



# MERCURY

**THE JOURNAL  
OF THE  
ROYAL SIGNALS  
AMATEUR RADIO SOCIETY**

NUMBER 31

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## ROYAL SIGNALS AMATEUR RADIO SOCIETY

(Affiliated to the Radio Society of Great Britain)

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### HQ LOCATION

1" Ordnance Survey - Sheet 179  
GR 921 091

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Last Sunday in each month

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## EDITORIAL

G3DPS

The Walrus is reputed to have said something about the time coming. Whilst not being in the habit of agreeing with every pearl of literary wisdom uttered by walruses, I feel that there is an element of necessary truth in the utterings of this amphibious Arctic long tusked mammal. The time, in this case, is that to consider expenditure by the Society, particularly in regard to "Mercury".

NO, I AM NOT ADVOCATING AN INCREASE IN MEMBERSHIP FEES !!! (So please read on!)

As mentioned elsewhere, the existing rule provides for payment to authors of articles published in "Mercury" at the rate of £1-0-0 per printed page. It is also pointed out elsewhere, that this will have cost the Society well over £50-0-0 up to and including this issue. This is a lot of money in addition to the £90 or so a year expended on "Mercury" postage each year. All members are asked to fill in and in and return the form enclosed with this "Mercury".

On a happier note, the Society hopes to run GB3RCS at Blandford on the 21st June and at Catterick on the 28th June. Perhaps more unusually we hope to have another Special Event Station here at Blandford around June 5th on the occasion of the visit of Her Royal Highness Princess Anne. We are hoping to get GB3HRH. Operational dates possibly 4th, 5th and 6th June.

Many members who have visited HQ will remember the wooden HQ building. The more recent visitors will have seen the extensive rebuilding programme now in operation here at Blandford. This rebuilding means that the old wooden building has to go. The actual date has not yet been fixed but thanks to the interest shown, and help given by several people, particularly Brigadier J. R. Cubberley, Commandant, School of Signals, Lieut. Col. Higgins, Admin Commandant, School of Signals and Capt. Daw BEM, OC Medium Power Group the HQ Station will be moving into new accommodation at the Transmitter Site. Full details will be given in "Mercury" when the move becomes necessary. Generally speaking the new accommodation is in much more modern buildings but space is somewhat limited. Nevertheless, it is hoped to make a much more acceptable station to which all visitors will be as welcome as ever.

Talking of visitors to Blandford, please bear us in mind when planning your summer trips this year. Bring along the XYL and Junior Ops. We will be happy to see you.

Soldering irons have been kept hot at HQ station recently. The generous grants from both the Nuffield Trust and the Corps Committee have been turned into a new station from the Heathkit line, consisting of an SB-101, SB-640, SB-600, HP23 and SB-610 together with a J-Beam 10 Element 144 Beam to be driven by a SB-500 2 Metre Transverter running 50 watts SSB. Most of the work has been done by Harry, G3JIL and Colin, G3YBT and even G8BHL was "roped in" although he was only visiting the School for a short period. Work is still in hand and extensive testing will have to be carried out before the station is put on the air. From "launching day" onwards it is hoped to provide a VHF service to our many members who are interested in these frequencies and who, up until now, have been a little neglected. The ultimate object is, of course, to make the Royal Signals Amateur Radio Society Headquarter Station one of the leading amateur stations in Great Britain.

It is hoped that this "Mercury" will reach you with the minimum delay. Please bear with us on this subject, reasons are many, excuses unacceptable. Sufficient to say perhaps that there should be at least 30 hours in each day!!!

All for now, 73.



P.S. If you are taking the rig anywhere this summer, let HQ know in good time and we'll spread the word.

SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS  
U Subs were due on the 1st January 1970. "Pruning" starts on the 1st June U  
B SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS+SUBS B

WHERE ARE WE ALL

By G3DPS

The following list came about due to a "sort out" of records at HQ. It shows how widespread membership of the Society is. Based on the postal address "town" it is only intended to indicate the area in which the member lives. Have you a member living in your area you didn't know about?.

ABERDARE	559	BRENTWOOD	035
ABERDEEN	128	BRIDGE OF EARN	101
ALDRSHOT	506 529	BRIDGWATER	254
ALDRIDGE	584	BRIDLINGTON	052 613 614
ALDEBUUGH-ON-SEA	498	BRIGHTON	231 240 468 683
ALFERTON	008	BRISTOL	057 234 236 478 551
ALMWCH PORT	488		681
ANDOVER	607 637	BRIXHAM	568
ASHFORD	151 165	BROCKWORTH	368
ASHTON-UNDER-LYNE	265 266 513	BROMLEY	047 579
AYLESBURY	610	BROMSGROVE	095
		BRUTON	071
BALLYMENA	058		
BAMPTON	498	CAMBERLEY	077 170
BANSTEAD	238	CAMBRIDGE	611
BARNET	358	CANNOCK	249
BARNSTAPLE	270	CANTERBURY	326
BASILDON	327 580	CARDIFF	098 451
BASINGSTOKE	024 084	CARDINGTON	502
BATTLE	341	CARLISLE	126
BEACONSFIELD	541 625	CARMARTHAN	187
BECKENHAM	457 684	CARNFORTH	693
BEDALE	004 120	CARPENDERS PARK	387
BEDFORD	065 152	CASTLEFORD	586
BEER	563	CATERHAM	414
BELFAST	005 199 351 544	CATTERICK CAMP	029 036 044 169 202
BENFLEET	318		226 229 245 284 403
BERWICK-ON-TWEED	531		442 590 680
BEXHILL-ON-SEA	300	CHANDLERS FORD	064 633
BEXLEYHEATH	043 276	CHATHAM	221
BIDEFORD	317	CHEADLE HULME	648
BIRMINGHAM	069 137 149 213 230	CHEAM	446
	244 252 338 483 489	CHELTENHAM	209 439 510 577
	600 636 695	CHELMSFORD	129 135
BIRSTALL	382	CHESTER	194
BISHOP AUCKLAND	034	CHESTERFIELD	232 386
BISHOPS STORTFORD	183	CHICHESTER	083 215 485
BLABY	448	CHIPPENHAM	398
BLACKBURN	269 429 694	CHRISTCHURCH (Hants)	200
BLANDFORD	090 108 116 123 181	CLEVEDON	243
	212 219 268 302 329	COBHAM	184
	331 410 418 427 617	COLCHESTER	463 527 602
	651 659	COLNE	596
BLETCHLEY	484 672	COPTHORNE	094
BODMIN	074	CORFE MULLEN	545
BOLTON	374	COTTENHAM	207
BOURNEMOUTH	283 310	COVENTRY	016 156 635
BRADFORD	504	CRAIL	006
BRAILSFORD	375	CRAWLEY	117
BRAINTREE	299	CREDITON	519



CROOKHAM	177	HAZELGROVE	251
CROYDON	263 391	HELENS BAY	082
CHUCKFIELD	160	HENLEY-ON-THAMES	023 573
		HEXHAM	482
DAGENHAM	144	HIGH WYCOMBE	322
DARLINGTON	163 192	HOLTON-LE-CLAY	533
DARTFORD	340	HOLYWOOD	288
DAVENTRY	241	HOLYHEAD	690
DERBY	153 646	HORLEY	639
DEVIZES	432	HOUNSLOW	025 384
DOLLAR	466	HOVE	456
DORCHESTER	371	HUCKNALL	038
DORKING	018 552	HULL	320
DOVER	644	HUNTINGDON	697
DRIFFIELD	623	HUNTON-SHENFIELD	571
DUNDONALD	346	HYTHE (Kent)	377
DUNSTABLE	297		
		ILFORD	652
EAST BARNET	631	INVERNESS	107 500 624
EASTBOURNE	179 206	ISLE OF SHEPPEY	295
EASTLEIGH	556	ISLEWORTH	287
EDINBURGH	517	IVER	115
EPPING	121 350 412		
EPSOM	436	KENDAL	364
EWELL	007	KENILWORTH	349 430
EXETER	306 365 637	KEW	017
EXMOUTH	400 411	KIRKNEWTON	450
		KNEBWORTH	045
FAREHAM	566		
FARINGDON (Berks)	321	LANCASTER	208
FARNBOROUGH (Hants)	070	LARBERT	583
FARNHAM	143 224	LEADENHAM	668
FELTHAM	405	LEAMINGTON SPA	324 400
FERNHURST	314	LEEDS	019 133 185 464
FINAGHY	014		512 642
FOLKESTONE	486	LEICESTER	174 298
FORFAR	303	LEIGH	608
FRESHWATER EAST	015	LENZIE	453
		LERWICK	087
GERRARDS CROSS	198	LETCHWORTH	290
GILLINGHAM	009 088	LICHFIELD	271 277 086
GLASGOW	150 167 337 687	LIMAVADY	671
GLENFIELD	454	LINCOLN	062 473 656
GLENROTHES	089	LINLITHGOW	369
GLOUCESTER	462	LISBURN	390
GOSPORT	622	LITTLEOVER	666
GRAVESEND	255	LITTLE SUTTON	028
GRAYS	612	LIVERPOOL	010 218 279 343
GUILDFORD	124 148 222		355 540
		LLANDUDNO	542
HARLOW	588	LONDON	001 050 097 235 264
HARPENDEN	535		305 335 352 361 381
HARROGATE	061 076 130 131 664		424 497 509 561 574
HARROWWEALD	182		587 599 616 645 653
HASTINGS	096		654 663 676
HATFIELD	220 505	LOUGHBOROUGH	068 353

LOUGHTON	428	RADCLIFFE (Lancs)	328
LOUTH	421	RADCLIFFE-ON-TRENT	145
LOWESTOFT	458	RAMSGATE	042 647 682
LYMINGTON	627	READING	027 072 105 630 667
LYTHAM ST ANNES	161	REDCAR-BY-SEA	190
		RHONDA	056
MACCLESFIELD	011	RHYL	214
MAIDENHEAD	256	RICHMOND (Yorks.)	259 273
MAIDSTONE	347 404	RICKMANSWORTH	472
MANCHESTER	140 292 301 316	RIPON	367
MANSFIELD	334 539	ROCHESTER	020 172 175
MARKET DRAYTON	518	ROMFORD	030
MARLBOROUGH	304	ROSCREA	031
MARLOW	060	ROWINGTON	686
MELTON MOWBRAY	138	RUGELEY	640
MIDDLEWICH	604	RUISLIP	525
MIDDLE WALLOP	055	RUNCORN	615
MILNTHORPE	689		
MINTLAW	051	SALE	511
MONTROSE	333	SALISBURY	040
MORDEN	012 325	SALTASH	080
MORPETH	394	SANDY	388
		SCARBOROUGH	313 336 530 543 562
NEW ASHFORD	134	SCORTON	122
NEWCASTLE (Staffs)	093 250	SEDBURGH	417
NEWCASTLE-UPON-TYNE	550 570	SEVENOAKS	534
NEWENT	665	SHAWBURY	408
NEWPORT (IoW)	479	SHEFFORD	549
NEWTON ABBEY	501	SHIPLEY	136
NEWTON ABBOT	359	SHREWSBURY	520 521
NEWTON Aycliffe	157	SIDCUP	643
NEWTYLE	125	SKEGNESS	578
NORTHAMPTON	399	SLOUGH	356 628
NORTH BERWICK	102	SOLIHULL	360 474 669 670
NORTHWICH	204	SOUTH ASCOT	281
NORWICH	441 480	SOUTH CROYDON	655
NOTTINGHAM	132 228 289 339 658	SOUTHAMPTON	159 626 700
NUNEATON	158	SOUTHPORT	380
		ST AGNES	178 180
OLDHAM	312	ST ALBANS	162 344
OLNEY	332	ST ANNES	063 526 598
		STOCKPORT	416
PAISLEY	467	STRATFORD-ON-AVON	242 685
PENCOED	699	STURMINSTER-NEWTON	164
PENICUIK	193	SUDEBURY	493
PENYBONT	285	SUNDERLAND	111 272
PENRITH	357	SUNNINGDALE	048
PENZANCE	476	SUTTON COLDFIELD	081 239 354 402
PETERBOROUGH	492		409 629 691
PETERSFIELD	039	SUTTON-IN-ASHFIELD	392
PIMPERNE	003	SWANSEA	496
PLYMOUTH	422		
POLRUAN-BY-FOWEY	274	TARBERT	002
PONTYCLUN	262	TAUNTON	426
POYNTON	560	TENBY	066
PRESTON	059 294 461	THETFORD	499 569 688

THORNABY	490		
THORNTON CLEVEYS	395	YARM-ON-TEES	186
THORNTON HEATH	609	YEOVIL	112 113 296
TONBRIDGE	104 491	YORK	091
TROON	342		
		<b>OVERSEAS</b>	
UCKFIELD	564	ANGUILLA	425
UXBRIDGE	073	AUSTRALIA	097 168
		BERMUDA	054
VENTNOR	348	BRAZIL	595
		CANADA	067 141 196 319
WAKEFIELD	119		415 558 674
WALSALL	565	FRANCE	114
WARE	555	GIBRALTAR	315 495
WAREHAM	233 438	HONG KONG	385 606
WATCHET	205	KENYA	118 293
WATFORD	397 701	MALAYA	103 210 677 678
WEMBLEY	330 443	MALTA	171 469
WEST EWELL	481	MAURITIUS	465 660
WEST KILBRIDE	471	NEW ZEALAND	407 523 673 696
WEST KINGSDOWN	641	NIGERIA	139
WEST WICKHAM	620	SINGAPORE	049 053 455 460
WESTBURY-ON-TRYM	662		575 591 619
WESTON-SUPER-MARE	370 433	SWITZERLAND	698
WEST ZOYLAND	675	UNITED STATES OF	109 127 203 557
WEYMOUTH	582	AMERICA	576 618 649 650
WHITBY	308 434	WESTERN GERMANY	379
WICKFORD (Essex)	477		
WILLINGHAM	257	<b>B.F.P.O.</b>	
WILLOUGHBY WATERLESS	106		
WILMSLOW	553	1	075 282
WIMBORNE	632	15	227 311 431 547
WINCANTON	037	16	253 508
WINCHESTER	013 449 692	30	366 536
WINSFORD	383 605	32	092 166 406
WIRRAL	026 396	33	470 581
WITNEY	661	35	378
WOKINGHAM	146	36	459 516 548
WOLVERHAMPTON	260 307	40	078 085 515
WOLVERTON	176 507 538	41	423
WOODFORD GREEN	291	53	142 435 585 592
WORCESTER	201 522	64	046 345 420 447 532 621
WYTON	188		

Most of our members seem to be "one man detachments". How about trying to double the membership in YOUR area as part of the membership drive this Jubilee year? Remember, the aim is 1,000 members by the end of 1970!!!

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#### CONGRATULATIONS.

The President, Council and all HQ Staff would like to extend congratulations to both Derek (now Ex-) MP4TAF and Maurice VS6AA on the award of the RSARS Overseas Special Award. These are the first two Overseas Special Awards and reflects a lot of hard work (and, we hope, many happy hours spent) on the rig. On the Home front, Bert, G3XSN, continues to hold RSARS Home Special Award, no doubt heavily insured as it is the only one in existence. Who is going to hold No.2?



## FROM THE PAST.

By G2KK.

(The following Letters to the Editor and the extracts from Club Notes which appeared in Wireless World in 1922 may be of interest to members. Older members in particular will remember the Signals Experimental Establishment on Woolwich Common. Do these early broadcasts foretell the birth of G4RS?.

From the issue of 13th May 1922.....

To the Editor of Wireless World and Radio Review.

Sir,

Whilst listening-in tonight at about 8:20 p.m. on a three-valve set we picked up strong telephony on 800 Metres. He was calling "ABC de XYZ", and gave us (a) a recitation of humorous poetry; (b) a song; (c) a gramophone record; (d) another record "Swanee"; (e) another song. He then called "CQ" and promised further concerts on Tuesday evening, April 25th at 8:30 p.m., and Friday evening, April 28th at 8:00 p.m. on 800 Ms.

If you can find space for this, readers who have not yet heard this may be glad to listen-in and perhaps someone can tell us who XYZ is. Perhaps XYZ himself will oblige. The signal strength here at Wolverhampton was considerably louder than 2MT, but jamming from a harmonic of a French automatic CW station was appalling.

Signed, T.W. Higgs,  
A.C.H. Bassano.

Dunstall House,  
Wolverhampton,  
April 20th 1922.

From the issue of 20th May 1922.....

To the Editor of Wireless World and Radio Review.

Sir,

With regard to the letter of Messrs. T.W. Higgs and A.C.H. Bassano in the issue of May 13th. I am glad to be able to furnish a reply to their query. The station whose telephony they heard was the Signals Experimental Establishment, Woolwich Common, Woolwich, London. I heard the telephony myself, but this is scarcely surprising as I am but a couple of hundred yards away. The Establishment is under Government control and does not make a regular habit of these impromptu concerts, and, moreover, XYZ is not the proper call for this station.

Signed, E.H. RAWED

Royal Arsenal, Woolwich. May 12th 1922.

From the issue of 20th May 1922.....

Woolwich Radio Society.

The April monthly meeting of the above Society, held at the Woolwich Polytechnic on Friday, April 28th, at 8 p.m., took the novel form of a concert entirely by wireless. From 8 o' clock to 9:45 p.m. the ether was filled with music and speech, and by means of a 7-valve receiving set and loudspeaker, kindly loaned by the S.E.E., this was rendered loudly and clearly to the audience. Promptly at 8 o'clock, directly after our Chairman (Mr. McPherson, B. Sc.) had opened the meeting, the voice of Capt. Hughes, of the S.E.E., came ringing through the loudspeaker, announcing the first item. From that time till 9:10 p.m. we were regaled by fine music, including solos by Miss W. Beeson and Capt. Hughes, violin solos by Mr. D. Young, interspersed with gramophone pieces. All were loudly and distinctly rendered. Directly the S.E.E. had finished we heard the well-known voice of 2FQ calling us from Blackheath. For 20 minutes we had more delightful music: we envied 2FQ its selection of delightful records. The moment he had finished we heard 2ON from Walthamstow call us up, and for another quarter of an hour we listened to more delightful music.

#### OTHER AWARD SECTION.

ELETRONICA POPULAR ATLANTIC AWARD (EP-AA). You remember that in the last issue of "Mercury" we asked what a certain list of call-signs had in common. (You do? - Good!). Well, the thing in common is that they are all calls with which contacts are required to qualify for the EP-AA. Details are as follows :-

Sponsored by the Amateur Radio department "CQ Radioamadores" of the Brazilian magazine "Eletronica Popular", the EP-AA is granted to amateurs of any country who send proof of contact with 60 countries of the Atlantic Ocean border; one of them must be with a Brazilian oceanic island (PY0).

1. Contacts must have been made after March 31 1967.

2. All authorised amateur bands and types of transmissions are valid with a minimum report of 3-3 for 'phone and 3-3-8 for CW.

3. Applications enclosing a log authenticated by a recognised Amateur Radio association must be addressed to :

"EP-AA Manager, Eletronica Popular, Caixa Postal 1131 ZC-OO Rio de Janeiro, GB, Brazil".

4. In order to cover postage, 8 IRCs should be sent by applicants (please don't send currency, but only IRCs).

5. The official list of the DXCC will be adopted; only the countries of the Atlantic border proper (and not of interior seas, such as Baltic or Mediterranean) are valid for the EP-AA.

