

BULLETIN

WIRELESS INSTITUTE OF AUSTRALIA

TASMANIA DIVISION

FEBRUARY 1975

President: R. Emmett VK7KK
Secretary: S. Fraser VK7OA G.P.O. Box 869J, HOBART, 7001
Treasurer: W. Carter VK7AK
Editor: B. Yeoman VK7ZBY, c/- Department of Transport,
Launceston Airport, 7250

NOTICE OF MEETINGS

Feb.: 5th Southern Branch, T.C.A.E., Mt. Nelson, 8 p.m.
11th North-West Branch, Lakins Hall, Ulverstone, 8 p.m.
14th Northern Branch, A.E.B. Rooms, High Street, 8 p.m.
15th Council Meeting, QTH of VK7PF, 181 Punchbowl Road,
Launceston, 2 p.m.

Mar.: 5th Southern Branch
11th North-West Branch
14th Northern Branch
15th Council meeting, venue to be announced.

EDITORIAL

The 5th of April will see another Annual General Meeting of the Wireless Institute of Australia, Tasmanian Division, and with it, concludes a year where, for the first time all branches were represented on Council. The 5th of April also marks the point where members can assess the worth of those elected to Council last year. Over the next month or so, you have the opportunity to decide whether or not you would like to do something towards the running of YOUR DIVISION, by standing for election to fill one of the seven Council positions, whether it be that you are dissatisfied with the previous year's effort, or that you feel by nominating for Council you would be doing your bit. Remember, this is your Division, and it will only operate efficiently if we have people at the top who have the Division's best interests at heart.

Have you paid your subs. yet? No? Then this month will be the last edition of "Amateur Radio" (and the Bulletin) which you will receive. Remember that by not renewing your subs. you are not supporting the very institution that gives you representation to the P.M.G.'s Department and other organisations such as Ansat, etc. So before you decide not to renew your subs., think first what you will be missing by not aligning yourself with this great institution called The Wireless Institute of Australia.

73, Brian VK7ZBY

MEETING NOTESSouthern Branch : December

The December meeting was held at the T.C.A.E. with the President, VK7SS, in the chair, and sixteen members present. Ian, VK7ZIF, introduced to the meeting the concept of equal representation on Council from each Branch. He proposed that three members from each Branch be elected to Council. The general feeling of the meeting was against the proposal specifically, because it was pointed out that equal representation could be had if everyone showed enough interest to want it that way.

The President then gave a report on the progress of the repeater - most of the technical problems are now sorted out, and only the application for licence remains to be prepared and presented.

Tom, VK7AL, spoke on a proposed Christmas barbecue - it was eventually decided to hold it at Tom's QTH on December 27th - a very enjoyable evening to be had I'm sure.

The subject of the Hamfest was raised, and it created a good deal of discussion. Colebrook seemed to gain favour as a venue. A committee consisting of Tom Allen, Allan Ruthven and Andrew Boon was formed to investigate. Dick, VK7ZDF, volunteered to act as technical adviser.

There will be no January meeting of this Branch, and it is hoped to organise a visit for the February meeting - more of this when details come to hand.

73s, Phil VK7SS

Northern Branch : December

The following is a report on the barbecue held in lieu of the normal December meeting.

The barbecue held at my QTH on 7th December, 1974, was very well attended by 22 members, their XYLs, YLs and harmonics and we must not forget those who brought their mother along. All in all, it was a great success which proves that no matter how much preparation and effort is put into a function, it takes the time of the members to attend to give it the success it becomes.

Many thanks to those who attended and I might add, we even had members of the North West Branch come over sixty miles to attend.

Games were set up for the children and names were drawn of which four children each received a Golden Book.

Kevin VK7ZAH's XYL got the womens' draw for a 1975 Australian Pictorial Diary and I forget who the OM was that received the other one. The ladies held a cake stall and Kevin will be able to supply the figures of how much was made from it as well as the raffle of the Biscuit Barrel donated by Gordon VK7GW. The sale of equipment also contributed to the function so thanks goes to those who put in the time to get it transported along to the function.

