X85 G.M.14 Sud  
 passa meridiano Centrale.

du 5 au 11.1. 1939 : 52XX3 X69X5 X8X47 63XX1 140X5  
 X9126 73XX3 105X5 X6X80 13443  
 X94X5 X9141 22XX3 122X5 10120  
 32XX1 164X5 X9112 43XX1 178X7  
 XXXXX Macchia passata meridiano 4  
 Dicembre tramonta 10 Dicembre.

du 12 au 18. 1. 1939 : 5XXXX 63XX3 10710 X7X91 73XX3  
 140X6 X5X90 13XX3 120X5 X5115  
 22XX2 100X5 X4X53 32XX3 X97X6  
 X4X45 42XX3 X85X6 X5X75

du 19 au 25. 1. 1939 : 5XXXX 63333 X73X7 10117 73222  
 118X7 X6208 12XX1 111X4 XXXXX  
 22XX3 100X3 XXXXX 32XX3 X86X4  
 XXXXX 43331 153X6 XXXXX Sabato  
 P.E. 34 gradi Sud altezza 100 secondi  
 base 14 gradi. Mercoledì eruzioni cro-  
 mosferiche 8 gradi Nord 53 gradi Ovest.

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TRADUCTION

Date	Activité			
	générale	d'après les plages facu- laires bril- lantes	d'après les filaments	Variation de l'activité générale
1938				
Déc.				
29	moyenne	peu intense	peu intense	stationnaire
30	moyenne	peu intense	peu intense	stationnaire
31	moyenne	peu intense	assez intense	stationnaire
1939				
Janv.				
1	moyenne	---	---	stationnaire
2	moyenne	---	---	stationnaire
3	---	---	---	---
4	moyenne	---	---	stationnaire
5	moyenne	---	---	stationnaire
6	forte	---	---	croissante
7	forte	---	---	stationnaire
8	forte	intense	intense	stationnaire
9	moyenne	---	---	stationnaire
10	moyenne	---	---	croissante
11	moyenne	---	---	croissante
12	---	---	---	---
13	forte	---	---	stationnaire
14	forte	---	---	stationnaire
15	forte	---	---	stationnaire
16	moyenne	---	---	décroissante

1939				
Janv.				
17	moyenne	---	---	stationnaire
18	moyenne	---	---	stationnaire
19	---	---	---	---
20	forte	assez intense	assez intense	stationnaire
21	forte	peu intense	peu intense	décroissante
22	moyenne	---	---	croissante
23	moyenne	---	---	stationnaire
24	moyenne	---	---	stationnaire
25	forte	assez intense	assez intense	forte

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Date	Nombre relatif de taches	Plages facu- laires sur le disque	Protubérances visibles sur le bord	Superficie totale des protubérances
1938 Déc. 29	84	6	14	1870
30	71	7	15	2140
31	66	6	14	1890
1939 Janv.				
1	46	5	5	1250
2	42	4	2	380
3	--	--	--	--
4	73	7	5	850
5	69	5	8	470
6	140	5	9	1260
7	105	5	6	800
8	94	5	9	1410
9	122	5	10	1200
10	164	5	9	1120
11	178	7	--	--
12	--	--	--	--
13	107	10	7	910
14	140	6	5	900
15	120	5	5	1150
16	100	5	4	530
17	97	6	4	450
18	85	6	5	750

1939				
Janv.				
19	--	--	--	--
20	73	7	10	1170
21	118	7	6	2080
22	111	4	--	--
23	100	3	--	--
24	86	4	--	--
25	153	6	--	--

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NOTES :

1. Semaine du 29.12.38 au 4.1.39 : Groupe de taches sur le Méridien Central à 14° de latitude Sud.
  2. Tache sur le méridien du 4 au 10 Décembre (?)
  3. Samedi 21.1.39 : Protubérance au bord Ouest : 34° Sud; hauteur : 100 secondes; base 14°.
  4. Mercredi 25.1.39 : Eruption chromosphérique, 8° Nord, 53° Ouest.
-

K.H.L.

Observations du Centre G. MARCONI

URSIGRAMMES

du 4.1.1939 : 10411 25127 27227 27327 27427 27527 27629  
29730

du 11.1.1939 : 11111 00115 24224 25325 27427 27529 30630  
33737

du 18.1.1939 : 11811 00100 00227 27327 27427 27529 29630  
32737

du 25.1.1939 : 12511 00113 15216 27227 29329 30430 30530  
31631 31731

TRADUCTION

Fréquences Mc/s.	Hauteurs (Km.)			
	4.1.1939	11.1.1939	18.1.1939	25.1.1939
2,5	255	---	---	---
3	270	150	---	135
3,5	270	240	---	150-270
4	270	240	270	165-270
4,5	270	255	270	285
5	270	255	270	285
5,5	270	270	270	300
6	270	270	270	300
6,5	270	270	270	300
7	270	285	290	300
7,5	270	300	290	310
8	290	300	300	310
8,5	290	330	320	310
9	300	370	390	330