List of countries for the EP-AA (Subject to changes, according to the DXCC current list).

CE - CO - CN8 - CR3 - CR4 - CR5 - CR6 - CT1 - CT2 - CT3 - CX - DL, DM, DK - EA - EA8 - EA9 (Ifni) - EA9 (Rio de Oro) - EA (Marrocos) - EA0 - EI - EL - F - FG7 - FM7 - FP8 - FS7 - FY7 - G - GC (Guernsey) - GC (Jersey) - GC (Sark) - GD - GI - GM - GW - HH - HI - HK - HP - HR - JW - JX - KC4 (Antartica) - KG4 - KP4 - KS4 - KV4 - KZ5 - LA - LU - OH - ON - OX - OY - OZ - PA0 - PJ - PJ-M - PJ-S - W (Brazil) - PY0 (Trindade) - PY0 - (F.Noronha) - PY0 (Abrolhos) - PY0 (S. Pedro, S. Paulo) - PZ, - SM - TF - TG - TI - TJ - TN - TR - TU - TY - UN - UA1 (Franz Josef Land) - VE, VO - VP1 - VP2A - VP2D - VP2G - VP2M - VP2K - VP2L - VP2S - VP2V - VP5 - VP7 - VP8, LU (Falklands) - VP8, LU (Antartica) - VP8, LU (S. Georgia) - VP8, LU (S. Orkneys) - VP8, LU (S. Sandwich) - VP8, LU (S. Shetlands) - VP9 - W/K - XE - YN - YV - YV0 - ZB2 - ZD3 - ZD7 - ZD8 - ZD9 - ZF1 - ZS1, 2, 4, 5, 6 - ZS3 - 3Y - 5N2 - 5T5 - 5V - 6W8 - 6Y5 - 7G1 - 8P6 - 8R1 - 9G1 - 9L1 - 9Q5 - 9Y4.

\*\*\*\*\*

WORKED NORWEGIAN CITIES (WNC). This Award is issued in 3 classes as follows :

Class	DX stations	European stations
III	5 Cities	10 Cities
II	10 Cities	20 Cities
I	15 Cities	30 Cities

Valid Norwegian Cities : Ålesund, Arendal, Bergen, Bodø, Drammen, Egersund, Fredrikstad, Gjøvik, Hammerfest, Halden, Hamar, Harstad, Haugesund, Horten, Kongsburg, Kristiansund S., Kristiansund N., Kragerø, Larvik, Lillehammer, Mandal, Molde, Mosjøen, Moss, Mo i Rana, Namos, Narvik, Notodden, Oslo, Porsgrunn, Sarpsborg, Sandnes, Sandefjord, Stavanger, Skien, Steinkjer, Trondheim, Tensburg, Tromsø, Vardø.

No limit on date, band or mode and the award is available to SWL's. QSO's with LJ, LF and LH stations are not valid for WNC. Send no QSL's only certified list by 2 licensed radio amateurs. The fee is 10 IRCs, or \$1 + 2 IRC (Norway, N. Kr. 7 --)

Applications should be made to : Larvik Society of NRRL, Award Manager, P.O. Box 59, N-3251, Larvik, Norway.

#### WORKED AFGHANISTAN RADIO AWARD.

MP4TDA kindly sent along the details of this Award issued by The Camel Drivers Radio Club. As Ray remarks "Fairly easy for me....." but this one may be a small challenge to Home members. Details reproduced as received.

#### WORKED AFGHANISTAN RADIO AWARD

##### W-YA-RA

1. The W-YA-RA can be worked from all stations in the world.
2. Stations in Afghanistan have to work 6, stations in Asia (except Afghanistan) have to work 4, stations in Africa and Europe have to work 3, stations in the rest of the world have to work 2 different YA-stations.
3. The contacts can be worked on all bands, but they must be worked on at least two different bands (e.g. 1 QSO on 21 Mc, the rest on 14 Mc).
4. The QSL-cards of the YA-stations have to be submitted under all circumstances WITH THE APPLICATION.
5. There are no differences for bands and no awards for different modes.
6. The cost for the award will be 10 IRC's or 1 US Dollar.
7. The award will be mailed immediately after checking the applications via AIR MAIL, submitted QSL, cards will be mailed with the award. For REGISTERD AIR MAIL two more IRC's are necessary.
8. The awards will carry numbers, the first applicant of each country (Continent) will get a special note on the award.
9. There are no stickers, but the award can be worked again and again with other stations. The award can be worked every year.
10. Contacts dated 1 January 1966 or later are valid.
11. Excess money from the awards will be forwarded to welfare-organisations.
12. Applications have to be mailed to :

Mr. Wolfgang Renner,  
P.O. Box 279,  
Kabul,  
Afghanistan.

.....  
APPLICANTS CALL \_\_\_\_\_ DATE \_\_\_\_\_

ADDRESS :

I herewith apply for the W-YA-RA for the following year/years \_\_\_\_\_

I submit the following QSLs :

No.	DATE	YEAR OF CONTACT	CALL-SIGN	REPORT	BAND	MODE	REMARKS
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

PLEASE WRITE IN BLOCK LETTERS

APPLICANT \_\_\_\_\_

### LINCOLN CENTURY AWARD.

This Award is issued by the Lincoln Short Wave Club and is available to any amateur or S.W.L. There are no date limits for contacts. Endorsements AOMB/M. Top Class and Multiple Endorsement Rules apply. Cost is 7/6, \$1, or 10 IRC. The Award is issued in 5 Classes.

Class A - 500 points, Class B - 400 points, Class C - 300 points, Class D - 200 points,  
Class - E 100 points

Scoring. For contacts with any station in the Postal district of Lincoln, England, or any other town called Lincoln - 20 points each station. Stations in the County of Lincolnshire, England, or any Lincoln county of the U.S.A. - 10 points each station. Contacts with the Lincoln Short Wave Club station G3IXH - 30 points.

Note V.H.F. contacts and contacts with CHC/FHC members count double points.

Send fee, with GCR list of QSLs (with exact locations of all Lincoln stations) to :  
Stewart Foster, 68 Goldsmith Walk, Lincoln, England.

### THE AMSTERDAM DX CERTIFICATE.

Another "Sheep-skin" which has just come to light is the ADXC issued by RADIO CLUB AMSTERDAM to all foreign amateurs who submit proof of two-way contact with 10 members of the Club and whose QSL cards have been received by the members concerned. Contacts may have been made over any period starting from 1st January 1957 both on fone or CW. Cost : 4 IRC. Applications may be sent to : G. Leenheer, PA0OI, Boerhaaveplein 141, Amsterdam, Netherlands. Members are : PA0ACG, AKA, AL, AMC, AML, ANH, AOB, ASD, BDR, BEA, BPN, CEA, CF, CHN, CKV, CWS, DOG, ELD, ELG, FCM, FHV, FL, GAR, GE, GHB, GPA, GVZ, GZ, HAL, HAN, HIL, HGD, HOR, HPO, IF, JAC, JEL, JEM, JPC, JRV, JSO, JVZ, JWA, KAP, KHR, KJN, KST, KTB, LGR, LRK, LVA, MEB, MER, MFC, MIR, MOR, MOT, MPH, NIC, NIR, NLC, NMN, NNO, OI, PAF, PAN, PEP, PER, PJE, PMC, POB, PRF, PRX, PRY, PRZ, PSO, PTR, PUR, QK, RCA, RL, RSA, TAP, TBK, TKS, UW, VDW, WAL, WFS, WJV, WIL, WKL, WOR, XRL, XYL, ZV, ZWO, and PI1ZKA.

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### QUICK QUIZ

1. Between Mexico in the north and Colombia in the south lies Central America. Can you name the seven countries which make up Central America.
2. Can you list the following locations in their correct geographical position WEST to EAST? - Dominican Republic, Dominica, Haiti, Puerto Rico & Cuba.
3. Does the Tropic of Cancer pass through : a) Texas, b) Mexico, c) Guatemala d) None of these?.
4. In what directions does the Panama Canal run (approximately)?
5. Ask any schoolboy the highest point in Asia and he will tell you "Mount Everest". But which is the lowest point in Asia, and how far above or below Sea Level is it?

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### ORIENTAL HAM MAGAZINE

Thanks to Bill, W3RX, HQ recently received a copy of OHM (Oriental Ham Magazine). This is a first-class publication containing some FB articles as well as colour photographs. Perhaps the biggest surprise was to flick open the pages and see the smiling face of an RSARS member - yes, Maurice, VS6AA who edits a column. OHM can be obtained world-wide for US\$2 or 30 IRCs a year Surface Mail or US\$10 per year Air Mail to Europe. Published by PACIFICA PUBLICATIONS LIMITED, and printed in Hong Kong, the magazines offices are at Hotung Building, 5th Floor, 10 Stanley Street, Hong Kong, or Post Office Box 16321. The Editor is Roy Chalu.

#### CQ FIRST DAY COVER COLLECTORS.

In conjunction with the Jubilee celebrations, Special Royal Signals One-Day Covers are being made available. Orders for these covers can now be placed. Please order on the following type form:-

To Royal Signals Philatelic Officer,  
11th Signal Regiment,  
Helles Barracks,  
Catterick Camp,  
Yorkshire.

Date .....

Please Send ..... copies of the Royal Signals 50th Anniversary One-Day Cover (5/- each) issued on 28th June 1970, to :

.....  
..... give name and full  
..... Postal Address

I enclose Cheque/postal Order for £ : : to cover the cost. (Note : Cheques/Postal Orders to be made payable to "P.R.I., 11th Signal Regiment").

Signed .....

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#### STAMPS + STAMPS + STAMPS.

Used British, Commonwealth and Foreign stamps are still required for passing along to the Radio Amateur Invalid and Bedfast Club. To date, over 13,000 stamps have been collected and a big "Thank You" is due to RSARS members. Stamps have recently been received from, and thanks due to, ZL2AZT, G3YSK, 407, 689 and many others,

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#### DID YOU KNOW.....?

VS6AL is now G3ZCG.

G3YSK, Member Number 692 is a leading light in the new Winchester Amateur Radio Club, and extends an invitation to RSARS members to visit the Club any Tuesday or Friday. The address? - Antrim House, St. Cross Road, Winchester.

G3AKF has now settled at his new QTH : 7 Valley Road, Henley-on-Thames, Oxon., RG9 1RL.

GW3RVG was never in Signals but fought as a Lightweight for 18 Brigade Signals in Malaya in 1953 in the Far East Team Championships. Next morning's "Malay Mail" reckoned it was the best fight of the night!

Ian Stuart, Member Number 689, recently passed his C.C.F. Signals Classification with the FB mark 261 out of 300 (Congratulations - Ed.) Ian is visiting Malta GC with his School C.C.F. in April and hopes to bump into Harry, 9H1BE. Ian would also like to hear from any other RSARS C.C.F. members who operate on the C.C.F. Nets. Drop him a line at : Ian Stuart RSARS 689, 12 Ryley Field Road, Milnthorpe, Westmorland.

That the International Conference in 1925 it was decided that Esperanto should be the auxiliary Amateur Language

G3KYF will be GD3KYF/M in early July this year. He has already QSOd MB4QBK on 28510 Khz at 1345Z and 21310 Khz at 1050Z and is looking for any active stations in Zone 19 for WAZ.



DX-PEDITION NOSTALGIA By Ex-AC4YN (G5YN - RSARS 040).

"A glimpse of Tibet" by Captain E. Y. Nepean Royal Signals  
reprinted from the Royal Signals Quarterly Journal October 1939

(In view of the "Rape of Tibet" by the Chinese Communists which took place not so very long ago it is felt that this old article would be of interest. It is regretted that it is not possible to reproduce the photographs which illustrate it.

An appendix has been added giving more details of the radio side of the mission. - G5YN)

Tibet in 1936 was in a very weak position. The Dalai Lama had died in 1933. The Tashi Lama was in China. He had fled there in 1923, as he feared the way in which the late Dalai Lama had collected all the power into his own hands. The Cabinet were quite unused to the responsibilities of government; the Regent and the Prime Minister were both young men lacking the necessary experience and qualifications to pull the country together at such a time.

It is essential for the security of the North-East Frontier of India that Tibet should be a free and independent country. China was taking this opportunity to increase her influence in Tibet. She had shown great kindness to the Tashi Lama since 1923, and had provided him with an escort of picked troops for his return. The Tibetans refused to allow this escort to enter the country and at the time the position was a deadlock. In 1934 the Chinese had installed a wireless transmitter at Lhasa for communication with Western China. This had also increased their influence over the Tibetans and was a thorn in the side of the Government.

The mission had both political and military aims. The political objects were three-fold: to renew political contacts initiated by previous missions and visits by political officers; to advise and encourage the Cabinet in the difficult task of running a Government which for many years had taken but little effective part in the affairs of the country; and to compose the differences between the Tashi Lama and the Government so that he would return to Lhasa without the Chinese escort.

On the military side, the Mission wished to make a first-hand survey of the military resources of the country; to advise them how best to make use of these resources; to make offers of assistance with their training and to arrange for the purchase of arms and ammunition from India.

The wireless was complementary to the main objects of the Mission. It was to be used to supplement the telegraph between Lhasa and India; to provide communication in the event of our proceeding beyond Lhasa; to receive news and entertainment from home and to be a counter to the Chinese wireless transmitter with the object of lowering the prestige of the Chinese in the eyes of the Tibetans. To supplement the short wave transmitter and receiver we took with us a number of broadcast receivers and a public address equipment.

A most important branch of the Mission was the medical work carried out among all classes of the people. Other work carried out was photography, cinematography, botany and as much observation of meteorology and natural history as time permitted.

The personnel of the Mission comprised our leader Mr. B. J. Gould OBE, ICS, Political Officer, Sikkim, and Mr. H. Richardson, ICS. British Trade Agent, Gyantse, the two political officers; Brigadier Neame, VC, DSO, of the General Staff Eastern Command in charge of the military side of the Mission; Captain Morgan IMS, our medical officer; Mr. F. Spencer Chapman private secretary to Mr. Gould, also in charge of photography, cinematography, natural history and meteorology. Captain Dagg, Royal Signals, and myself, who, besides our wireless duties assisted Chapman with photographic and cipher work. Owing to the need for wrestling with accumulators and much wire, I took over the projection side of cinematography entirely. Rai Bahadur Norbhu, a Tibetan from Darjeeling, British Trade Agent, Yatung, interpreter and liaison officer completed our party. Together with our clerical and medical staff, servants and grooms we were fifty strong.

The Mission assembled gradually. I travelled from Peshawar to Simla where I was introduced to Gould and had the objects of the Mission explained to me. I also had some operating practice on the Army Headquarters group. After five days in Simla I went to Calcutta where I met Chapman and bought a few small items of equipment. I was joined by Dagg who brought with him from Rawalpindi the wireless apparatus which had been supplied by Northern Command.

From Calcutta we travelled together to Siliguri which is the end of the broad gauge portion of the East India Railway. There we hired cars for the seventy-five mile drive to Gangtok, the capital of Sikkim, where Gould had his Residency. We climbed to six thousand feet by a beautiful and very winding hill road. The mountains rose up on either side densely clad in luxuriant jungle. We crossed mountain streams, ravines and rivers by every kind of bridge; old wooden trestle bridges, steel cable suspension bridges, and the very fine modern single-span concrete girder bridge over the Teesta river. In places the road was partially blocked by land slides due to the heavy monsoon rains.

The Residency is a very fine two-storied house, built in the English style, set in a lovely garden of perfect lawns, brilliant flowers and magnificent tree ferns. We spent a busy two days testing the cinema and wireless apparatus, checking stores and dividing them into suitable pack loads. We were joined here by Brigadier Neame. Dagg paid a hurried visit to Darjeeling to collect some five meter transceivers left there by the last Everest expedition.

It was decided that 31st July was a "propitious" day to start our journey. From first light the back yard of the Residency was a scene of seething activity. Finally, over fifty pack animals carrying food, tentage, technical stores and personal effects, ably marshalled by Gyaltsen, Goulds personal assistant, were got under way. By coolies were carried the Stewart Turner charging engine and three cocker spaniel puppies, a personal present from the Viceroy to the Regent. We were mounted on sturdy grey Bhutanese ponies. The majority of these animals had been trained to amble. I found this action much more tiring than trotting though the opposite is supposed to be the case.

The progress of the Mission was naturally slow as befitted the dignity of an emissary of the British Raj; and was, indeed, necessitated by the size of the entourage. A normal daily stage is from twelve to fifteen miles. As far as Gyantse there are comfortable dak bungalows equipped by the Government of India. Our normal daily programme was to be called at 6 a.m., breakfast at 7 a.m., and start the day's stage at 8 o'clock. From first light the pack animals were loaded up and soon after 7 o'clock the tents and personal effects were sent off. We would complete our journey by lunchtime and the rest of the day would be spent according to our various inclinations in wireless sets and reception, photographic work, or botanical exploration. On occasions thermometers were "boiled" to check the altitude as marked on our maps. The accuracy of the military report on Tibet was checked in respect of the route we were following.

Our first day's journey took us along jungle-clad hillsides to Karponang at a height of 9,500 feet. The forest, festooned with fern and lichens and interspersed with bamboo clumps, was streaming with the heavy monsoon rain. Through occasional breaks in the clouds we could see squalid Lepcha villages with their terraced cultivation in the valley below. At this time of the year the rain is not the only discomfort in Sikkim. The plain swarms with leeches and even when walking on the path they find their way through gaps in clothing and boots. We were very glad to get in and dry our clothes in front of big log fires.

We made an early start next morning at 5-30 a.m. in the hope of crossing the Natu La, the 14,600 feet pass on the Sikkim-Tibet border, before the rain came on. We did a double stage, stopping at Changu rest house for breakfast. Changu, which is on a picturesque lake, is at a height of 12,500 feet. The scenery is very like that of the Lake District. As we climbed we left the jungle-clad hills for less precipitous but more rocky hills sparsely covered with pine and juniper; the chief feature being vast thickets of the juniper and rhododendron.

As we had hoped, we crossed the Natu La before the rain came on. On the top of the pass were two cairns of stones with strings of prayer flags stretched between them. Our Bhuddist servants bowed low, shouted incantations and threw handfuls of stones upon the cairns. The summits of all passes in Tibet and all the surrounding Bhuddist States are surmounted with these cairns whose purpose as that of most Tibetan customs and observances is to ward off the devil. Over the pass we descended into an offshoot of the fertile Chumbi Valley. We soon reached the tree line which here is very high, being at nearly 14,000 feet.

We reached our next halt, Champithang, early in the afternoon. The bungalow is situated on a lovely pine-clad hill-side at 13,350 feet. The variety of wild flowers is here even more extensive and Chapman collected over a hundred types in the neighbourhood of the bungalow.

Next day we had a pleasant and easy march of eleven miles to Yatung where is situated the residence of the Tibetan trade agent. Since entering Tibet the road had deteriorated rapidly. For the first few miles the track was fairly level till it dropped rapidly down to a monastery called Kargu Gompa situated on the shoulder of the hill. This, for most of us, was our first experience of a Tibetan monastery. While still some way off we were greeted by the deep notes of trumpets and beating drums. As we approached we were met and escorted to the monastery by a band consisting of half a dozen young monks playing small trumpets, drums and a gong. We were welcomed by the head of the monastery, an affable old man in his russet monk's robes with his hair done up in an astonishing head-dress all interwoven with strands of old rope.