Once again, many thanks to all who turned up to make it as successful as it was and your continued support is always appreciated.

ZGJ and Phil's harmonic Charmaine gets my vote as "The Sandbox Queen". She enjoyed the sand internally as well as externally.

73, ED VK7HE

MEETING NOTES CONTD.Northern Branch : January

The January meeting of the Northern Branch took place at the A.E.B. Rooms, High Street, on January 10th, with Peter VK7PF, in the chair, with seventeen members and one visitor present. The visitor was Steve VK7OA, although Steve could hardly be called a visitor as I think he attended almost every meeting last year. The meeting attendance was lower than usual, but normal for this month, as quite a few members are away on holidays at this time of the year.

After the minutes were read and confirmed, the meeting discussed details related to the coming A.G.M. as presented by Ed, VK7HE.

Peter, VK7PF, gave some details on the activity of OSCARS 6 and 7. Peter stated that while activity through OSCAR 7 was low, the VK7 stations were in the fore. Peter also brought up two requests from Federal Executive; the first being a Darwin Relief Fund and the second being that a request had been made to the Division to find \$50-00 to help the W.I.A./Project Australis be represented at a meeting in Washington. On the first issue, the meeting felt that it should be left up to each individual member to donate what he could, and keep it on an individual basis rather than a Branch affair. The address for the donations appears elsewhere in this Bulletin.

On the second point, the meeting was unanimous that the Northern Branch donate \$50-00 as it considered imperative that the W.I.A. be represented at this meeting.

Wally VK7ZWX, Northern Branch Lecture Officer, gave the meeting details of a February talk; this talk is to be given by Ed Bovis, VK7ED, and is entitled "Early Seafaring Radio", so come along to the February meeting, and listen to what promises to be a fine talk on Radio as it was.

Ed, VK7HE, passed on to the meeting news that the Launceston City Council had approved the clubrooms proposal in principle, but Ed was still awaiting details from the City Council in the form of a letter.

The main event of the night was an auction of a surplus AT13 transmitter, which formerly resided at the Hobart Police Department. Ed, VK7HE, offered (!) to auction this transmitter which had been broken down into sizeable pieces to facilitate disposal. Some members took home goodies and others, well - best left unsaid. Anyway when all the amounts were totalled the net figure for the clubroom account was \$21-70.

The meeting finally closed at 2200 hrs. approx. for coffee, and the usual eyeball QSOs.

The much-awaited event of the Northern Branch finally occurred on January 4th, 1975, when Reg Emmett and Annette Wyatt were married at Ulverstone. I know I speak for all members and their families by wishing them every success and happiness in the future.

73, Brian VK7ZBY

North-West Branch : December/January

Since our last Bulletin, two meetings have gone, Christmas has gone, Darwin has gone, with the usual amateur emergency activity, the Bridge has gone, and to say the least, a year to remember. However, regardless of this, our Branch has gone from strength to strength.

December was a busy month for office-bearers, particularly with the aftermath of the Hamfest, and for the final meeting for 1974. It was reported that the Hamfest was very successful from all aspects. Our thanks go to all who attended as without them our efforts would have been in vain.

Our branch is working on a scheme to institute an instructional class in our area. This was discussed in greater detail at our January meeting, held on the 14th, and some definite action is to take place shortly to assess the interest in our area.

We were somewhat disconcerted when our Secretary failed to show up, but carried on regardless, maybe he got lost in the tomato house.

We have had many visitors in our area recently including ZL3UK, VK3ZPX, VK7ZJR, VK2BLS, VK3ZAU, VK3ZJS, VK7EB. Ken VK7KH and I went to Bell Bay and spent an afternoon with Phil VK3APO/MM. Phil is now on the Lake Boga.

Our Branch has handled its share of Sunday broadcasts and from reports to hand it has been worthwhile. However, remember that we are somewhat away from the centre of activities so do keep the news items coming in.