We were taken upstairs and, after being refreshed with tea and assorted sweetmeats of dubious appearance, we were escorted round the halls and shrines of the monastery. It was here that we first met the smell of rancid butter which permeates every building in Tibet. They burn it in their lamps, place it as offerings on their shrines and altars and churn it up in their tea. The frequent drinking of Tibetan tea was the only unpleasant duty we were called upon to perform. Most of the Mission were soon able to drink it without undue distress and Chapman said that he actually liked it. Personally, I always needed all my determination to bring myself to tackle it.

After making a present of money to the monastery we continued and were met by the Officer Commanding the British Trade Agent's escort from Gyantse. We continued down the hill to the floor of the Chumbi Valley where flows the Amm Chu. Some village headmen met us on the way. Everywhere scarves of silk or muslin were presented to Gould. They are used as honorific visiting cards in Tibet.

At Yatung we were greeted by a guard of honour from the B. T. A. 's escort supported by the village school children industriously waving Union Jacks. After Gould had inspected the guard we went to the Tibetan Trade Agent's most delightful bungalow which was to be our headquarters for the next two days.

Yatung is an attractive place. On one side of the river lies the T.T.A. 's bungalow, the timber built village, lines for a Company of the escort detached from Gyantse, the post office and hospital. Beyond the river is the dak bungalow where Dagg and I stayed.

We took the opportunity of erecting the transmitter and tested successfully with several stations on the Army Headquarters Group. We ran the charging engine to freshen up the batteries. Dagg and I were kept busy assisting with the enciphering and deciphering of many telegrams.

On the second evening the escorts dramatic club put on a highly coloured and picturesque play for us. Large numbers of villagers gate crashed the back of the hall though I am sure that they could have understood but little of the high flown Urdu.

Next day our route took us up a steep gorge, the Chumbi Valley here being very narrow and the Amu Chll a raging cataract. After a mile and a half of this we came out into a delightful meadow where the river meandered its way peacefully through grassy fields. This valley was the Lingma Thang.

About two miles beyond this we passed a group of buildings on the left of the road in one of which was a large water wheel. In the old days this was the Tibetan Mint and a Chinese Customs post. The Mint is now at Lhasa and the Customs post has ceased to exist. The buildings and wheel stand empty and derelict. A few more miles over a very broken cobbled track brought us to our next halt, Gautsa at 12,650 feet.

Our next day's march brought us out on to the real Tibetan tableland. We passed the tree line at just under 14,000 feet and emerging from the gorge of the Amu Chu found ourselves on the Phari plain. This is a rolling expanse of sparse grass and crops supporting many head of sheep and cattle and flanked by rounded hills rising to 17,000 feet. About four miles short of the village we were met by representatives of the Dzongpen and other local officials. They were all dressed in their best robes of red, yellow and purple silk and offered ceremonial scarves to the political officer. We all cantered on into the village which is squalid and filthy and dominated by the Dzong, built on a small hill. The dak bungalow was solid and clean.

Early next morning we looked out from the roof of the bungalow on to Chomalhari, with her sun-kissed snow peaks breaking through the morning mists. She lived up to her reputation of being the most beautiful mountain in the world. On our march over the Tang La to Tuna we passed close to her base. She rose eight thousand feet above us and it was easy to appreciate the superstitious reverence in which the Tibetans hold this Queen of Mountains.

Continuing to the bungalow on the shore of the Dochen Lake, we passed the village of Guru and the hot springs of Chhu-Mi-Shing-Kung where General MacDonald fought one of his battles with the Tibetans in 1904. The next halt at Kala was also on the shores of a lake. These lakes are about ten miles across, are steadily shrinking and also very salt. On this occasion Brigadier Neame took Dagg and myself off with a telegraph lineman as guide in the hope of shikar. We saw some goa, Tibetan gazelle, but they moved off rapidly and gave us no opportunity of a quick stalk.

We now entered a valley which is the source of the Shigatse tributary of the Tsangpo River. The climate was warmer and softer than that of the exposed plateau. Wild flowers and small juniper bushes were once more in evidence. On the way we saw several kyang and goa. The kyang or wild ass is a beautiful and strikingly marked animal which can move at an amazing pace; a newly born foal but a few hours old is supposed to be able to outdistance a horse.

Resting the night at Samada we continued down this valley and met Rai Bahadur Norbhu. He had just come from Lhasa where he had been arranging details of our visit. He was wearing his best silk Tibetan robes and had a fine embroidered saddle cloth.

As our march continued the valley narrowed and the containing hills became higher and steeper. Some reached to the snow line. We passed through the Red Idol Gorge. This takes its name from the red sandstone of which it is largely composed and the many images of Buddha carved in low relief on the rocks. Beyond the gorge cultivation increased and the valley was well irrigated.

On the next day was the eagerly awaited stage to Gyantse. We were to spend several days here as the political officers had business to transact. It was for us a very welcome opportunity to check stores and to test wireless and cinema apparatus.

There were many officials to welcome us and our entry into Gyantse had to be most carefully timed. Starting about three miles from the fort we were met by Raja Tering, a relation of the Maharajah of Sikkim. Half a mile further on we were met by the British Trade Agent, Mr Richardson, Captains Guthrie and Morgan, the agency doctors, with Captain Salamons with a guard of honour of mounted infantry with many chuprassis wearing highly coloured uniforms. A mile further on the Eastern and Western Dzongpens met us and finally the Tibetan Trade Agent of Khengchung and the Abbot of Gyantse Monastery.

Our time at Gyantse was well filled. We tested the wireless transmitter and ran through many hundreds of feet of film in search of suitable material to show the Tibetans.

The only apparatus which had suffered on the journey was a public address loudspeaker and an M.L. converter which had received a wetting when the yak carrying this load chose to lie down in a small stream. The arrival of some spare diaphragms from Calcutta cured the speaker but our best efforts failed to restore the M.L. to full activity.

The only important thing that would not work was the Stewart Turner charging engine. There had not been time to carry out the modifications necessary to make the engine run in the rarefied atmosphere of these altitudes and at 13,000 feet the engine stuck. Dagg went back to Calcutta to obtain a hand-driven charging machine, and a telegram was sent to England for high compression cylinders and variable jet carburettors. These arrived after about ten weeks, and with these modifications the engine developed phenomenal power and made a noise like several machine guns which greatly impressed the local inhabitants.

The dak bungalow is very comfortable and is set in a pleasant garden surrounded by willow trees. The village, some three quarters of a mile away clusters round the foot of a hill whence it is dominated by the Dzong, towering 600 feet above the plain. The surrounding country is, at this time of year, rich with crops and five miles off the encircling hills rise to some 17,000 feet.

One day we attended a race meeting at the B.T.A.'s post. The oval track was about a quarter of a mile long. There were several races for ponies, also a pacing race and one for cows and yaks, which caused much enthusiasm and amusement. Tent pegging by the mounted infantry and prize-giving were followed by a stupendous lunch party attended by all the local notabilities who consumed vast quantities of chang, gin, and sweet liqueurs. The locals picnicked in the fields and got very merry on quite small quantities of chang.

After three days the political members of the Mission departed for Lhasa. I was left behind with all the wireless and cinema apparatus till they should have paved the way for the production of these sidelines. I spent a fortnight in Gyantse keeping daily in touch with the Army Wireless in India, running through cinema films and generally making sure that the technical equipment was in good order.

On the day of the departure of the main party we were invited to lunch by Raja Tering. This was typical of many subsequent parties. Being my first experience as a guest in a Tibetan household it is clearly impressed on my mind and I will describe it in some detail. Arriving about 11 a.m. we indulged in an orgy of photography and then settled down to tea and biscuits. We squatted on low sofas round a table about a foot high. After about twenty minutes servants appeared with a dozen or so small dishes containing highly spiced meats, fish and vegetables. We helped ourselves with chop sticks, stretching across the table for anything we fancied. After about half an hour the servants reappeared with the "piece de resistance". This consisted of bowls of flat home-made spaghetti in soup with a little minced meat. One added any of the odds and ends off the table to taste. It was etiquette to consume four of these bowls. This presented but little difficulty to the younger members of the Mission. The ability to consume vast quantities of strange food is an essential qualification to any member of such a mission as ours. The meal was rounded off by coffee and liqueurs and we were able to take the road about quarter past one.

After a fortnight I received the long hoped-for instructions to proceed to Lhasa. I was provided with a passport to enable me to obtain changes of transport at the different stages. Besides my bearer I was given a chuprassi to act as interpreter and make all the necessary arrangements for me at each halt. There were no dak bungalows beyond Gyantse and only the larger villages had a room fit to sleep in. Otherwise we used tents. My first halt at Gobshi did not come under the former heading. After passing the Tering's house I left the plain and entered a gradually narrowing valley well irrigated and fertile with barley and willow plantations. Gobshi proved to be small and dirty, and to make matters worse there was the rain. On arrival I was led into the house of which the ground floor was given over to cows and chickens and other insanitary purposes and had to be smelt to be believed. I climbed a rickety ladder and was shown a dank cell-like room. One look was



sufficient and I hurried out to await the arrival of my tent. This was the only uncomfortable night that I spent.

My next march brought me to the head of the valley and out into the pleasant grassy plain of Ralung. This is used by the Tashi Llama as a camping ground on his journeys to Shigatse. I spent a comfortable night in the Tibetan telegraph lineman's bungalow. Leaving the plain I entered a narrow stony valley leading to the 16,600 feet Kar-o-la. The entrance to this valley was dominated by a 23,800 feet snow-capped giant called No-jin-kang-sang, very similar to Chomolhari. The Kar-o-la was the scene of General MacDonald's final encounter with the Tibetans before he entered Lhasa. The view from the top was magnificent. All around were range upon range of snow and ice-capped mountains. Hanging glaciers reached to within a few hundred feet of the top of the pass which was adorned with the usual cairns of stones and strings of prayer flags. Moraines reaching down to the path spoke of the extent of the glaciers in bygone days.

I descended the pass to the Nang-kar-tse plain and the Yam-drok-tso. The plain was fertile with many acres of good barley. The lake is enormous. From three to five miles wide it sweeps round the hills in a vast horseshoe for forty-five miles. It abounds with wildlife of every kind. The closer one approaches to Lhasa the more is wildlife protected and the greater its abundance.

I was given a clean comfortable room in Nang-kar-tse in a shadow of the Dzong. My chuprassi went off with my passport to arrange for a change of transport.

Following the shores of the lake I came to Pede-Dzong a very similar village to Nang-kar-tse. There I was fortunate enough to witness an interesting ceremony. All the fighting men of the village turned out in their brightest robes on gaily caparisoned ponies. Headed by monks bearing banners, beating drums and blowing trumpets they rode in procession round the fields. As the corn was just ripening I imagine they were invoking some god to bless the crops and give them a good harvest. The blowing of trumpets is always regarded as being a potent method of scaring devils.

Next day I crossed the Nyapso-La, the last pass before reaching Lhasa. The dominant feature of the view to the north of the pass was a great turgid swift flowing river, the Tsangpo. The identity of this remained for many years a mystery till it was proved to be the Bramaputra.

On descending into the valley of the Tsangpo one is immediately struck by the mildness of the climate. In this sheltered valley at 11,500 feet the temperature was many degrees warmer and the vegetation correspondingly more luxuriant. The hedgerows were bright with flowers, and the crops were excellent, a great change from the exposed plain I had left. I spent a comfortable night in a tent left by the political officer. As was my custom I set up a wireless receiver and loudspeaker and received news and music from several short wave broadcasting stations. The inevitable crowd of curious villagers rapidly collected.

My next stage to Chusul was completed by water. Myself and luggage were loaded into coracles constructed of yak hide stretched over a light wooden framework. They were about six feet long, three feet wide at one end and four feet at the other. They were lashed in pairs, broad ends together. A waterman at each end of the combination guided the coracle into the swiftest part of the current with a pair of short oars. They sang monotonous chants as they rowed. We were carried swiftly downstream. We passed Chaksam where a ferry plies in winter when the river is low. There is also the remains of an old suspension bridge in the form of heavy chains slung from a monastery on the right bank to an island in the middle of the river.

I arrived early at Chusul where I found a good room in the village. After lunch I went for a walk in some willow groves on the river bank. A good variety of crops, potatoes, peas, beans, carrots, buckwheat and barley flourished in the mild climate. Besides willow, apricot, peach and walnut trees gave welcome shade.

I now turned up the valley of the Kiy-chu, the river on which stands the holy city itself. At this time of the year the stream is heavily flooded and in places a mile wide. At other places it swirls in

deep narrow channels at the foot of the bluffs and cliffs along which winds the track. The valley is warm and fertile with many villages and monasteries.

A full halt at Netang and the great day arrived on which I was to enter the holy city of Lhasa.

The valley became broader and we passed many well built stone houses, the summer residences of Lhasa high officials, standing in parks and willow groves. I crossed a tributary of the Kiy-chu by a bridge, part of which was of steel girder construction, the components having been carried up from India by coolies.

Looking up I saw the dominant feature of the place, the Potala, standing on its rock five hundred feet above the city. Breaking through a rift in the clouds, the sunlight glowed from the gilded domes which cover the tombs of the Dalai Llamas.

Approaching the city I passed the Monastery of Drepung, a town in itself, the home of some seven thousand monks, idle parasites living on the forced charity of the hard worked villagers who are compelled to pay a quarter of their produce to the monasteries. Further on I passed the Norbhu Ling, meaning "jewel park", the beautiful summer palace of the Dalai Llama.

I passed people of all kinds; monks riding or on foot, the more senior on fine pacing mules with gaily coloured harness and saddle cloths; poor people in black homespun clothes with small children running beside them or babies on their backs; sturdy shepherds or traders from distant parts with sheepskin boots and clothes. Everywhere scrofulous dogs, and diseased beggars with tongues protruding in supplication importuned the charity of the passer-by. Small boys with baskets on their backs scavenged the animal droppings for fuel.

Crossing a dry watercourse I rode down a gravelled road between stone walls enclosing willow plantations to the Deyki Lingka. This was a willow plantation containing a well-built stone house lent to us by the Abbot of Gundeling Monastery as our residence for the period of our visit. It contained sufficient rooms for Mr Gould and Brigadier Neame to sleep in and for dining room, sitting room and offices. The rest of us slept in tents in the garden. The Signal Office and Transmitter were accommodated in my tent. The garden, though somewhat unkempt, was pleasant and shady.

Lhasa city itself is the very antithesis of romance. It is mean and dirty. The houses are begrimed with filth and smuts. Miserable pie dogs roam the narrow streets and scavenge in the refuse heaps. Beggars squat against the walls and with obtruded tongues and upraised thumbs whine for alms. Floods cover the waste ground beside the road; the water is black and slimy and stinks to heaven. The Tibetans have no idea of sanitation. They squat, men and women, in the street like dogs. Were it not for the cold climate, every form of epidemic would be rife.

In striking contrast to this squalor stands in unchallenged might and dignity the Potala. Five hundred feet high and 900 feet long, its majestic proportions match to perfection the rugged country which it dominates. Containing a monastery and monastic college it is the official residence of the Dalai Llama and houses the main government offices. On the summit are shrines with gilded roofs containing the mortal remains of past Dalai Llamas. Beneath are grim dungeons where languish certain political prisoners. Without, on the Southern side towards the western end, are the government prisons and printing establishment.

Within the Potala is disappointing. There are details and occasionally a complete room which are worthy of the palace, but there is no sort of unity. The various assembly halls, offices and store rooms are connected by dark and evil smelling passages while the whole place is anything but clean.

The most impressive part of the interior of the Potala is that containing the mausolea of the Dalai Lamas. The earthly remains of these priest kings are contained in gold and silver chortens richly encrusted with turquoise and precious stones. As the tomb of the fifth Dalai Llama is sixty feet high and that of the thirteenth even higher, they are worth a king's ransom.

The view from the roof is superb. The whole vale of Lhasa lies spread out before one. The city, the Lingkas the Kiy Chu the plains of Sera and Deprung and the vast monasteries themselves merge into the all encircling hills is a panorama not lightly to be forgotten.

In contrast to the dominance of the Potala is the colourful restfulness of the summer palace of the Dalai Llama, the Norbhu Lingka. Surrounded by a granite wall ten feet high and set in a well laid out garden half a mile square stands a gaily coloured building of large airy rooms decorated with beautiful tapestries and mural paintings. The floors are of perfectly polished wood and everything is spotlessly kept. It must be remembered that although a new incarnation had not then been found since the death of the last Dalai Llama his spirit still lived, and his residence was kept with the same loving care as during the lifetime of his body. Before the throne in his throne room and reception room stood tables on which were his jade teacup, golden prayer wheel and bowls of fresh fruit.

The Norbhu Lingka contains three palaces, houses for his chief officials, an inner enclosure containing an artificial lake with two summer pavilions, the royal stables and the barracks for his personal bodyguard. Beyond one of the palaces stands the Dalai Lama's garage containing two cars now forlorn and dilapidated. The water garden was his private retreat, where he retired daily to escape the attentions of officials and servants and spend several hours in meditation and devotion amongst the birds and flowers which he loved.

In the centre of the city stands the cathedral, again a forbidding and dirty building. Near the entrance stands an eight foot prayer barrel being turned by an impassive-faced old woman. Off the main hall open many small dark cells. In the chief shrine at the eastern end of the temple stands a life-size image of Gautama Buddha, with repellent features, the body thickly encrusted with precious stones.

To the south of the cathedral is the main square which is used as a market place. To the north of the square stands the Kashag or meeting place of the Cabinet. Round the cathedral is the main shopping centre. Most of the shops are in the form of stalls in the market place or the goods are merely laid out on the cobbles. The larger shops consist of basement rooms opening on to the street. The variety of goods displayed is enormous. Prayer flags, cloth, semi-precious stones cheap toys and china, homburg hats and scrap iron, tea and skins are but a small selection of the amazing variety of goods offered for sale.

In one corner stands, in modern detachment, an electric light standard -for Lhasa has her electric light plant. Five miles away in the foothills where a mountain stream enters a valley a turbine turns a 3 KV alternator. Thence on iron standards the power is brought to the city. On a damp evening the inadequate insulators shimmer with continuous discharges. In the city the power is transformed down to 440 volts. By day this is diverted to the Mint where efficient British made electrical machinery stamps out the Tibetan coinage and prints their bank notes. By night the power drives a generator which charges a 400 volts bank of accumulators whence 200 volts D. C. is supplied to the city on a three-wire system.

The Mint is adjacent to the barracks where the standing army of some 500 N.C.O.s and men are accommodated. Here, on my first day in Lhasa, Brigadier Neame reviewed them. In the morning we rode out on our ponies and were met at the gate by a guard of honour. After inspecting them we rode into the barracks and were entertained with tea and sweet biscuits while we waited for the Prime Minister who, by virtue of his high rank, is privileged to arrive last. We then witnessed them carry out some infantry drill, all commands being given in English. After lunch they carried out some rifle practice and fired Lewis guns, Vickers guns and 10-lb mountain guns. The whole town turned out to watch. In a vast horseshoe formation they converged dangerously on to the line of fire. Huge monks with whips stalked up and down keeping order.

A few miles further out across a sandy plain and sprawling at the feet of the encircling mountains are the vast monasteries of Sera and Drepung, housing respectively 5,500 and 7,000 monks. They are cities in themselves with narrow winding streets. Looking out into courtyard and street are the monks' cells. The life of the monasteries revolves around the colleges into which they are subdivided. Here the young monks receive instruction and all worship. They are large halls with roofs supported on square wooden pillars, hung with tankas and lit by the flickering light of butter lamps. At one end is a long altar with images of Buddha and offerings of grain and butter. Everything is sticky with the spillings of tea, and the odour of rancid butter pervades every nook and cranny.

The population of the city is of the most varied. Traders from Sinning, Mongolia and India, sturdy shepherds from Kam who indulge in brigandage as a sideline, mingle with the villager in for the day and the city types. A high official rides by with his flowing robes of red and purple astride a gaily caparisoned pacing mule. Again the small children scavenge the animal droppings for fuel.

Everywhere we met with the greatest hospitality. We were called on and entertained by officials of every grade in turn. We ate everything from twenty-course lunches, lasting from twelve o'clock till 5 p.m. with Cabinet ministers to simple informal suppers with Ringang and his family. He was educated at Rugby and runs the electric light plant and the mint.

We devised a variety of ways of amusing ourselves and keeping fit. On Sundays we would go for long walks into the hills and climb anything up to 6,000 feet. We organised mounted paper chases and "Mr Goulds hounds" would meet twice a week and pursue cunningly laid trails of paper. The locals could never quite make out what we had lost and had a habit of sweeping up the paper.

We formed a football team, called ourselves the Mission Marmots and defeated Lhasa United one-love after a hard, cleanly fought game. A seven-a-side football league was formed and was progressing well until some rogue stole our goalposts for firewood. In the evening we had the gramophone and wireless to entertain us.

We gave several cinema parties with a 16 mm projector. Besides the film we had taken ourselves, both colour and black and white we had a variety from the Kodascope library. Charlie Chaplin pre-war vintage, Rin-Tin-Tin, Hendon Air Pageant and the Jubilee were in constant demand. Not only did we play to a packed house in our own dinning room, but we gave private shows to the Regent, the Prime Minister, to the small monastery who owned our house and to the troops of Norbhu Lingka guard. Our audiences young and old were always easy to amuse, appreciative and a pleasure to entertain. During one of our children's parties, Mr Gould left the room to return with his arms full of crackers. The party which had started with a swing continued with a bang!

We saw Lhasa from summer through autumn into winter. The crops cut with sickles were threshed by oxen and yaks or beaten out with flails. Women would pour the grain into the wind to willow it. On a still day another woman would fan the falling grain. The fields which had been green with peas, beans and potatoes became one brown, bare dusty expanse. The temperature fell till we were getting twenty degrees of frost at night though the sun was quite warm by day. The wind got up and we were plagued with dust storms. One morning we woke to find four inches of snow on the ground. It left the valley in a few days, but remained in the hills for a long time.

A considerable southerly migration of birds took place. Those who had spent the summer on the brackish lakes in the north came down to Lhasa's sheltered valleys, while Lhasa summer residents travelled further south still.

Towards the middle of December the Defence Department ordered one of the Signal Officers to return. Dagg was not yet fit. He had had an accident with a maroon on Armistice Day and several bad cuts on his face were not yet healed. It was decided that I should go. I was not unduly loath as thoughts hunting with the Peshawar Vale were beginning to call. It was arranged that Freddie Chapman should accompany me back as far as Narg-kar-tse -- partly as a holiday, and partly to study animal life and to take photographs.

Winter travel in Tibet is no picnic. From an hour after sunrise till late afternoon a freezing gale blows laden with sand and grit. At Chaksam ferry we had to wait over half an hour for a lull in the storm before it was safe to cross. Over the Kar-o-la the wind was so strong that the air was full of small pebbles. Everywhere the country was barren, dusty and icy. The wise traveller starts at 1.30 a.m. and travels in the early hours of the morning before the wind gets up.

I was not a wise traveller. Early rising not being my strong point I was seldom on the road before 8 o'clock and by 9 the gale had developed its full fury. Wearing poshteen, Gilghit boots, fur-lined hat and goggles, and with my face swathed in a scarf, I battled from rest house to rest house. The wind had the inevitable effect on my nose. In the short time necessary to deal with the offending organ my handkerchief froze stiff in my hand.

One might have expected to contend with snow as well; but owing to the dryness of the climate north of the Himalayas hardly any had fallen on the tableland and so little on the passes that even the few pack trains crossing at that time of year were able to keep them open without difficulty. Winter merely accentuated the brownness of the country. The Doshen lake best demonstrated the power of that awful wind. The cold had, with difficulty, subdued the tormented waters. The ice was riven and hummocked; the lee shore was piled ten feet high with a barricade of ice blocks and driven spray.

I had two days rest at Gyantse and some much needed baths. I also replenished my stock of food. I cannot speak too highly of my Pathan bearer Nurghul Khan. However arduous the journey he always turned up to produce a good hot meal and make my bed, as well as looking after himself and my baggage and chasing the drivers. He was the only man I met who could hurry a Tibetan.

I was very glad to reach the shelter of the Chumbi valley. The wooden houses reminded me of the chalets of Switzerland and made me feel quite homesick. The Amu-Chu was now a quiet mountain stream with ice fringed banks. Where waterfalls, draining the hillsides, had flung themselves in hundred foot leaps into the gorges, hung majestic icicles, throwing back the clear sunlight in every gorgeous colour.

The clatter and modernity of Calcutta seemed all wrong, and New Delhi in her white and orderly smugness would have drawn up her skirts in horror at the thought of winter conditions in the highlands of Tibet and other manifestations of a more elemental nature.

A big toe aching from slight frost-bite did not let me forget. There were other and more pleasant memories. The hospitality of a kindly people amazingly unspoilt and with a quiet natural charm is not to be forgotten. Above all the company of friends with whom I worked and played and shared these experiences for several months, learning a tolerance bred of a deeper understanding and knowledge than can be acquired from acquaintances under the artificialities of station and cantonment life. A wonderful and valuable experience which I shall never forget.

## APPENDIX

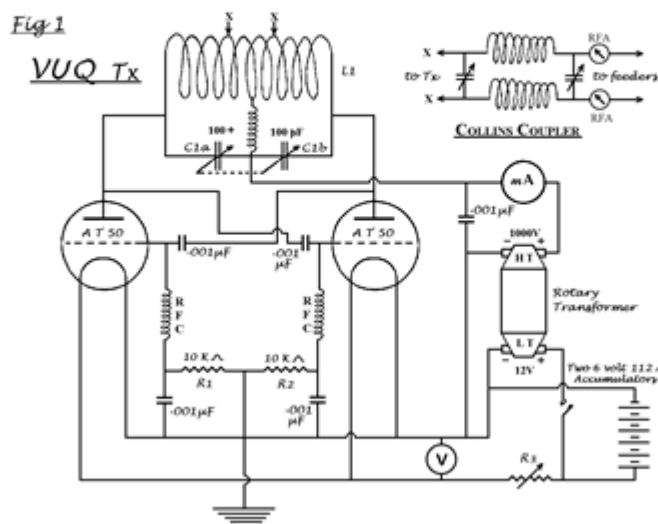
### G5YN

The duty of providing radio communications for the Mission was given to HQ Northern Command, India at Rawalpindi. Captain S. J. Dagg, long since like myself retired as Lieutenant Colonel, was given the job. While technically fully qualified and competent he did not know morse. Fortunately for me he knew I was a Ham so I was brought along as an operator.

The main transmitter, constructed in the Unit Workshops at Rawalpindi was a self excited push pull Hartley using two AT50 bright emitter triodes. The circuit is given at Fig.1. It was built on a rectangular varnished wooden chassis probably about 18" square and 4" deep with the tank coil and condenser L 1 C 1, and valves mounted on top with stand-off insulators. The small components were mounted underneath with meters M1 and M2 and filament rheostat R3 on the front drop. The Collins Coupler whose coils were wound on Eddystone plug-in formers was mounted separately.



L1 C2 conveniently covered 14 Mc/s as well as the Army Group frequency of about 10 Mc/s. The dipole with open wire feeders which were 45 feet long cut for 10 Mc/s. With the aid of the Collins Coupler no difficulty was found in making it and its feeders resonate on 14 Mc/s. (The length of the feeders plus half the aerial conveniently came to 67 feet!!).



The companion receiver was built to the design of the Eddystone "All World Four". This was described in an Eddystone Short Wave publication of the time and was primarily designed for medium and short wave broadcast reception. It used Eddystone plug-in coils to cover medium and short waves. It consisted of an RF Amplifier, leaky grid detector with reaction, audio amplifier and output stage. It was noisy and not very stable and its tuning and reaction controls were not very smooth. It was rather tricky to handle on weak CW.

I had brought with me a low power "bread board" transmitter. It was an MOPA with a DE5B Hartley oscillator. The PA stage was two PX4s, neutralised, in push-pull. This worked quite well up to 7 Mc/s but above that the efficiency fell rapidly. It was also too fragile and unstable. We did not use it. However the receiver I brought with me was most successful. It was a "1-V-1" using an RF pentode for RF and leaky grid detector stages and a small high gain audio pentode for the output stage. All the receiving valves were two volt battery types. This receiver also used plug-in coils wound on Eddystone formers. The main tuning control was a "Utility" 100:1 Epicyclic drive and the reaction condenser had a 6:1 Epicyclic drive built in. This receiver was much more stable and its controls a delight to operate. Its best characteristic was its very quiet background. The weakest signal stood out clearly. Its circuit is given at Fig. 2. We passed official traffic over the Army Headquarters Net. Old Timers will remember this the "VV Group". Our own call was VUQ. We were able to maintain reliable CW communication with all members of the group including the most distant one in Hong Kong.

The dipole was suspended 40 feet above ground in the garden of the Deyki Lingka. One end was supported on a duralumin mast composed of eight five foot sections. The other end was supported by one five foot section on the flat roof of the Mission house. The open wire feeder was led straight in under the fly of my tent. In the very dry atmosphere the canvas was a perfectly satisfactory insulator.

When not operating on the VV group, compiling a log of stations received on all possible frequencies or coping with my share of Mission work and social activities I investigated the possibilities of the 14 Mc/s band. I made up my own call sign from the internationally agreed

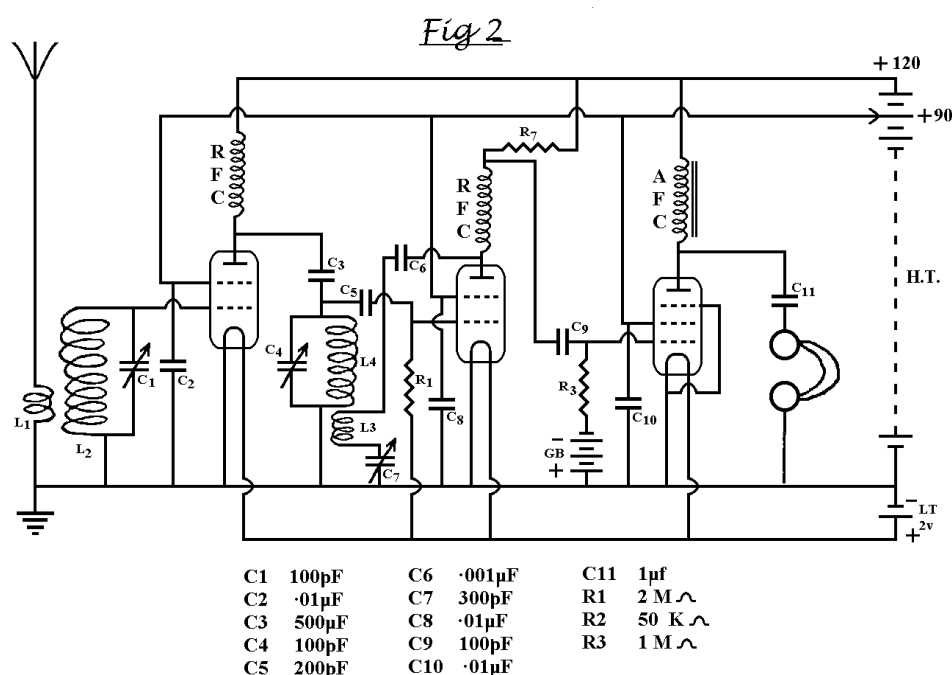
country prefix AC4 for Tibet and part of my own call sign, YN. Thus AC4YN was born. Australia and New Zealand came through very reliably. This was most fortunate as the leader of the Mission had relations in New Zealand and we were able to pass Christmas greetings between them. This was excellent for the reputation of the Corps and Amateur radio.

Indian amateurs were, of course, easily worked but Europe was not so easy. The first European stations to be contacted when I made my first transmissions in the late summer were Russian and Eastern European countries. As the year progressed so contacts were made further and further to the West. I do not remember raising any British stations before December. Only a few had been worked by the time I had left the Mission towards the end of December. However, Fox worked many more after I left. One point of interest, though I did not realise it at the time was that 1936 was one year after a sunspot maximum.

Until the modification parts for the Stuart Turner engine arrived we had two alternative methods of getting our batteries charged. We either took them along to the electric light plant where they were connected in parallel with the float cells of the main 400 volts bank of accumulators or we used our own hand charging machine. This was cranked by six coolies who sang mournful dirges the whole time. The accumulators received heavy use as they were used not only on the radio equipment but also for the Public Address and Cinema projector.

Owing to my commitments with the Mission it was not possible for me to spend a great deal of time on 14 Mc/s. As no advance publicity had been given and as in any case there were far fewer amateurs in those days we suffered none of the "pile-ups" of the modern DX-pedition.

When in due course Dagg and I returned to our Regiments Fox took over. He was ex Royal Signals and at the time was employed as a telegraphist at Calcutta. When the Mission closed he stayed on in Tibet having married a Tibetan girl. He left Tibet when the Chinese invaded and died in India shortly afterwards.



In its day AC4YN was the most famous of the rare DX stations. Alas, it is no more and can never be again.

## THE "DELTA" ALL-BAND ANTENNA - PART II.

GW3ASW

(Continued from previous issue of "Mercury" (Winter)).

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Results on 80. On 80 (where I work mainly inter-G fone) results have been excellent as those reporting me on the L.F. Net can support. I was heard in ZL one morning on CW but no serious efforts have been made to go for DX apart from a couple of VE's and 3 W contacts earlier on when the early morning brought a few of them into the open.

Results on 40. Results have exceeded expectations. On CW using a strict 125 Watts to enable a check to be made on results I have been rewarded by all W call areas including Alaska, 27 States, a UA0 (off the end!) located on the Bering Straits, a couple of VK's, and a ZL reporting me heard at 569. Total, 65 countries since March without really trying. Excellent inter-G and Eu fone.

Results on 20. Again since March I have worked 40 States including KH6, KL7 all call areas ZL reports are around the 459 mark but usually good reports have been received from VK. A total of 72 Countries have been worked.

Results on 15 & 10. Apart from testing, no serious activity but contacts show excellent promise.

WILL IT WORK WITH CO-AX? I always get asked this question!. If you are prepared to accept a different set of operating conditions - yes, it certainly will; but remember that the design frequency is on 20 Metres ( these Metres are safer than these new fangled Hertz!) and any matching device (stub) will be a reactance on others.

Matching to 72 Ohms. (Refer to Fig. 3). As erected and designed, the antenna mentioned above is two full waves (top plus delta section) so, therefore the feed point a voltage antinode and a quarter wave matching section is necessary. This is made of 600 ohms feeder line to which can be attached your co-axial feed. The 600 ohms line is attached to points 'x' and 'y' in Fig. 3. I reiterate that on all other bands a reactive mismatch occurs. The phasing section is best tested in situ. This is easily done by erecting the aerial first attaching WITHOUT making electrical connections to the antenna. Erect the 600 ohms line into its working position, short out the end to which the co-ax will be attached and by using your GDO trim the line to exactly 14.1 Mhz (perhaps there is something to be said for these Hertz after all!) Once you are satisfied, solder up and you're away!. N.B. Measure the length of the phasing stub for future reference as from it you can "write in" your own VF of the line. If you have to work by rule, use the formula  $234/f = \text{length of quarter wave in feet}$ . This must be multiplied by the Velocity Factor (VF) of the line in use. The average VF of 600 ohms line is 0.975 and for 300 ohms line is 0.83. If in doubt, be a little short rather than the opposite.

A local amateur, Bert Vowles, GW3RHC, has, for the past few months, been testing out the co-axial fed version. I am indebted to him for his help and assistance. He has been very pleased with the results and has passed along the following VSWRs taken on a Heathkit Bridge. These are average readings taken over a period under various weather conditions.

3.5 Mhz - 1:1.5,	3.550Mhz - 1:1.3,	3.600Mhz and above - 1:1.
7.000 Mhz - 1:2.5,	7.050Mhz - 1:2.4,	7.100 - 1:2.
14 Mhz band - 1:1.		
21 Mhz band - 1:1.1.		
28.000 Mhz - 1:1.3,	28.200 Mhz and above - 1:1.	

His general comment is to the effect that it is better than any other antenna he has tried to date, also his TVI troubles have been greatly reduced (probably due to the better VSWRs and the fact that the system is a balanced one).


Whilst I won't disagree with Bert's readings as such, I do believe he is little generous particularly on 21 where I would have expected them to have been of similar order to 7 Mhz. If someone tries it, perhaps they will let me know ..... me? I still prefer my open wires!. If I generate r.f. I hate the thought of losing it because of heat losses.

#### HALF SIZE VERSION.

A half-size version will work 40/10, but to date, except for very brief tests, to ensure operation, I have had insufficient time to evaluate results. Perhaps someone who is really hard up for space will try one.....? One has gone up locally but very recently and no data is to hand.

At this QTH the bottom of the Delta is about 7ft. 6ins from the ground and very close to the garage. Not an ideal location. At least a quarter wavelength of one of the radiators is within 8ft. of the roof of the house and the antenna slopes upwards to the North. However, the QRA is, as its Welsh name suggests (Cwmbach) "in a little valley" spurring off the main Dare Valley. Generally, however, I am lucky as the house is 530ft ASL and any lobe over about 8 degrees will clear the surrounding hills except to the North-East where there is one "small" bump about 1½ miles away. This needs 15 - 16 degrees -- Oh well, there's always the other way round!.

I make no claims for this design as being the antenna to outlaw all others or be party to any of the sometimes fantastic claims one hears on the bands, apart from the stated claims above which have been proven over a fairly long period. It is, however, a serious attempt to overcome space and geo-physical limitations etc., whilst maintaining good gain and reasonable matching on all bands. It is also an attempt to improve, in some respects and if at all possible some of the contemporary "compromises" currently in use. If you are the type that constructs an aerial today, uses it tonight and condemns it tomorrow, then please don't waste your time as, in my experience, you can only test and evaluate over a reasonable period of time. One final comment ..... if you have room for a spare "Vee" or Rhombic (if only a sma' wee, wee un!) then put it up as they will prove much better than any compromise - I should know!. "Pristinae Virtutis Memor" ... remembering past glories, indeed. In conclusion, if after reading the above you decide to have a go, and you require any advice, help, etc., please do write me. QTH at beginning of each part.

Copyright : 

#### References :

Terman

RSGB Handbook

ARRL Antenna Handbook

Sig. Trg. Vol. II Pt. II (1936) (with amendments to 1942 - notes indeed from the past!)  
(Further details and diagrams overleaf).

With the exception of 80 Metres, where the base of the Delta is a current maximum point, the feed point on all other bands is at voltage maximum (Current antinode). It can now be easily appreciated that with co-ax feed using a ¼ wavelength stub for 20, it will only be on that band that a theoretically perfect match will be made. Matches will be reactive on all other bands, but, as noted above, will not be too lossy. For this reason, I reiterate, if you can use it tuned line is to be preferred (remember those 6HF5's!).