There is great activity on VHF bands in our territory, as we now have five stations on in the Burnie area, two in Ulverstone, and seven in Devonport. For this reason, some thought is being given to an emergency network. With the disasters so fresh in our minds, a move in this direction seems worthwhile.

A good radio year for all.

73, Max VK7MX

DIGITAL RADIO TRANSMISSION SYSTEM

A new Digital Communication System is being developed by the Bell Laboratory Engineers. The new link is a short range, high-frequency radio system designed to serve as a major communication artery in the metropolitan areas, and eventually connect with Bell's super capacity millimetre wave-guide system now underdevelopment. Dubbed Dr-18, for Digital Radio at 18GHz, the system will carry up to 28,000 simultaneous telephone conversations.

The new system differs in appearance from other radio communications facilities. It will be housed in modernistic enclosures (canisters) perched atop slin, steel masts, or on rooftops. These canisters will house the system's all-solid-state receivers and transmitters, antennas, and associated equipment.

Each relay station will have up to sixteen receiver/transmitter pairs, seven in each direction, for the working radio channels, and one in each direction serving as a back-up unit should one of the working channels fail.

5.
Federal

Darwin Relief Fund

Federal Executive have opened a fund for the nineteen members who were in Darwin at the time of the cyclone. Of course they will qualify for other relief and assistance but the intention is to provide something as quickly as possible towards replacement of aeriels, etc.

Please contribute to P.O. Box 150, TOORAK, Vic. 3142, marking envelope DARWIN APPEAL.

Ansar/Oscar meeting

Dave Hull VK3ZDH has been invited to attend this meeting in Washington in March or April to represent W.I.A. - Project Australis. It is considered essential that Australia be represented as discussion is certain to be about future stationary orbit satellites. The position of these is critical to enable us in VK to be able to use them.

Other means are being investigated to finance the trip but in the meanwhile we are being asked to find \$50-00 towards expenses. Preferably I think this could come from Branch donations rather than individuals on the basis that those that might contribute now would not necessarily benefit later.

P.D. Frith
Federal Councillor.

New Year's Eve Function

To the strains of Auld Lang Syne some twenty-six adults and eight children of the Northern Branch celebrated the departure of 1974 and the inception of 1975 in right royal manner at the QTH of Brian VK7ZBY at Launceston Airport.

Not only is Brian and his XYL Diane to be thanked for their wonderful hospitality but they are to be congratulated on what was a most successful and enjoyable evening.

In spite of a cold wind guests were made comfortable under a tarpaulin canopy with a well stoked wood fire in a sawn down 40 gallon drum to keep them warm.

Commencing at 20.30 hours a barbecue was enjoyed under fluorescent lighting installed by Brian for the occasion and well cooked steaks were washed down with the contents pumped from a cylindrical object packed in ice.

A Fox Hunt was held during the evening and, after midnight, festivities were continued inside Brian's home where supper provided by the XYLs was served.

I know I express the sentiments of all those present in thanking Brian and Diane most sincerely for the effort they put into the evening and in saying that if everything in 1975 is done by all of us in a similar selfless and friendly manner then it is going to be a most enjoyable and memorable year.

73, VK7GW (Gordon Wood)

ANNUAL REPORTS FROM DIVISIONAL OFFICE BEARERSReport on Divisional Membership as of
26th December, 1974.

Full Members	:	160	<u>New Members</u>	
Life Members	:	5		
Ass. Members	:	51	Full	: 18
Pensioner	:		Associate	: 3
Members	:	3		
Student Members	:	3		
				21
		222		

There were 16 members deleted from the membership list, due to becoming unfinancial. Total corrections and new members for 1974 = 52.

The membership in the Division has slightly improved during 1974; with only 16 deletions, it has shown an increase.

As the position of Membership Secretary has now settled down into a routine job, I am still able to continue in this position in 1975 - if the members so desire.

(Signed) (M.J. KNOTT)

VK7ZMK

Membership Secretary.