(Editors Note : In an accompanying letter Cyril asks me to point out that practical work on this antenna is still in the experimental stage, particularly with regard to finding a better co-ax match. If you have the time and space to try this antenna, I am sure Cyril would be interested in any results. Please contact him at the address given at the beginning of each part, or QSO him on 80. - Ed.)

Fig.1.  $2 \times \frac{1}{2}$  Wavelength in phase. Gain max 1.9dB

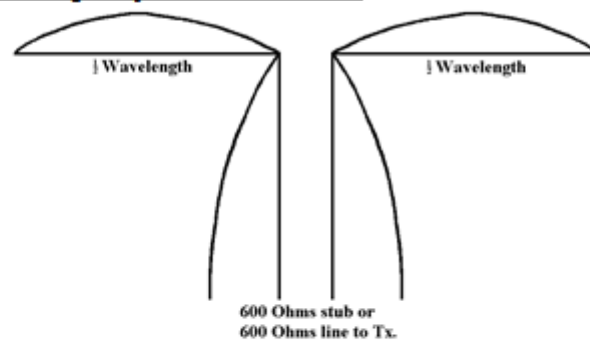
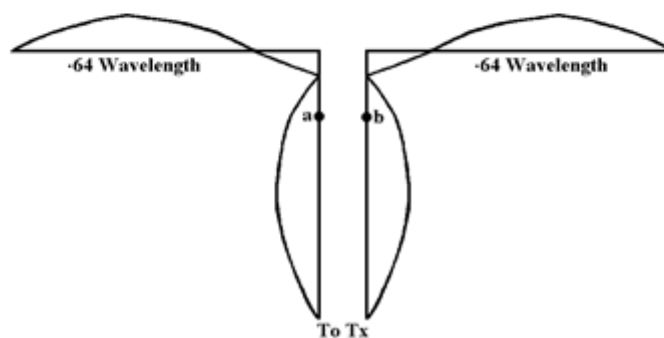
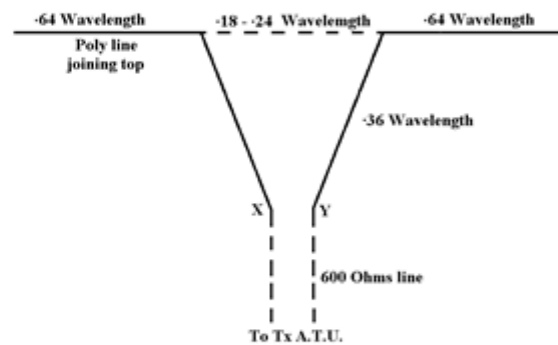


Fig.2. Double extended Zepp Gain 3dB



For single band operation antenna can be fed from a & b at  $1/10^{\text{th}}$  wavelength from centre. See text.  
The above are discussed in the text.

Fig.3. Basic Design



Construction of top is made easier if small egg insulators separated/joined in centre with 200lbs polythene line are used at points X & Y, and ends of horizontal wires should be insulated in the best possible means as these points are mostly at current antinodes. If wire is used to join top it must be broken up, preferably every 2/3ft. Movement of the Delta away from the vertical will cause distortion of the above, and on 20 Metres at about  $12^\circ$  the main lobes commence to "split up" into an approximation of the normal  $2 \times 1$  wavelength polar diagram.

80



Operates as a dipole with excellent performance even with stub and co-ax feed as discussed in the text.

40



Functions on this band as  $2 \times \frac{1}{2}$  Waves in phase. SWR very low on tuned line, and not alarmingly high, despite reactive mismatch with co-ax feed. Gain approx. 2.6 dB

20



Again (see text) despite fact that array is  $2 \times 2$  full waves. The horizontal polar lobes predominate and radiate as  $2 \times 2$  half waves in phase - gain just over 3 dB. Some minor lobes due to vertical interaction.

15



--- Polar diagram is rather distorted. Horizontal radiation from  $2 \times 2$  full waves spaced approximately  $\frac{3}{8}$  wavelength. Plus a vertical component of  $1 \times 1$  wavelength which appears to complement each other.

10



Another complex pattern of which 3 wavelengths are in the horizontal mode and slightly more than 1 in the vertical. This band as with 21, not sufficiently investigated.

THE OTHER MANS JUNK HEAP, AND HOW IT DEVELOPED (With apologies to "SWM")  
9H1BE.

Harry first became interested in electrics at a very early age, when he became friendly with a boy genius at school. (Said boy genius last heard of working for the Atomic Energy Authority at Harwell). The first project was a single loop electric motor. This motor, when switched on, guaranteed to give about half a rev. then stand quivering between the poles of the magnet. The next project was a crystal set, made up breadboard fashion. The coil was wound on the innards of a toilet roll, the variable capacitor was constructed from

Dads old razor blades stuck into balsa wood dowels and pivoted through a couple of skate wheels. I suspect that John the Genius even dug the quartz from his own back garden. The receiver worked very well and became an official project for the following science classes. Perhaps some of the old timers can remember the terrible razor blade shortage around 1941/2. This was, in fact, due to the hundreds of variable capacitors being constructed, and had nothing to do with the War (!- Ed.). MkII followed quickly, this one being built into a Swan Vestas box (miniaturisation yet!). This was not so successful due to the fact that the coil was wound on pencil stubs, or because the capacitor was commercially made.

Here we digress for a moment, and also to change from third to first person as it's easier to think that way.

John was something of a practical joker and most of his pranks took place during chemistry classes. The first I remember was to drop a bottle of black ink into my soap making experiment. My reply to this was a couple of spoonful of a well known Liver Salts into his electrolysis experiment. Some time later, whilst I was engrossed with a galvanometer and a few bits of wire, he dropped a piece of caustic soda into my jacket pocket. I didn't find this until it had burnt through jacket, trousers and most of my chubby thigh!. My comeback to this one was half a bottle of concentrated sulphuric acid into his pocket (NOT recommended- Ed.). He found this in a much shorter time. All this by way of an explanation of why I am always to be seen with my hands in my pockets, since hearing of Johns' appointment at Harwell.

To get back to the heart of the matter, my interest in radio went forward at a terrific rate, and ten years later at the age of 23, I decided to build Mk III. This posed quite a problem as quartz crystal was almost unheard of by now. The nice man in the shop assured me that this little thing called a diode would do exactly the same job. I spent many happy hours trying to find out where the cats whisker had to be applied. It worked eventually.

Two years later, I rejoined the Army and was posted to 1 TR Catterick. There they had a Club for radio enthusiasts, which I joined, mainly for the purpose of obtaining cheap components... . The Bug had really bitten now - that was in 1952 - and in the next twelve years I sat in a few shacks and clubs, watching amateurs at work, and developing this intense passion for the hobby. Fortunately, in 1964, I was posted to Cyprus, otherwise I would still be sitting and watching. There, at Episkopi, was a Royal Signals Club station, left behind by John Worrall. It had three members, all RAF, and I found myself to be a very important person indeed. I had fourteen months of happy, if somewhat illegal, operation, both from ZC4TJ and the other club which I ran, ZC4TX. This was an ideal opportunity to get my CW up to scratch and I spent the last four months almost exclusively on the key.

I was posted back to Catterick in early '66 and immediately reported to G3CIO. There with the help of Les Beaumont, Johnnie Hodgkins and a few other members, I obtained the necessary confidence to enter for the RAE. To my surprise I passed, and a little more badgering from Les, saw me on my way to the local morse testing point. A little more flannel there and I was in. I was issued with G3VTU, and with that call I made about six QSOs and was then posted to Cyrenaica.

On arrival at Benghazi I immediately applied for a call. The Israelis however, decided that their cause was more pressing than mine, and the Arabs in a fit of chagrin cancelled all amateur licences



This prompted me to apply for a posting to Malta which was granted, and the application went in again. This took about three months to be approved, mainly due to the file lying on Police Headquarters desk for about two months. Everyone gets a say in whether a licence should be issued or not. The hardest regulation to get around is the one that says "It is illegal to possess transmitting equipment, or any kind of component, unless in possession of a licence" and then goes on to say "A licence will only be issued after the station has been inspected". If you don't believe it, ask Edgar Wagner! (G3BID - Ed.)

The first equipment was a home-brew 50 Watts AM and CW transmitter. Very unstable with chirp and drift, but everyone knew when Harry was on. The kinder Stateside stations said it was "distinctive"! One even went so far as to say that I should, on no account, correct it, as the boys wouldn't be able to recognise me on the air. This later became 100 watts by the addition of another 807. Twice the power and twice the chirp/drift - or does it follow square law? I made many contacts with this rig, mainly on CW, and met many friends both old and new. I entered a few Contests and chased DX, but after finding my way into the Royal Signals DX Net, this became my main interest. My first job nowadays, after switching on, is to look for Ray (Sharjah), Harry (Dekhelia) or Bert (Liverpool). I usually find them and quite a few others besides.

Due to the good offices of Maurice Caplan (VS6AA - Ed.) I am now the proud possessor of a fine Yaesu-Musen FT-DX 400. That's our Maurice - and another story!

So there we are, twenty-five years between first interest and first licence this must be something of a record.

I was going to send some photos, but with me sitting in the chair, one cannot see the equipment, and without me there, the proof is missing, so what the H---!.

(Besides putting 9H1 on the DX bands, Harry has checked into the 80 Metre Net and done a FB job with Society recruiting on the Island. One of our newer members, introduced by Harry, is 9H1BB, and Harry kindly sent along a "pen-picture" of Law which is reproduced below. Tnx, Harry - Ed.)

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#### OUR MAN IN MALTA (PERMANENTLY) or 9H1BB

by 9H1BE.

Lawrence Smith, 9H1BB, "Doreen", New Street off Ganu Street, Birkirkara, Malta GC. Age 52 years young. Lawrence served with the Irish Fusiliers from September 1935 to November 1944. He took his discharge in Malta and married a local girl. He found immediate employment with the R.A.S.C. as a fitter and was later taken over by R.E.M.E.. He worked with these two Units from 1944 to 1952 when he was transferred to Comcan Signal Squadron and carried on with, them, through their change to D.C.N., and was then transferred to his present employment as Foreman Fitter with the local R.E.M.E. Workshops. He is an extremely good motor mechanic, as can be gathered, and finds time to run his own business in the evenings. Needless to say, there is a waiting list for his services, and even I cannot get an appointment.

Unfortunately, Lawrence lost his wife in 1965, leaving him with a teenage son and daughter to bring up, and a very fine job he makes of it. Even so, he found time hanging on his hands a bit, and to help him get over the loneliness, he started tuning over the bands. He discovered, with amazement, that he could receive many foreign stations, at great distances. This was his introduction to radio, and when he heard the queer jargon on the amateur bands, he took steps to find out what it was all about. He joined the local club and started self-tuition in radio. He passed his RAE and with some encouragement and tuition from an amateur friend (9H1AQ), he also passed the CW test, and obtained the call 9H1BB.



He has served on the committees of both local Clubs for some years and is a confirmed stirrer. He believes in giving things a stir and seeing what comes up. He mainly looks after all those members who are not yet amateurs, i.e. SWLs, Tape enthusiasts, etc., and organises contests to keep their interest.

Lawrence has no plans for leaving Malta, so it looks as if we may still have a member here even after run-down. His application has gone in and is under consideration, so we are keeping our fingers crossed. (Uncross 'em, Law can now put RSARS 171 on his QSLs and we are certainly happy to have him as a member - Ed.).

Lawrence (Law) is also something of a magpie, and no piece of radio junk is ever discarded. His garage is stocked with transformers, chassis, etc. With the component situation what it is in Malta, who can blame him?

The main station is still a B2 spy set on which Law has worked the world. He also has an Elizabethan, which sounds like a buzz saw with laryngitis. He has great hopes of talking either 9H1AL or 9H1BH into selling their spare SSB transmitters at some ridiculous price. If he succeeds. Look out for CW on 7, 14 and 21 mainly evenings or nights, but possibly earlier on weekends.

Law has an easy to read fist, clear, precise and never more than about 14 w.p.m.

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### THE SIGNALLERS JOURNEY INTO THE WILDERNESS

(The following, which has been detached from its accompanying letter and does not contain the authors name, will, no doubt, bring back immediate memories to our older readers. Younger readers will probably recognise reference to such great personalities as the Chief Instructor (C.I.), Assistant Instructor (A.I.) and also to the Auxiliary Territorial Service (A.T.S.) that great forerunner of the Womens Royal Army Corps.)

And it came to pass that in the days of Hitler the Worst when all men did make war one with another, there dwelt in the wilderness a great chief called SEE EYE, and he did call unto himself all his disciples from all corners of the land, and they journeyed forth carrying upon their backs large bundles, and in their hands many strange things. Yea, verily, they were as beasts of burden. They did all say unto themselves "I must away to my masters bidding, and great was their rejoicing when they arrived at their masters dwelling.

They did cast off their burdens and lie down in the house of SEE EYE, their Great Chief.

And it came to pass that on the morrow, having rested awhile, they were called together and did sit together and under one roof, and a lesser chief SEE ESS EMM did speak unto them in a loud voice giving them the commandments of the Great Chief SEE EYE.

"Thou shalt not trespass upon thy neighbours garden"

"Thou shalt not wander abroad with the woman AY TEE ESS"

"Thou shalt not walk with thy hands buried in thy garments"

"Thou shalt put a dark paint upon thy sandals and they shall not "shine"

And after they had harkened to the Commandments of SEE EYE, they were divided among themselves and did go unto lesser chiefs, each of which is called by the name ACK EYE, and ACK EYE having about one score men did talk many words of wisdom. And he did take them up on the mountainside, and, verily I say unto you they were astonished, for, Lo and Behold, a light did flicker from afar off. they did crowd together and each man spoke in whispers to his neighbour, and one would say "BEE", and another "DEE", and one would say "TEE" and another "EE" and there was great confusion. They wondered what manner of light is this that can speak words and they were so afraid.

These men from afar were then taken under the same roof under which the chief SEE ESS EMM had spoken, and they did hear a loud noise as of many bees, and some did quake and tremble, saying one to another, "What meaneth this?". Others did smile and did say "It is the writing on the wall" and they translated from the ether and did scribe on parchment as white as snow.

And it came to pass after two nights and two days that these men did gather unto their ACK EYE and did go out into the cold taking with them branches of trees and pieces raiment, lest they be working evil.

And it also came to pass that after five nights and five days they took refuge in a quiet place, carrying parchment and the means to make signs and they did become scribes, filling many pages, and so they did until the cock did crow and then they said one to the other "Only one and fifty days to go" and there was great jubilation.

(Was training in Heliograph and Wireless etc., so hard? - Ed.)

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#### QUIK-QUIZ ANSWERS.

1. British Honduras, Guatemala, El Salvador, Honduras, Nicaragua, Coata.Rica, Panama. Also the Panama Canal Zone.
2. Cuba, Haiti, Dominican Republic, Puerto Rico, Dominica.
- 3.b) Mexico.
4. NW - SE.
5. The Dead Sea (Jordan-Israel). 1,286 Feet BELOW Sea Level.

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#### FREQUENCY PREDICTIONS - MAY, JUNE, JULY 1970

Thanks to the good offices of G5YN (RSARS 040) the Society now receives a copy of Bulletin of Predictions of Radio Propagation Conditions. This booklet contains approximately 180 pages and computation of predictions for a given path can be a little complex. This, coupled with the fact that the predictions are for single-hop paths of 4,000 Km maximum, means that reproduction in "Mercury" is not of great benefit. However, it would appear that the following paths are likely :

London - New York. 28 Mhz - Unlikely. 21 Mhz - No regular path. 14 Mhz - Path in between 0930Z and 0100Z, 7 Mhz - Path possibly in between 2130z and 0800Z.

London - Cyprus. 28 Mhz - Unlikely. 21 Mhz - Path in between 0800Z and 1730Z, 14 Mhz - In all day except perhaps from 0030Z and 0230Z, 7 Mhz - In between 1700Z and 0300Z.

It is hoped to obtain from the Joint Radio Propagation Bureau a more accurate multi-hop path prediction for selected paths in which the Society would be interested.

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#### OTHER INTEREST SECTION.

Apparently, about 692 of our members have no other hobby than Amateur Radio as, apart from the two members mentioned in the last issue, no-one has written to say what they do with their hard-earned cash when the bands are dead!

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the axis of the graph, mark up the horizontal axis for the required frequency range and the vertical for the VSWR range envisaged, say from 1:1 to 4:1.

NOTE. "On the air" tests follow. Precede and conclude each test transmission with the station call-sign.

Key the Tx and observe the reflected power indication, adjust the bridge sensitivity as required, to give f.s.d. in the forward direction. Note the reflected power indication on the graph. Repeat this procedure at spot frequencies throughout the band.

Derive the curve from the values obtained. The VSWR for any particular frequency can then be obtained by drawing X and Y co-ordinates on the completed graph.

Take the point of minimum VSWR. This indicates the resonant frequency of the dipole. It may be shifted lower in frequency by slightly lengthening the dipole or conversely, higher, by judiciously pruning it. A state is finally achieved where the point of minimum VSWR is coincident with the required operating frequency. The bridge may then be taken out of circuit and the co-ax feedline connected direct to the Tx.

The graph is retained for reference purposes as it provides a useful means of determining whether the dipole resonance is subsequently modified due to the erection of other nearby aerials or by modification of the dipole configuration itself.

#### 4. Configuration.

Few amateurs have access to sufficient space to erect l.f. aerials in the clear. Consequently dipoles are often bent and compressed to suit individual restricted locations.

The amount of signal radiated from the dipole is proportional to the r.f. current flowing in the antenna. As most r.f. current flows around the dipole feed point, this section must be erected as high and as clear of surrounding objects as possible. The ends of the dipole arms contribute little to the total radiated signal and consequently any folding, compression or bending of the antenna should take place in these areas. Considerable r.f. voltage is however present and care should be exercised to prevent a leakage path developing between the dipole ends and earth. At least 2 ft. separation between the dipole ends and other surrounding objects should be achieved. By using the Inverted 'V' configuration and attaching the dipole feed point to a chimney-mounted or roof apex mounted pole a full size 80 Metre dipole can be accommodated in 80/90 feet whilst maintaining the dipole elements straight and unbent.

Trap dipoles like the W3DZZ or its half size version, the K2GU, permit even greater savings in space with the added facility of multi-band working. Details of both these antennas may be found in the ARRL ANTENNA HANDBOOK. Home construction of the traps has been carried out by the writer, using a g.d.o. in conjunction with an accurately calibrated receiver. No problems were encountered and good results from the completed antennas followed.

Folded dipoles are quite useful devices where a wide bandwidth is required, for 80 or 10 for instance. These can be constructed quite cheaply and simply, using 300 Ohms ribbon for the dipole elements and feeder. To effect the 4:1 step-down from 300 ohms to 75 ohms and to transform from balanced to unbalanced, the use of a bifilar wound, air-spaced balun is recommended. HEATHKIT market a suitable kit and this has been used by the writer for this purpose. The balun is broadband from 3 - 30 Mhz, therefore once the folded dipole has been resonated; no further tuning is required.

Folded dipoles are essentially single-band devices although a 40 Metre folded dipole will radiate efficiently on its third harmonic, 15 Metres.

Insulators can be constructed using sheet perspex or paxolin; these will prove quite light and durable in use. One practical problem encountered with 300 Ohms ribbon is in maintaining it free

from distortion due to twisting along its length. Before raising the antenna, therefore, ensure that all kinks and twists have been removed, as it will prove difficult to correct matters once the antenna has been raised.

Finally, mention is made of the G5RV dipole, along with its half size version. Information on the construction of this aerial is to be found in several RSGB publications. However, the version used by the writer may be of interest. This half-size version performs very well especially on 10 and 20 Metres.

The 17 ft. stub is constructed of 18 s.w.g. open wire feeder, spaced 4 inches apart and separated by spreaders cut from heavy duty co-ax inner insulation, the inner conductor is first removed. 16 ft. of 300 Ohms ribbon is attached to the stub and the antenna is tuned by a KW E-ZEE match or any suitable A.T.U.

All the dipole types mentioned can be made to exhibit directivity by sloping them at an angle of around 45° towards the desired direction. H.F. band dipoles may be mounted vertically, although, in practice, it is often difficult to bring the feeder away at right angles in the recommended fashion.

#### 6. Conclusion.

These notes, though not comprehensive, do summarise to some extent one amateur's practical field work on dipoles. As such it is hoped that they will provide useful comparisons to some and encouragement to others engaged in similar activities.

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#### DID YOU SERVE IN INDIA?

In the current issue of "The Wire" appears the following :  
Mr Geoffrey Wakefield F.R.H.S. an ex-member of the Corps writes from Dorado Beach Puerto Rico, hoping to renew friendships made during his service days. Mr Wakefield joined the Corps in October 1936, and was demobilised in January 1946. He served in England with 'F' Troop, Mobile Division Signals at Tidworth, Kohat District Signals, Kohat, N.W.F.P., India, Waziristan District Signals, Razmak and Dehra Ishmail Khan, Eastern Command Signals, Meerut, Calcutta, Jalapahar, Dehra Dhun, Digboi, Ledo, Dacca, etc., etc. "I shall be delighted hear from anyone in the Corps" he says. Mr Wakefield is now Resort Horticulturist at the Dorado Beach Hotel, Dorado Beach, Puerto Rico.

(The above items are reprinted from the current issue of The Royal Signals Magazine "The Wire". Due acknowledgements are made. "The Wire" can be obtained from : "The Wire", Royal Signals Association, Cheltenham Terrace, Chelsea, London S.W.3. at 24/- for twelve months or 2/- for a single month (post free except Air Mail). Please mention R.S.A.R.S. This present issue contains (among other things) a photo of "some" (actually 88) members of the British element of 3rd Indian Divisional Signals, Meerut, India in 1932, a photo of No.1 Set on a pack-horse, and a "Mystery Photo" of a Cable Wagon "doing Its stuff" alongside a truck with post World War II markings - Ed.).

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#### DO YOU KNOW.....?

What happened to CSM "Jumbo" Charlton, Sgt "Tich" Metters, Sgt Tommy "Buller" Blades, Sgt "Chota" Chadwick, Sgt "Pussy" Catt, Sgt Red McGrath?. Any news would be appreciated by Tony G3WRY, 32 Russell Road, Liverpool 18.

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#### NEW TICKET DEPARTMENT.

Congratulations to C. Powlesland, RSARS 578, of 40 Ida Road, SKEGNESS, Lincs. on being licensed as G8CQZ.

### HELP!!!!

Once again your Editor asks the help of members in tracing members whose "Mercurys" have been returned marked "Gone Away", "Not Known", "Gone Abroad", etc. If you have any information on the whereabouts of these members please let your Editor know. Tnx.

No. 032	B.C. TERRILL		No known address.
No. 033	K.E. THRELFALL		No known address, believed now in VK.
No. 041	R. BAINS		No known address.
No. 079	A. PASSMORE	G3PNE	Last address: Birmingham University.
No. 154	I.C. STEVENSON		No known address.
No. 155	H.J. POWELL	G3RAQ	Last address: London, N.W.6.
No. 173	L.W. THOMPSON	G3VYZ	Now in GI. Address mislaid (!).
No. 189	D.A. EVANS	G3OUF	Last address: London, W.13.
No. 217	R. BRIGGS, BEM	G3UDX	No known address.
No. 223	M.A. ELLIS		No known address.
No. 246	P. FORD		No known address.
No. 309	D. STEVENSON	G3FPC	No known address.
No. 323	P.R. GOLLEDGE	G3EDW	Last address; Tiverton, Devon.
No. 363	J. MITCHELL	G3OKM	Last address: Chester-le-Street, Co. Durham.
No. 373	J.N. DUNNE	MP4TBM	Last address: P.O. Box 8, Sharjah, Trucial States.
No. 437	C. HALL	MP4TCR	Last address: Grenadier Guards, BFPO 64.
No. 487	? CARR		No known address.
No. 506	L.B. LAWBUY	G3WMZ	Believed gone away from Aldershot.
No. 567	G.W. WEARE	G3VVH	No known address.
No. 590	P. DOWDELL	G3YOB	Address awaited after posting.
No. 601	G. GAY	MP4TCW	Last address: 222 Signal Sqdn., BFPO 64.
No. 611	D. BEARE	G3UPT	Confirmation required of: Trinity Hall, Cambridge.
No. 638	J.D. MATHEWS	G3ENG	Last address: Banstead, Surrey.
No. 657	G. AUSTIN	G8CIA	Address incomplete. 38 Willow Crescent, ?????.

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For the record, the following membership numbers are Silent Keys, will not be re-issued. Please amend Membership Lists accordingly.

100, 195, 216, 237, 280, 376, 389, 401, 514, 546.

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### A MEMBER WRITES.

".....It is with pleasure that I forward to you my subscription for this current year. I put that first so that if your time is running out you can skip the rest of this letter. I just wanted to let you know how very much I look forward to receiving The Mercury with its excellent articles, both technical and humane, especially the various activities of the Society members all over the world.

I wonder how many of our members owe their way of life they enjoy today to the educational and technical training they received whilst being a member of the Royal Corps of Signals.

I know that I have often reflected that had fate dealt me differently I shouldn't hold the position I am in now, nor would I have to enjoy perhaps the greatest of hobbies - Amateur Radio.

Wishing you all the very best of health and luck for 1970, may this be a good year to you all...."

(Thank you, and your good wishes passed on to all members - Ed.).

## WELCOME - WELCOME - WELCOME

Once again, it is our pleasure to welcome the following new members to the Royal Signals Amateur Radio Society. NOTE - All members carry re-issued numbers in order to "close the ranks", make administration easier, and prevent a false impression of the overall size of the Society. Members are asked to amend, where necessary, any Membership Lists held. The total membership, as at 1st March 1970, is 676. Dates in brackets are the effective membership dates.

- 037 - JAMES D. CHISHOLM, G2CX, EAST PITS, PEN SELWOOD, NEAR WINCANTON, SOMERSET. If you haven't worked James as G2CX have a look in past log books for VS1CX or VS7CX. Apparently G5YN was on the same train as G2CX on the way to last years Exhibition, and coupled with a gentle push or two from G6LL the result was a membership application from G2CX. It's a new QTH for G2CX who was, therefore, not active at the time of the application. Between 1942 and 1945 Jim was Chief Instructor STS52, then OC (R. Sigs/SOE). 1945/6 saw service as Sig. Off. No. 1 Radio Sec. Co. Delhi, then No. 1 SCU Singapore and later OC Det 1 SCU Ceylon. From 1947 until 1949, G2CX was Signal Officer No. 1 SCU (TA).
- 062 - HAROLD P. TOWNHILL, G5XL, 62 MOORLAND AVENUE, LINCOLN. Harold says little on the back of his Application Form, just "I served in Royal Signals 1942-946 with Bill Windle (G8VG), Tom Beaumont (G6HB) and Bill Ironfield (G4GM) and many other of your members upon duties the nature of which you are no doubt already aware". Sure thing, Harold - welcome to the Society and, I am sure, a lot of old friends. (1st February 1970).
- 105 - WILLIAM B. MANSELL, G2CPM, 46 HEADEY ROAD, WOODLEY, READING, RG5 4JE. Bill was 2331670 and joined 2nd G.T. Training Battalion at Prestatyn in January 1940. He left England the following September to join 11th East African Div. Signals in Kenya. Took part in the East African campaign and stayed at Addis Abbaba for a while before going to Madagascar with 22nd East African Brigade Signals. Bill then says "..... Transferred to, or loaned to (I was never sure which) Intelligence for the purpose of establishing "Radio Diego" the Forces Broadcasting Station and afterwards was sent to Mauritius on a similar assignment. Came home in 1945 to Thirsk and soon seized the opportunity of getting out of that dump to join Army Broadcasting at War Office. Demobbed in May 1946.
- 114 - HOWARD A. MEDWAY, "KINGSWOOD", 16 CHEMIN DES MALLETES, O3-MONTLUCON, FRANCE. Our (only) Man in France - Howard is busy working for a British Company on the Continent. Known to some as 14143753, Howard trained at Catterick as a Radio Mechanic A III (anyone remember RM90 Course?) and then to the sunny Middle East to serve with 1 and 2 Egypt Command Signal Regiment where he was attached to the British Consulate in Alexandria. Howard served in the Corps from 21 March 1946 until 23 September 1948.
- 115 - BRIAN L. LONNON, G8CCE, 116 PINWOOD GREEN, IVERHEATH, IVER, BUCKS. Brian's application was received (with several others) on "ANNEX B to News Sheet No. 50" indicating that someone has done us a favour and reproduced the RSARS Application Form in the Cadet Force News Sheet. (Tnx - Ed.). Brian belongs to the 6th Slough Grammar School A.C.F. where, it appears, he has been quite successful. He has 4 years service, with Cert. 'A', Cert. 'T' (REME), he is NCO i/c Sigs., Platoon Sgt., Cadet Assistant Signals Instructor, and holds Royal Signals Classification. Having had three years at the job, other Cadet members should look out for Brian on the Schools Net under call-sign 25B.
- 117 - PETER E. T. TRETHEWEY A.M.I.E.D. 10 TILGATE WAY, TILGATE, CRAWLEY, SUSSEX. Peter, who has recently joined the R.S.G.B. as BRS 31625 aims to take the RAE



in the near future. Peters Service connections were, like many other members, with SCU, this time No. 1 where he completed National Service from May 1945 until January 1947. After demob he served with Diplomatic Wireless Service of the Foreign Office (originally H.M.G.C.C.) from January 1947 until August 1950. He then worked for Marconi Wireless Telegraph Company and was engaged on the design of telecommunications equipment for the Services. From October 1961 until the present time daily labours have been with M.E.L. Equipment Company Limited at Crawley where he is at present engaged on Services equipment design. Good luck with the RAE, Peter, and welcome to RSARS.

- 168 - FREDERICK A. CARRUTHERS, VK2PF, 36 NIELSON STREET, LISMORE, NEW SOUTH WALES, 2480, AUSTRALIA. The back of VK3PF's application form makes interesting reading, both Military and Civil. Fred starts with a section marked "Australian Army Record". This reads "..... Service with Junior Cadets, Senior Cadets and Militia from 1917 until 1925. First appointment to Commissioned Rank as Officer of the Reserve Military Forces of the Commonwealth of Australia 2<sup>nd</sup> August 1940. Signals Officer with 17 Training Battalion - October 1940. Adjutant Eastern Command Signal School - January 1941. O.C. Wireless Section 12 L. of C. Signals - February 1942. S.O. Tech. on staff of

C.S.O. Eastern Command - April (?) 1942. Seconded as O.O. Sigs, A.D.O.S. Staff, L.H.Q. - March 1944. To Reserve - April 1945. 2 i/c Eastern Command Signals Squadron (C.M.F.) - 1949. To R. of O. - November 1949. The next section is headed "Civilian Career". This is equally interesting and reads ".....Appointed Junior Clerk, Department of Justice, N.S.W. - 22/4/24. Admitted Attorney, Solicitor and proctor of supreme Court of N.S.W. - 19/11/57. After serving in all grades of Petty Sessions, through Clerk of Petty Sessions and Chamber Magistrate, commissioned as Stipendiary Magistrate for the State of New South Wales, also Coroner for the State generally - 28/4/58. Acted as City Coroner for the City of Sydney and the surrounding Metropolitan Area from April 1959 until August 1959. Appointed as Stipendiary Magistrate for the District of Lismore with Courts in eleven towns on 21st September 1959. Retired from the Bench 21st November 1970. The final short paragraph is

headed "Amateur Activities". "..... Licensed March 1933. Active in Cowra, Sydney and Lismore. Vice President of the Wireless Institute of Australia (N.S.W. Division) 1939 for one year. A fine record, Fred, Military, Civil and Amateur. Welcome OM.

- 171 - LAWRENCE SMITH, 9HIBB, "DOREEN", NEW STREET, OFF GANU STREET, BIRKIRKARA, MALTA G.C. Law was introduced to the Society by 9HIBE, Harry. 9HIBB is now employed by the Services in Malta, and his Application shows that Law served with the Irish Fusiliers from September 1935 until November 1944. Then followed civilian service with RASC/REME until 1952 before transferring to similar service with Comcan Signal Squadron Malta which later became 235 Signal Squadron (DCN). This continued until last year when 9HIBB continued his civilian service with 53 Command Workshops REME. Harry puts us a little more "in the picture" elsewhere. Glad to have you with us, Law, and we'll all be looking for a QSO.

- 187 - JACK MILLIE, GW8MQ, BAYSHILL, 21 STEEL AVENUE, CARMARTHEN, SOUTH WALES. Introduced by the QSL Bureau Manager, Jack lists his Service connections very neatly on his form, as follows :-

September 1939	- May 1940 51st Highland Division Signals
June 1940	- February 1941 37th Ind. Inf. Bde. Signals.
Febr	
uary 1941	- August 1944 Aux. Units ( Special Duties) G.H.Q.
September 1944	- November 1945 16th T.M. Section 21 Army Group
Demobbed. November 1945	

Jack has also been over the other border and has held GM8MQ. Welcome, Jack

- 394 - MICHAEL L. KINNERSLY-TAYLOR, G3WTA, SEATON RYDE, TRANWELL WOODS, MORPETH, NORTHUMBERLAND. Another member of the C.C.F. Michael was a member of Durham School CCF and held the call-sign 52A. He has already appeared "in print" in a recent copy of "SWM" and no doubt, we will be hearing G3WTA on the bands. Welcome.
- 407 - GARY D. THOMAS, ZL2AZT, C/o N.Z.C.S.O., HMNZS IRIRANGI, WAIOURU, NEW ZEALAND. Gary served with the Royal N.Z. Corps of Signals from September 1959 until March 1968 during which time Gary served with the following Units: Sept 1959 - 1 Sqdn 1 Div Sig Regt., Jan 1960 - Central Districts Sig Tp., Jan 1961 to Aug 1963 - Transferred to an Infantry Battalion for overseas duties, Aug 1963 to March 1964 - 4 Inf Bde Gp Sig Sqn., March 1964 to July 1966 - 1 Inf Bde Gp Sig Sqn., July 1966 to March 1968 - School of Signals, March 1968 - Discharged. Gary's membership helps to increase our ZL membership and we would like to see a lot more ZLs on the list. Welcome, Gary, and hope to hook up with you before long.
- 413 - NORMAN POLAN, 9H1BX, 65 SPINOLA COURT, UPPER GARDENS, St. JULIANS, MALTA GC. Introduced to the Society by the efforts of Harry 9H1BE, Norman enlisted on 15th May 1939 and served with 49 Div, 228 Field Company RE, later (29/1/41) becoming a Radio Mechanic with RAOC, then a Radio Mechanic with REME. Demobbed on 16th January 1946. Served throughout the war, including overseas and was at Narvik. Treasurer of M.A.R.S. Runs a KW2000A and 14AVQ. Welcome.
- 466 - CARL, O. THOMSEN, GM3FSV, 82 BRIDGE STREET, DOLLAR, CLACKS, SCOTLAND. Carl doesn't say much on his application form but he does tell us that he is Officer commanding Royal Signals Troop of the Dollar Academy Combined Cadet Force. Don't know if you are active Carl, if so we will be looking for you on the 80 Metre Net. Welcome to the Society.
- 518 - ROBERT H. LEES, UDOR COTTAGE, MARKET DRAYTON, SALOP. Another C.C.F. member we welcome this time. Bob is with Adams Grammar School and operate call-sign 38A on the C.C.F. National Net. He also holds a Pass in Army Proficiency, Signals classification and Cadet Assistant Instructor in Signals.
- 523 - EDGAR C. AMON, ZL1ACL, 10 TETLEY STREET, MATAMATA, NEW ZEALAND Over to ZL again to say welcome to Eddie, a Life Member, who utilised a copy of the RSARS Membership Application form reproduced in "Break In". In an accompanying letter Eddie gives his service connection as "An ex-member 8th Brigade Signals R.N.Z. Sigs, Fiji later with 3 Div Signals 2 N.Z.E.F. Pacific Section from New Caledonia through to the Solomons. After the War I was a volunteer instructor with 1 Sqdn R.N.Z. Signals attached to 4 Medium Regt at Hamilton". Eddie is now a Councillor (for the third year) on N.Z.A.R.T. (Thanks for the offer of help, Eddie we would appreciate anything you can do as regards letting the ZL boys know that, if eligible, we would be most happy to have them as members - Ed.)
- 558 - VE3GNM (See last "Mercury")
- 560 - BERT LINGARD, G3IR, 101 CHESTER ROAD, POYNTON, NEAR STOCKPORT, CHESHIRE. Another ex-SCU member Bert served 4 1/2 years in Royal Signals from 1942 until 1946 with 2 years before and several years after part-time service with R.S.S. Bert held his first "AA" licence in 1925 with the call 2ABL, followed in 1936 with the call 2BPH. The full licence (With the present call G3IR) was obtained in 1938. Introduced by RSARS No. 11 (Tnx Bernard).