QSL Bureau

Cards handled during the year have shown a further decrease, comparative totals for the last three years being:

	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>
1972	7380	5609	12989
1973	6212	4470	10682
1974	5015	3484	8499

From 1962 (the earliest figures available) until 1970 the number of outward cards exceeded the inward total each year but since then the position has been reversed, which would seem to indicate that a lot of cards to VK7 stations go unanswered. Whilst not everybody is interested in QSL cards a VK7 QSL often means a lot to an overseas station.

The recent exorbitant increases in postage (60% for printed matter) and the drop in cards handled have made things more difficult. But I believe we can carry on without increasing the present charge of 1.25c a card.

Many stations these days have a QSL manager, so if you are advised accordingly during a QSO, please show his call on the reverse of your card viz. "8Q6AH via JA0CUV". Unless this is shown or I happen to know that he has a manager, the card goes to the Bureau in the country from which he is operating, and in that case you have much less chance of getting a reply.

Another reminder that when having new cards printed Please have them no larger than 5½" x 3½" and don't pick a heavy card. These two points can mean quite a saving in postage and makes handling easier.

Chas Harrison VK7CH - QSL Manager

ANNUAL REPORTS CONTD.Youth Radio Club Scheme

During 1975 clubs affiliated with the W.I.A. Y.R.C.S. have given approximately 70 youngsters an introduction to electronics through five clubs in Hobart, Launceston and Queenstown.

Once again not many Y.R.C.S. certificates have been awarded, but clubs have achieved successes. Launceston Matric have spent much on air time (they have 5 licensees attending) and Hobart W.I.A. have received quite an influx of members. Two Launceston students gained their A.O.L.C.P.

The State Supervisors' Conference held in Maitland in August provided valuable liaison and helped to ratify a revised series of syllabi. At this conference a Y.R.C.S. Federal Education Officer was appointed, this indicating that more attention is likely to be given to this facet of the scheme. It is hoped that long-awaited promotional material should be available soon.

Locally 1975 should see the establishment of W.I.A. sponsored clubs in the North West. Electronics is becoming more common as an option in high school technical courses and assistance has been given to teachers involved in these ventures.

It is hoped that Y.R.C.S. administration can be spread more widely next year with a committee running the scheme and **rather** more delegation of jobs than has occurred previously; further, it is important that a constitution be framed for the state's Y.R.C.S. operation.

Thanks to all who have assisted during the year. Particularly to Leo Gunther for the part he played prior to his relinquishing the running of the Hobart group.

Reg Emmett VK7KK
State Supervisor Tas.
Division,
W.I.A./Y.R.C.S.

Divisional President's Report

The Division has continued to operate as three branches with Council accepting the task of co-ordination and liaison as required.

This year's Council included representatives from each Branch and should have provided the ideal situation for complete liaison between Council and Branches. It is considered that this is the major factor in ensuring the continuance of a strong, united VK7 Division. If members also feel this way it is hoped they will ensure that suitable members continue to be available to serve on Councils.

Whilst the desirability of such a Council constitution can't be argued it poses problems in meeting venues. This year meetings were held in Launceston on Saturday afternoons and I would like to thank those who had to continually travel to attend. Thanks also to non-Council members who attended and showed interest in running your Division.

Liaison between Council and Branches and members was considered important. Unfortunately there were problems in speedily circulating Council minutes. In order to improve service it was decided to cease inclusion of the Bulletin as an insert in A.R. Instead it is posted direct. Even though it is bi-monthly, it is felt that the reliability of delivery is of far more importance.

ANNUAL REPORTS CONTD.

Broadcasts are being continued on a rotation basis between Branches. While the change of responsibility each week may cause confusion and a lack of continuity, sharing the workload in a state of our size is more essential. The system appears to be working well.

On-air activity is the main-stay of our hobby and QSL movements will indicate the level of this but there are a number of facets worth mentioning. SSTV and normal TV are gaining an increasing number of aspirants. Activity via Amateur Satellites Oscar 6 and 7 has been high when compared with other areas.

Operation through the Mt. Barrow repeater is doing much to re-inforce the "togetherness" of those within its range and the many interstate visitors who use it.

Social and promotional activities have continued throughout the year. Branches have conducted their own social events and, on a state wide basis, the Southern Branch held a well attended and most successful Annual Dinner. For the first time the North West Branch held the Annual Hamfest at Turners Beach. This will be hard to beat in interest and organisation and, it is hoped, that it will help to boost interest within the N.W. Branch.

Financial status will be shown in detail in the Treasurer's report but it should be noted that the Division has now covered debts which were outstanding. Only a minimal increase in subscription was necessary, and a refund to Branches for their operation was possible. It is pointed out that the Division will not collect subscriptions for Branches but will continue to allow them to levy their members if required.

In conclusion, a reminder that the strength of this Division is in its Branches. Thanks to the officers, committees and members throughout the state who have given their support. Members' support and encouragement is essential to ensure that our second smallest Division continues to be amongst the leaders.

To those who've held positions, assisted with broadcasts and helped other members in countless ways, I hope you've felt your efforts worthwhile, and appreciated by the members you're serving.

Finally, my appreciation to Council members for their co-operation and support throughout the year.

Reg Emmett VK7KK
Divisional President.

ANNUAL GENERAL MEETING : 1975

All members please note that the Wireless Institute of Australia, Tasmanian Division, that the 1975 Annual General Meeting will take place on Saturday the 5th of April, at the Adult Education Board Rooms, 8 High Street, Launceston, starting at 3 p.m.

The Business to be discussed at this meeting will appear in the March Bulletin.

ED.

Federal Councillor's Report

I have endeavoured over the past year to pass on to members any relevant information from the quite large quantity received from Federal and other Divisions. This requires me to at least read and partly understand reports from FE, VHF/UHF Advisory Committee, publications committee, project Australis, Y.R.C.S., FE and other Division's minutes.

The focal point of Federal activities is the Federal Convention. The last one saw the inclusion of the A.C.T. as a new Division within the W.I.A. A Y.R.C.S. Convention was held at Maitland in August, and we were represented by our President; you only have to hear the number of new calls around last year to appreciate the work being put into the Y.R.C.S. and school clubs by Reg and other members.

The P.M.G. Handbook for the guidance of Amateur Operators is slowly being re-written, it is hoped to be able to include standard requirements for repeaters.

The Institute was represented at the FM broadcasting inquiry and has since been active in trying to protect users of the 2M band from interference possibilities with the proposed more general use of TV CH.5A.

The removal of import duty on HF transceivers has saved thousands of dollars for amateurs (members or not) and further concessions are being negotiated to cover a wider range of equipment.

This year should see Novice licensing finally introduced; what changes this will bring are as yet unknown, but we must ensure that Novices are accepted into the Amateur ranks, otherwise they may forever be lost to become CB pirates when their two year novice period expires.

Federal again ran out of cash last year and as things stand, are quite likely to again this year. The problem is that Federal dues were set nine months before being collected. The introduction of cyclic billing should enable increases in subscriptions to be collected earlier.

To most members A.R. is the most tangible result from their subscriptions. The Publications Committee have had more than their fair share of problems in publishing A.R., and just when everything appeared to be coming right, the printer has a fire - destroying a lot of prepared material for future issues.

The next Federal Convention will be held in Melbourne, 25th - 27th April. I hope I will be re-elected to represent you there.

P.D. Frith VK7PF
Federal Councillor

VHF/OSCAR Report

Early in the year most states changed 2M operation over to agree with the W.I.A. 2M Band plan. VK2 have now agreed to follow and at the same time bring into operation an increased number of repeaters. Our second repeater, proposed for Mt. Wellington, has been taken over by another group but, because of changed circumstances, a lot of re-building is required before it can be made operational.

ANNUAL REPORTS CONTD.