- 561 - CECIL GERRARD, G3YOS, 10 WALKERCROFT MEAD, CROXTED ROAD, LONDON S.E. 21. Introduced by G3WZQ we welcome G3YOS to membership. Cecil tells us little on the back of his form but does say that he was 2599645 L/Sgt C. Gerrard and that he served with Royal Signals from 6-10-41 until November 1946.
- 562 - G3TKX (See last "Mercury")
- 563 - LOUIS C. de la BERTAUCHE, G3RCO, "WESTLEIGH", FORE STREET, BEER, DEVON, EX12 3EQ. From Glorious Devon we welcome Louis who was introduced by Tony, G3WXX. With a Regimental Number a little earlier than Cecils (561), 2589257, Louis gives his Service connections as follows :
- "Joined Royal Signals mid September 1939. Trained as Operator W & L at Cavalry Barracks, Canterbury. Posted to Harpenden Herts/Queen Anne's Mansions, St. James Park, London on Radio Duties. Left for Catterick in 1942 on Draft to India. Service India and Burma until 1945. Returned via Air Trooping to Catterick and demobbed from there in 1946. Trade: Operator Special B1." (Also included in last "Mercury" - Ed).
- 579 - RUSSELL E. MORLEY, G3IZP, 29 SCOTTS AVENUE, BROMLEY, KENT. BR2 0LG. Russells Service connections read as follows. Royal Corps of Signals 1942 - 1947. Operator Special. 14212885. (Strange how service numbers were issued, Russell, I received 14124353 in 1946! - Ed). Units include No. 5 Operators Training Battalion, Special Operators Training Battalion, No. 5 HQ "Y" Group, No. 3 HQ "Y" Group, No. 1 Special Wireless Regiment (BAOR). Since 1951, G3IZP has been employed by the Ministries of Supply, Aviation and Technology on technical duties in connection with the inspection and quality control on contracts for communications equipment for use by H.M. Forces. Russell was introduced by RSARS 47, P.C.V. DOLAN, G3PCV.
- 587 - JONATHAN I. WALDEN, 53 LINDEN LEA, FINCHLEY, LONDON, N.2. Jon is a member of the Christ's College, Finchley, Contingent of the Combined Cadet Force which is Parachute Regiment affiliated. Jon is also a member of the RSGB as A 6437.
- 600 - THOMAS MINETT, G3VRK, 5 WHITEHALL ROAD, BIRMINGHAM, 21. Another introduction by Tony, G3WXX, Tom served in Royal Signals from 1939 until 1946 with 49th SM Div Sigs and then 12 EA Div Sigs as an Operator Wireless and Line and a Radio Technician. Tom hopes to be coming up with a VK call sometime in 1970.
- AFF3 2 SQUADRON, 3 HQ AND SIGNAL REGIMENT, CARTER BARRACKS, BULFORD GARRISON. WILTSHIRE. Under the guiding influence of Sgt. David Lamont, G3ZBX who has also held the calls G3WPV and G3YBP we welcome the Regimental Radio Club. No other details given so we have no idea of membership of the club. 388 - WILLIAM G. WESTERN, G3TDW, 72 BEDFORD ROAD, SANDY, BEDS. G3TDW, applied for membership on the small application form and just mentions three Units 11 Armd Div Sigs (1941), 10 Armd Div Sigs (1942) and 23 Armd Div Sigs (1944), sufficient to qualify William for Ordinary Membership of the Society. Hope "Mercury" arrived OK and glad to have you with us.
- AFF14 AMATEUR RADIO CLUB, C/O SIGNALS WING, JUNIOR TRADESMENS REGIMENT, DUNDONALD CAMP, TROON, AYRSHIRE, SCOTLAND. The Club has been members of the ACF Network for the last nine months and is also a member of the I.S.W.L. Ably looked after by Robin Meiklejohn (i/c Radio Hobby) we hope to be hearing lots from the members.

#### ROYAL SIGNALS AMATEUR RADIO SOCIETY RETIRED AND DISABLED INFORMATION OFFICER

A recent letter from Member No, 485 contained an interesting suggestion. It came from F. W. (Mac) McAllister of 11 Furze Field, West Wittering, Chichester, Sussex who is a member of the R.A.I.B.C. and Mac suggest that RSARS members who have any gear for disposal at prices that may be attractive to our retired and disabled members let him know at the above address. Similarly, any retired or disabled members who require gear, please send details. Mac has agreed to compile a register of "Wants" and "For Sale" and details will appear in "Mercury". This free service is designed to assist retired and disabled members and the help of all members is requested. Please bear in mind the following points :-

1. Do NOT send equipment to Mac - just the FULL details.
2. If writing to Mac for or with details, please enclose SAE,
3. Even if you do not have equipment for disposal but know someone who has, let Mac know, he may well have a waiting "customer" on the books.
4. Remember - the price is important and should be as low as possible.
5. Please assist our retired and disabled members by giving them first choice of any equipment you may have for disposal.

Mac, G3WNH, is hereby appointed RSARS RADIO!

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#### MEMBERSHIP DRIVE

Don't forget the Jubilee Year Membership Drive! Only 6 more members are now required (1<sup>st</sup> April) to fill the gaps left by members who did not renew their membership last year. Then we continue with number 702 onwards with the intention of making the 1,000 before the end of the year. Members are reminded that introducing 10 new members entitles them to 10/- credit towards Members Supplies or one years Annual Membership FREE!. Application forms are available from HQ for the asking. Stamp only please, envelopes not necessary. Please mark the form "Introduced by ....." and include your membership number or call-sign.

The present introduction situation is as follows :-

- 1 Introduction : 011, 016, 051, 106, 170, 173, 183, 242, 361, 400, 442, 499, 502, 506, 530, 605, 615, 630, 656, 689, AFF3.
- 2 Introduction : 016, 108, 340, 344, 352, 484, 469.
- 3 Introduction : 439.

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#### THANKS.

Bill. Member No. 624, of 68 Tomnahurich Street, Inverness would like to thank all members who have QSLd so promptly to his reports.. He now has over 50 confirmations, but has not yet found time to apply for his RSARS Award. However, he has gained the following :

Prince of Wales Award (First Class)  
Royal Burghs and Boroughs Award (First Class)  
Chapter 8 Class 1  
E.L.D.A. (First GM SWL)  
Robin Hood Award.

The last Award makes Bill a Merry Man, of course. Well done, Bill!

### IN" TRAY.

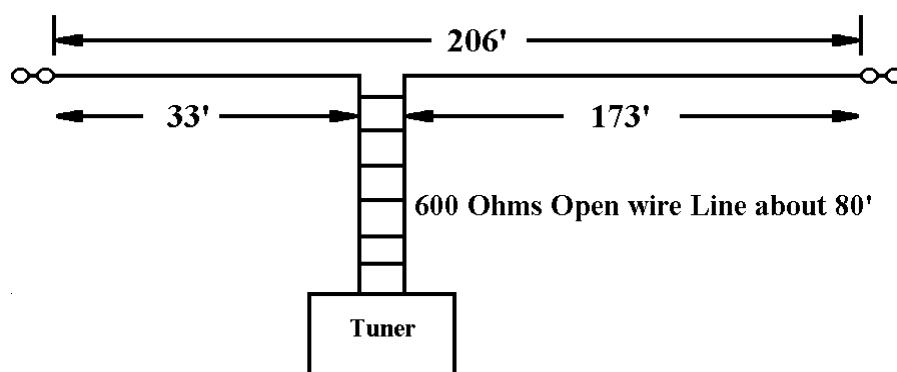
Lots and lots of letters in the In-tray and it is difficult to pick out any particular one as all are interesting and welcome. To mention but two - both from G3KYF, one of our ardent DX fans. The first one mentioned that Keith was now only looking for Zone 19 for WAZ. The second one arrived not too, long after saying that after hooking up with RA0ABV, who arranged a sked, he had QSO'd RA0CBN in Zone 19. The only problem now, of course, is getting the cards! (As common a problem as the common cold! - Ed.). Keith is interested in working CR9AK and suggests we try and get him on the 15 Metre Net. (Watsa, you VS6's how about getting the old Postmaster himself on one evening?). He also had a chat with 5N2AAF who, he tells us, is returning to U.K. in April. Keith is hoping to talk Mike into some RSARS DX-peditions to some of the rarer African countries. (Good idea. Any hope, Mike? - Ed.).

(Another letter from the bulging In-tray. This one, from T. J. Brooke, RSARS 98, "Pentire", Castleton, Cardiff, CF3 8UR, gives details of a Novel Aerial. Tnx Joe - Ed.)

Dear OM,

I am using a rather unusual aerial and wondered whether you would like some details for "Mercury".

The basic idea is for three half waves on 7 Mc/s to be fed at a current point. It also feeds at a current point on 21 Mc/s and at voltage points on 14 and 28 Mc/s. Funnily enough, it works well on 3.5 Mc/s still using the feeder in the proper manner, on 1.8 Mc/s it is tuned against earth using the wire connected to the 173' part of the top. Presumably a half-size version could work well on 7 Mc/s and higher using the feeder and tuned against earth on 3.5 and 1.8 Mc/s. Makes a change from the G5RV. A tuner is needed at the bottom end.



### MILITARY MUSIC MINDED?

The Royal Signals Band programme for 1970 shows that you can spend a pleasant time listening to the band at the following times/places this Jubilee Year.

23rd May - 6th June Eastbourne, 29th May - 31st May, 224 Signal Squadron at Loughborough, 3rd - 5th June, Blandford, 8th - 13th June at Catterick, 21st June Salisbury and Blandford Open Day, 2nd July at the Freedom of Richmond, 11th July to 1st August at the Royal Tournament, 2nd - 15th August as Touring Band at Eastbourne, 16th - 22nd August, St. James's Park, London, 30th August - 5th September at Folkestone, 10th September, Blandford High School, 20th September - 4th October as Touring Band again at Eastbourne, 26th September, 260 Signal Squadron, Shoeburyness, 23rd - 25th October at 13 Signal Group, Perth, and, finally, a Concert at Huddersfield on 28th October.

### AN ELECTRONIC KEY FOR EVERY CW OPERATOR. By Howard J. Sartori, K6COP.

(This article, by K6COP and originally appearing in the April 1964 issue of "CQ" shows a compact and easy to build electronic keyer. The article is reproduced in "Mercury" by kind permission of the Editor of "CQ" - Ed.).

Constructing this electronic keyer will be recognised by many readers as an interesting project, not only because of the diversified building techniques, but because this particular circuit lends itself well to familiarisation with the theory and operation of audio transistors.

All parts purchased new cost your author twenty-seven dollars. Now, the operator of this key may well wonder just what he will receive for twenty-seven dollars. First, the characters are self-completing; that is, when the paddle is pushed towards the dash side (left) and released immediately, the keyer will produce a dash of correct length as set by the SPEED control. Should a dot be sent immediately after a dash the keyer will not jam or in any way interfere with the dash as the keyer will automatically complete the dash and the correct space following it, before producing the dot and its subsequent space.

Then, too, the key is mechanically completely adjustable. However, most operators will find that this mechanical spacing is of minor importance in the operation of electronic keyers. Isolation between controls is quite good; isolation between the inside permanently set controls and the SPEED control is more than sufficient. In other words, once the DOT-DASH RATIO, BIAS and KEYING RELAY controls are adjusted, the SPEED control will prove to be quite independent and cause no change in any of the permanent adjustments. The SPEED control covers, approximately, the range from eight to sixty words per minute when the batteries are new, and slightly reduced range when the batteries are old.

It should be mentioned that no sidetone oscillator was incorporated since many operators have, in operation, monitoring circuits external for the key itself. Another reason for the exclusion was the relays, while rather quiet, offer sufficient monitoring after a little practice.

Stability of the unit is very good, the timing circuits will not be affected by the age of the batteries. Last, but not least, battery life is long inasmuch as the maximum current drawn during keyed conditions is only 10 milli-Amps and 0.3 milli-Amps during non-keyed conditions. In addition, bias batteries will exhibit shelf life. Finally, this key has no memory circuit (that is, a circuit that will allow the operator to stay a character ahead of actual transmission), and no such circuit is felt necessary. After all, the purpose of an electronic keyer is not to approach Teletype but to transmit perfectly formed letters which comprise characters and spaces. Thus, this electronic keyer offers all that a CW operator would consider basic to perfect CW transmission with a minimum of effort.

### THEORY OF OPERATION.

Basically the electronic keyer consists of an R-C timing circuit controlling the collector current of a transistor. Although this function ideally calls for a switching transistor, a high current p.n.p. audio transistor works very well and is much less expensive.

The basic circuit is shown in Fig. 1. When the key is open the base-emitter voltage is almost zero and little or no current flows in the collector circuit. Capacitor C1 is charged to the level of B1. When the key is closed C1 discharges and the negative end of B1 is connected directly to the Base placing the Base at the collector voltage. Transistor Q1 is heavily forward biased and the collector current pulls relay K1 in. This opens the key circuit and C1 begins to charge; the charge current through R1 causes a voltage drop that maintains the negative forward bias. When the charging current of C1 drops too low, the collector current of Q1 reduces and K1 drops out. This permits the contacts of K1 to close the key circuit and, if the paddle key is still closed, the circuit will repeat the character.

The duration of the character is determined by the time constant of R1-C1.

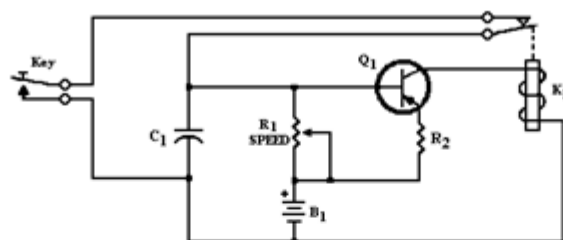
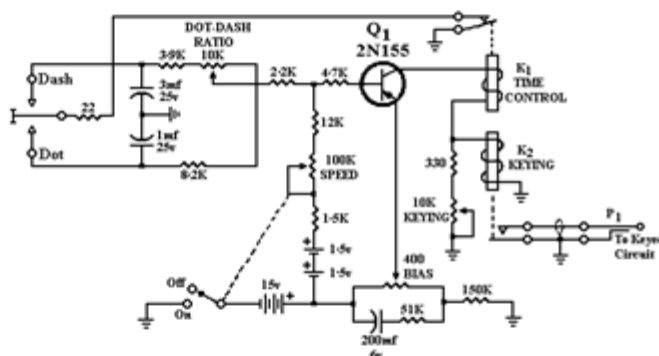


Fig. 1.- The simplified timing circuit used in the keyer shown above and explained in the text

The final circuit, shown in Fig. 2 is obviously more sophisticated but basically the same. The addition of the 3 Volts bias in the final circuit places Q1 well into cut-off during the unkeyed state improving battery life. Also there are two R-C time constant circuits one for dots and one for dashes each selected, in turn, by the paddle type key. The keying relay K2 and timing relay K1 are in series and thus trigger together. Relay K2 does not affect the timing and thus was not discussed or shown in Fig. 1.

Fig. 2.- The complete keyer uses a single audio power amplifier type transistor. All transistors are  $\frac{1}{2}$  watt 10% and all capacitors are in mf. The two relays are Potter Brumfield RS5D, 6 v.d.c.s.p.d.t. 335 ohms. All the pots have linear tapers.



## BATTERIES.

The two bias batteries are ordinary pen-lite cells placed in series. The holder used is a Philmore BH-60 (Any suitable holder should be satisfactory). These batteries should exhibit shelf life. The collector batteries used were a pair of Burgess Y-10's. These are 15 Volts each and in parallel provide a long life span. However, batteries in parallel sometimes prove troublesome if the voltage of one should fall below that of the other. This problem is overcome by using two heavier batteries Burgess 2N6's, 9 Volts each in series. These are comparatively heavy transistor batteries. Being somewhat larger than the Y-10's you will have to juggle parts a bit more to fit them in the ease.

If the 18 volts battery combination is used rather than the 15 Volts unit, omit the 1.5K resistor in series with the SPEED control.

## CONSTRUCTION.

The entire key and keyer is built into an LMB box (No. 141) that is 6 x 4 x 3 inches. (It would appear that layout is not too critical and, generally speaking, any suitable box would prove satisfactory - Ed.). The paddle key and bias batteries are placed in one half of the box and the other half contains the keyer circuit. The transistor and adjustment controls are mounted on a sub-chassis.



The transistor is mounted on a piece of insulating material  $2\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8}$  inches. Two pieces of aluminium  $1\frac{1}{2} \times \frac{1}{2}$  inches are placed under each end of the transistor to act as a heat sink. Since the case is the collector, connection can be made to either mounting screw. This entire assembly is then mounted on the sub-chassis using two long screws. BE SURE THAT THE TRANSISTOR CASE AND THE ALUMINIUM HEAT SINK DO NOT TOUCH THE CHASSIS.

Fig.3 - Key assembly details are shown on the right. The key is mounted in the chassis cover. Also shown are the measurements for the paddle.

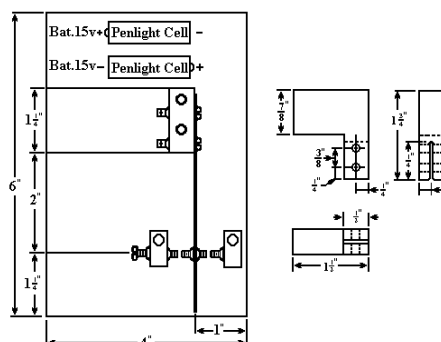


Fig. 3 shows the layout and measurements of the paddle key. The keyer lever is a hacksaw blade  $4\frac{1}{3}$  inches long. The tension of this blade can be adjusted by coating it with a small amount of solder until it is satisfactory. The contact on the blade is a  $\frac{3}{4}$  inch screw with the head removed and mounted with two nuts as shown.

The mounting blocks can be made of wood or phenolic. Just about any workable insulating material will do the trick. Be sure to align the dot and dash contacts with the contact arm. Washers can be used to raise the fixed blocks for proper alignment.

#### ALIGNMENT.

Alignment of your new electronic keyer should be very simple. A quick check can be made to check the accuracy of your wiring by connecting a milliammeter across the ON-OFF terminals with the SPEED control turned OFF. Less than 1mA should flow during non-keyed conditions. When the capacitor across the BIAS pot. Becomes charged and the circuit becomes stabilised, the current should be about 0.3 mA. This capacitor can be charged to correct value, initially, (assuming you have wired the polarity correctly) by turning the SPEED control ON and OFF several times. Now, when the keyer is properly adjusted, the meter will average 10.5 mAs on dashes and 8.5 mAs on dots. Turn the SPEED control to minimum resistance (maximum speed) KEYING RELAY and BIAS controls to maximum resistance and then key dots. Now, turn BIAS counterclockwise until dots are properly formed. Then turn BIAS further until dots are slowed to a smooth rate (this position is about 100 Ohms from ground). By adjusting the KEYING RELAY (actually the weight of the characters) the definition of the dots can be improved. However, do not put the adjustment near the critical point, but about a quarter of a turn from it so that when the batteries drain, no further adjustment need be made. After alignment of the DOT-DASH RATIO so that a dash is about three times as long as a dot (For "perfect" morse a dash must be exactly three times as long as a dot - Ed.) the electronic keyer is completed. Correct operation will result until the collector batteries are drained to about 10½ Volts under load. Many hours of pleasant telegraphy transmission will pass before the electronic keyer needs any attention by way of replacing the batteries.

The story of this electronic keyer would not be complete without grateful acknowledgement of K6YVZ, Ken Bensons splendid pictorial contribution. (Unfortunately, it is impossible to reproduce the original photos or drawings but a copy of the circuits and the keyer are included - Ed.).

### R.S.A.R.S. QSL BUREAU

The RSARS QSL, Bureau operates for the benefit of all fully paid up members of the Society and is intended for the speedy exchange of QSLs and SWL reports between members. Members can assist G3HSE in the running of this FREE service by bearing the following points in mind :-

- a) Even if you operate only occasionally, why not drop a couple of S.A.E. to Dave NOW. If there are no cards for you in the Bureau, Dave will be quite happy to hang on to the envelopes until the cards come in.
- b) If you operate regularly, why not drop a dozen or so S.A.E. to Dave NOW. If there are cards waiting for you, Dave will be quite happy to send them on to you.
- c) If you operate occasionally or regularly and there are cards waiting for you at the Bureau, and no envelopes, Dave will not be very happy.
- d) Please mark your envelopes "1", "2", "3", "4", "LAST" etc.. This will remind you when more envelopes are due.
- e) Please ensure that envelopes are of sufficient size (slightly larger than Post Card size) and remember that 4d stamps are usually sufficient.
- f) If you write to Dave with a query, please enclose a S.A.E.. If you talk to him on the land-line and want him to ring you back, please accept the charge. The Bureau costs the Society little, thanks to Daves generosity and hard work.
- g) If you do not want cards, please drop a line to Dave giving him authority to destroy any cards held for you. Storage space is limited!
- h) Please do not include non-member cards in batches you send to the Bureau. We have no facilities for forwarding overseas non-member or inland non-member cards

A recent check showed cards for the following call-signs held in the Bureau without means of despatch, i.e. NO ENVELOPES!! Please assist the Bureau Manager by sending along envelopes (4d stamp) as soon as possible.

G2NJ	- 492	G3INA	- 375	G3TTH	- 353	DL5ZC	- 311
G2QB	- 397	G3IRR	- 571	G3UJW	- 422	DL5ZU	- 378
G2TT	- 291	G3IUD	- 553	G3VLL	- ?	MP4BEU	- ?
G2UZ	- 464	G3KPQ	- Ex 099	G3VYT	- 432	MP4BHT	- 404
G2BTO	- 374	G3LAT	- 283	G3VYZ	- 327	MP4TCV	- 447
G2CKQ	- 568	G3LNS	- 483	G3VZO	- ?	MP4TCX	- 532
G2FAS	- 308	G3LOV	- 191	G3WCP	- 555	VE8RCS	- ?
G2FYT	- 478	G3LUN	- AFF24	G3YBT	- 123	WA6CEB	- 557
G3AJP	- 458	G3MCG	- 276	G3YBO	- 386	ZB2A	- ?
G3AOJ	- ?	G3MVT	- 636	GI3IWD	- 082	ZB2BC	- 495
G3BWV	- 684	G3NQT	- 428	GI5DX	- 288	ZC4HF	- ?
G3DSS	- 003	G3OFV	- 031	GM3TDS	- 337	ZC4IM	- 435
G3FTV	- 367	G3ONU	- 076	GW3POD	- 451	ZC4LS	- ?
G3FTX	- ?	G3PGM	- 027	GW3SVY	- 285	5N2AAF	- 139
G3GLQ	- 239	G3POY	- 534	DL2ZN	- ?	5Z4LS	- 293
G3GVV	- 104	G3PYN	- 569	DL5XN	- 217		
G3HCM	- 016	G3RKD	- 438	DL5YQ	- AFF6		
G3HZP	- 257	G3RKN	- 588	DL5YX	- 547		

Please forward envelopes to : R.S.A.R.S. QSL BUREAU, 78 BROCKLEHURST STREET, NEW CROSS, LONDON, S.E.14.

## THE ROYAL SIGNALS 50<sup>TH</sup> ANNIVERSARY CELEBRATIONS 1970

Celebrations to commemorate the 50th Anniversary will be held at Salisbury and Blandford on Sunday 21<sup>st</sup> June 1970. Programme of events :-

11 : 15 a.m. A Service of Thanksgiving and Rededication in Salisbury Cathedral. (Dress for serving members will be Service Dress, No. 1 Dress, Hat, Medals, Sam Browne as appropriate and gloves for Officers).

12 : 30 p.m. March Past in Salisbury of Old Comrades and Serving Contingents.

2 : 30 p.m. Open Day at the School of Signals, including a pageant on the theme "A Hundred Years of Signalling".

5:15 p.m. Retreat.

(Lunch and Tea will be available at Blandford on repayment)

All members of the Corps, serving or retired, and their families are cordially invited to take part in the celebrations, and it is hoped that as many as possible will attend.

Regular and TAVR members of the Corps should apply through their Units or Headquarters if they wish to attend. Retired members of the Corps should apply through the General Secretary of THE ROYAL SIGNALS ASSOCIATION, Cheltenham Terrace, Chelsea, London, S.W.3. (Telephone : 01-730-4129) as should members of The Royal Signals Association who do not belong to branches. Members who belong to branches should apply through their branch secretaries. Retired members, including Association members, are asked to make every effort to submit provisional attendance figures as soon as possible to assist in the planning of administrative arrangements.

Jubilee celebrations are also being held in Scotland, at Perth, on the weekend 24/25th October 1970. The organisers are anxious to obtain the names and addresses of all Signals and R.E. Signals who live in Scotland or have connections with Signals in Scotland. Please write to R.H.Q., 32nd (Scottish) Signal Regiment (V), 21 Jardine Street, Glasgow, N.W. (Tel. 041-339-8401) by whom fuller details will be notified later.

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### DONATIONS.

Several donations to the Society have recently been received and our thanks are due to the many people including G3XSN, G3AKF and an Overseas member who wishes to remain anonymous. One of these donations, which amounted to well over £40-0-0 has been used to purchase a small addressing machine which, it is hoped, will be used to address this copy "Mercury", No doubt you have destroyed the wrapper by now, but if you can remember to check the next one for any errors it would be appreciated if you could let HQ know.

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### JUST MANAGED TO SQUEEZE IT IN THE BOTTOM OF THE LAST PAGE SECTION

Reference the request by G3WRY for information (see a few pages back) of "Jumbo" Charlton. Page 128 of the current "Wire" "says..... and ex-Rats of '45 vintage cannot fail to remember "Jumbo" Charlton, now with the Post Office Stores Branch in Chester, and doyen of the local branch of the Association....."

(Same one Tony??)

ROYAL SIGNALS AMATEUR RADIO SOCIETY  
APPLICATION FOR MEMBERSHIP

I wish to apply for membership of the Royal Signals Amateur Radio Society, and, if elected, agree to abide by the Rules of the Society as published and/or amended. I understand that, if elected as an Annual Member, Membership fees are payable on joining and thereafter on the 1st January each year, except in the case of members joining on or after 1st September when Annual Membership is free for the remainder of the current year. I also understand that current membership fees are as follows :-

Annual Membership : 10/- per Annum

Life Membership : £5-0-0

Club Affiliation : 10/- per Annum or £5-0-0 Life Affiliation

I enclose CHEQUE/MONEY ORDER/POSTAL ORDER/CASH\* (Cheques and Orders crossed and made payable to "The Royal Signals Amateur Radio Society" and cash Registered) to the value of £ - - ., in respect of ANNUAL/ LIFE\* Membership.

The Society reserves the right to publish details of all members unless any member expressly wishes otherwise.

I DO/DONOT\* object to my membership details etc., being published by the Society.

(Failure to delete will be taken as the applicant having NO OBJECTION).

\*\*\*\*\*  
PLEASE GIVE DETAILS OF YOUR SERVICE/QUALIFYING CONNECTIONS ON THE  
REVERSE OF THIS FORM  
\*\*\*\*\*

Rank (if any): Surname : Christian Name(s) :

Call-sign or SWL No. : Other calls held :

Address for correspondence :

Date : Signature : \_\_\_\_\_  
(\* = delete where inapplicable)

\*\*\*\*\*  
Membership if approved, becomes effective from the 1<sup>st</sup> of the month in which application is made.  
When completed, please return this form, with membership fee, to :-

GENERAL SECRETARY ROYAL SIGNALS AMATEUR RADIO SOCIETY, SCHOOL OF  
SIGNALS, BLANDFORD CAMP, BLANDFORD FORUM, DORSET, ENGLAND.

\*\*\*\*\*  
For Office use : Recd. Chkd. Treas. Card. Mercury. No.  
\*\*\*\*\*

SUPPORT YOUR SOCIETY - THE ROYAL SIGNALS AMATEUR RADIO SOCIETY

ROYAL SIGNALS AMATEUR RADIO SOCIETY  
PAYMENT TO AUTHORS OF "MERCURY" ARTICLES

1. At a previous Annual General Meeting it was decided to pay members for articles written by them and published in "Mercury" at £1-0-0 per printed page.
2. Although your present Editor was not at that A.G.M., it is understood that this was intended to encourage more articles for "Mercury".
3. As your Editor has now been "in the chair" for a year, it was decided to clear the back-log of payments due to contributors. A check showed that articles published in the last four editions (including this (Spring) copy) will necessitate the payment of approximately £56-0-0, which, together with previous articles already paid for, will total something like £86-0-0 from Society funds.
4. Bearing in mind that our main source of income from Annual Membership fees is limited (most members are now Life Members, some having become Life Members for as little as £2-10-0) and the profit margin from Members Supplies is deliberately kept low, coupled with the ever-increasing postage bill, (£80 - £90 for "Mercury" alone) this article payment figure represents a serious drain on Society resources.
5. As the rule to pay authors was a properly proposed, seconded and voted suggestion at an A.G.M. it is felt that this can only be amended or cancelled at a future A.G.M. However, members opinions on this subject are solicited and all members are requested to fill in and return the pro-forma enclosed. The A.G.M. will be in August this year and a representation of members views would be appreciated in order to form a possible proposal to be included at the 1970 A.G.M.
6. It should be pointed out that NOT ONE contributor has asked for payment, but to comply with rule it is felt that payment should be made. Any member who has had an article published in the last four "Mercurys" (including this (Spring) edition) and does not require payment is asked to inform the Editor.
7. If payment continues, it is only fair to point out at this stage, that your "Mercury" will be smaller and will contain more "reprint" articles (for which no payment is made). This will ease the postage bill and thus, perhaps, show a small overall saving. If payment, is discontinued, "Mercury" should remain very much as now, providing that there is no increase in postage charges.

+++++  
To : The Editor, "Mercury"  
15, Valley Road,  
Blandford Camp,  
Blandford Forum,  
Dorset.

From : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Call-sign \_\_\_\_\_ No. \_\_\_\_\_

1. I consider that payment for "Mercury" articles should continue as at present.
2. I consider that payment for "Mercury" articles should be made at the rate of \_\_\_\_ per printed page.
3. I consider that payment should NOT be made for articles written by members for "Mercury".
4. I consider that an Annual ex-gratia payment should be made to the author of the article voted by members as "The Best article of the Year".
5. I DO NOT wish to be paid for any articles that I have submitted or will submit to "Mercury".

Please add any remarks on the back of this pro-forma.

Signature \_\_\_\_\_

# ROYAL SIGNALS AMATEUR RADIO SOCIETY

## SHAK-ADE No.1.

### COUNTIES LIST

COUNTY	QSO	QSL	COUNTY	QSO	QSL	COUNTY	QSO	QSL
(ENGLAND)								
BEDFORD	—	—	HEREFORD	—	—	OXFORD	—	—
BERKSHIRE	—	—	HERTFORD	—	—	RUTLAND	—	—
BUCKINGHAMSHIRE	—	—	HUNTINGDONSHIRE	—	—	SHROPSHIRE	—	—
CAMBRIDGESHIRE	—	—	KENT	—	—	SOMERSET	—	—
CHESHIRE	—	—	LANCASHIRE	—	—	STAFFORDSHIRE	—	—
CORNWALL	—	—	LEICESTERSHIRE	—	—	SUFFOLK	—	—
CUMBERLAND	—	—	LINCOLNSHIRE	—	—	SURRY	—	—
DERBYSHIRE	—	—	LONDON	—	—	SUSSEX	—	—
DEVON	—	—	MIDDLESEX	—	—	WARWICKSHIRE	—	—
DORSET	—	—	MONMOUTHSHIRE	—	—	WESTMORLAND	—	—
DURHAM	—	—	NORFOLK	—	—	WILTSHIRE	—	—
ESSEX	—	—	NORTHAMPTONSHIRE	—	—	WORCESTERSHIRE	—	—
GLOUCESTERSHIRE	—	—	NORTHUMBERLAND	—	—	YORKSHIRE	—	—
HAMPSHIRE	—	—	NOTTINGHAMSHIRE	—	—			
(SCOTLAND)								
ABERDEEN	—	—	EASTLOTHIAN	—	—	PEEBLES	—	—
ANGUS	—	—	FIFE	—	—	PERTH	—	—
ARGYLL	—	—	INVERNESS	—	—	RENFREW	—	—
AYR	—	—	KINCARDINE	—	—	ROSS & CROMARTY	—	—
BANFF	—	—	KINROSS	—	—	ROXBURGH	—	—
BERWICK	—	—	KIRKCUDBRIGHT	—	—	SELKIRK	—	—
BUTE	—	—	LANARK	—	—	SHETLAND	—	—
CAITHNESS	—	—	MIDLOTHIAN	—	—	STIRLING	—	—
CLACKMANNAN	—	—	MORAY	—	—	SUTHERLAND	—	—
DUMBARTON	—	—	NAIRN	—	—	WESTLOTHIAN	—	—
DUMFRIES	—	—	ORKNEY	—	—	WIGTOWN	—	—
(WALES)								
ANGLESEY	—	—	CAERNARVON	—	—	MERIONETH	—	—
BRECKNOCK	—	—	DENBIGH	—	—	MONTGOMERY	—	—
CARDIGAN	—	—	FLINT	—	—	PEMBROKE	—	—
CARMARTHEN	—	—	GLAMORGAN	—	—	RADNOR	—	—
(NORTHERN IRELAND)								
ANTRIM	—	—	DOWN	—	—	LONDONDERRY	—	—
ARMAGH	—	—	FERMANAGH	—	—	TYRONE	—	—
(CHANNEL ISLANDS)								
ALDERNEY	—	—	JERSEY	—	—	SARK	—	—
GUERNSEY	—	—						
(ISLE OF MAN)								

#### Counties QSL'd

001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023  
 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047  
 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070  
 071 072 073 074 075 076 077 078 079 080 081 082 083 084 085 086 087 088 089 090 091 092 093  
 094 095 096 097



# ROYAL SIGNALS AMATEUR RADIO SOCIETY

## SHAK-ADE No.2.

### THE UNITED STATES

STATE	CAPITAL	QSO	QSL	STATE	CAPITAL	QSO	QSL
ALABAMA	MONTGOMERY	—	—	MONTANA	HELENA	—	—
ALASKA	JUNEAU	—	—	NEBRASKA	LINCOLN	—	—
ARIZONA	PHOENIX	—	—	NEVADA	CARSON CITY	—	—
ARKANSAS	LITTLE ROCK	—	—	NEW HAMPSHIRE	CONCORD	—	—
CALIFORNIA	SACRAMENTO	—	—	NEW JERSEY	TRENTON	—	—
COLORADO	DENVER	—	—	NEW MEXICO	SANTA FE	—	—
CONNECTICUT	HARTFORD	—	—	NEW YORK	ALBANY	—	—
DELAWARE	DOVER	—	—	NORTH CAROLINA	RALEIGH	—	—
FLORIDA	TALLAHASSEE	—	—	NORTH DAKOTA	BISMARCK	—	—
GEORGIA	ATLANTA	—	—	OHIO	COLUMBUS	—	—
HAWAII	HONOLULU	—	—	OKLAHOMA	OKLAHOMA CITY	—	—
IDAHO	BOISE	—	—	OREGON	SALEM	—	—
ILLINOIS	SPRINGFIELD	—	—	PENNSYLVANIA	HARRISBURG	—	—
INDIANA	INDIANAPOLIS	—	—	RHODE ISLAND	PROVIDENCE	—	—
IOWA	DES MOINES	—	—	SOUTH CAROLINA	COLUMBIA	—	—
KANSAS	TOPEKA	—	—	SOUTH DAKOTA	PIERRE	—	—
KENTUCKY	FRANKFORT	—	—	TENNESSEE	NASHVILLE	—	—
LOUISIANA	BATON ROUGE	—	—	TEXAS	AUSTIN	—	—
MAINE	AUGUSTA	—	—	UTAH	SALT LAKE CITY	—	—
MARYLAND	ANNAPOLIS	—	—	VERMONT	MONTPELIER	—	—
MASSACHUSETTS	BOSTON	—	—	VIRGINIA	RICHMOND	—	—
MICHIGAN	LANSING	—	—	WASHINGTON	OLYMPIA	—	—
MINNESOTA	ST. PAUL	—	—	WEST VIRGINIA	CHARLESTON	—	—
MISSISSIPPI	JACKSON	—	—	WISCONSIN	MADISON	—	—
MISSOURI	JEFFERSON CITY	—	—	WYOMING	CHEYENNE	—	—

### STATES QSLd.

001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022  
 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 045 046 047 048  
 049 050

### CANADA

ALBERTA	EDMONTON	—	—	NOVA SCOTIA	HALIFAX	—	—
BRITISH COLUMBIA	VICTORIA	—	—	ONTARIO	TORONTO	—	—
MANITOBA	WINNIPEG	—	—	PRINCE EDWARD IS.	CHARLOTTETOWN	—	—
NEW BRUNSWICK	FREDERICTON	—	—	SASKATCHEWAN	REGINA	—	—
NEWFOUNDLAND	ST. JOHNS	—	—	YUKON TERR.	WHITEHORSE	—	—
NORTHWEST TERR.	OTTAWA	—	—				



# ROYAL SIGNALS AMATEUR RADIO SOCIETY

## +++++MEMBERS SUPPLIES+++++

- Members Notepaper - Approximately 6 1/2" x 8" good quality notepaper, headed "ROYAL SIGNALS AMATEUR RADIO SOCIETY, "Members Correspondence" and a figure of Mercury in Blue. Also space for Call-sign and Membership Number. New series but no increase in price.
- Members QSL cards - Again a new series, now containing an extra overprint on all cards, in gold "Royal Signals Jubilee Year - 1970". All cards have a "Jimmy" with "Royal Signals Amateur Radio Society" and "Member Station" on the front and printed details on the reverse permitting the card to be used as a) a QSL for a QSO b) a SWL report and c) to acknowledge a SWL report. This is the basic card which can be overprinted with your membership number, call-sign, name and address etc., in RED, BLACK, GREEN or BLUE at a small extra charge. Minimum order quantities : Basic = 100, Overprinted = 500.
- Members Lapel Badges - In light blue, dark blue and green, with "RSARS" initials in black. All brooch fitting. Plain at 2/6 or with your call-sign or membership number on an attached scroll - 7/6.
- RSARS Ties - Only a few of the original order left. In good quality Crimplene and Terylene, dark blue, with alternate angular rows of "Jimmy" and RSARS badge. Manufactured by a leading London Colour House at 25/6d Post Free. It is possible that an increase in price may be necessary on the next batch.
- Log Books - By N.W. Electronics. Good quality white paper, with over 100 pages. "Q" Codes, Reporting systems etc. 7/6 Post Free.

## ORDER FORM

To : General Secretary  
R.S.A.R.S.  
School of Signals,  
Blandford Camp,  
Blandford Forum,  
Dorset.

From : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date : \_\_\_\_/\_\_\_\_/19\_\_\_\_

Call-sign : \_\_\_\_\_

RSARS No. : \_\_\_\_\_

Please supply the following goods :-

			f	s	d
_____ Sheets of Members headed Notepaper	@ 8/4	per 100	_____	_____	_____
_____ Basic QSL cards	@ 10/-	per 100	_____	_____	_____
_____ Basic QSL cards	@ 37/6	per 500	_____	_____	_____
_____ Overprinted QSL cards in (colour) _____	@ 52/6	per 500	_____	_____	_____
_____ Plain lapel badge(s)	@ 2/6	each	_____	_____	_____
_____ Call-sign lapel badge(s) (_____)	@ 7/6	each	_____	_____	_____
_____ Society Tie(s)	@ 25/6	each	_____	_____	_____
_____ Log Book(s)	@ 7/6	each	_____	_____	_____
1970 Annual Subscription	@ 10/-		_____	_____	_____

Total : \_\_\_\_\_

All Post Free. Overprint colours RED, BLUE, BLACK, GREEN. I enclose Cheque/ Money Order/Postal Order/Cash to cover total cost. Please cross Cheques etc., and Postal Orders and Register cash.

Signature : \_\_\_\_\_