With the availability of more equipment, six meter FM net operation is on the increase. The main benefit from net operation on this band is the ability to work DX while away from home, and to act as a band-opening indicator. The increased number of beacons with the use of the more effective SSB equipment can only extend our areas of communication, e.g. VK7ZDA recently heard a ZL Beacon on 2M.

OSCAR 6 completed its second year of operation a month before OSCAR 7 was successfully launched to give us now two operational satellites available for amateur use at the same time. The German translator is a truly VHF one, using 70 cm. input and 2M output. The use of VHF has given more stable signals than those on 29Mhz, which we are used to with A06. The number of stations using A07 is still low, but I'm glad to say the VK7s are in the majority.

In conclusion, there have been various reports of possible reduction of some of our VHF bands, all of which have been denied, but commercial interests would indeed like to make use of our empty bands, so do your best in the coming year to fill up those empty spaces.

P.D. Frith VK7PF
VHF/OSCAR Officer.

QSL Bureau

As at 31/12/74 cards are on hand for the following who have made no arrangements or who do not collect them at Branch meetings.

VK7AG. AZ. BM. CIC. CM. CR. FT. FM. GB. GJ. HB. IR. LD. LP. LS.
MD. MG. MH. NC. NL. OB. TA. TM. TX. VK.

Quite a few of these were included in last year's list and are still cluttering up the files, the threatened destruction of same not having had effect.

73, Chas Harrison VK7CH
QSL Manager.

ALL MEMBERS

Members are reminded that all Notices of Motion for the 1975 Annual General Meeting must be in the hands of the Divisional Secretary by March 8th (28 days before A.G.M.) and be signed by at least three members.

TECHNICAL ARTICLE

Due to the volume of news, reports, etc. submitted for this issue the concluding section of the Technical Article "Calculations on Wind-Loading on Towers" will appear in the March issue of the Bulletin.

ED.

The following information on Oscar's 6 and 7 orbit details is compiled by Peter VK7PF.

This orbit series is based on orbital data for Oscar 6 and 7. It is intended to give in future predictions the day number from which to start a week's predictions. This will then give all orbits within range and times to listen. The maximum error will be around three minutes. If, of course, you obtain orbital times from other sources it will be only necessary to find the nearest time on the series to establish a starting point.

73 Peter VK7PF

DAY NO.	TIME Z	DEG W	AOS "Z"	LOS "Z"
1	0710	155	0846	0856
	0905	184	1037	1057
	1100	213	1230	1250
	1255	241	1423	1437
	1840	327	1948	2004
	2035	356	2137	2157
	2230	025	2330	2350
2	0805	169	0939	0955
	1000	197	1130	1152
	1155	226	1325	1343
	1350	255	1518	1528
	1935	340	2039	2059
	2130	009	2230	2252
	2325	038	0029	0043
3	0705	154	0841	0851
	0900	182	1032	1052
	1055	211	1225	1245
	1250	240	1418	1432
	1835	326	1943	1959
	2030	355	2132	2152
	2225	024	2325	2345

12.

Orbit Details Oscar 6 & 7 Contd.

DAY NO.	TIME Z	DEG W	AOS "Z"	LOS "Z"
4	0800	168	0934	0950
	0955	196	1125	1147
	1150	225	1320	1338
	1345	253	1513	1525
	1930	340	2034	2054
	2125	008	2225	2247
	2320	037	0022	0038
5	0855	181	1027	1049
	1050	210	1220	1240
	1245	239	1413	1427
	1830	325	1938	1954
	2025	354	2127	2147
	2220	023	2320	2340
6	0755	167	0929	0945
	0950	195	1120	1142
	1145	224	1315	1333
	1340	252	1508	1520
	1925	339	2029	2049
	2120	007	2220	2242
	2315	036	0017	0033
7	0850	180	1022	1044
	1045	208	1215	1235
	1240	237	1408	1424
	1825	323	1933	1951
	2020	352	2122	2142
	2215	021	2315	2335

13.

Orbit Details Oscar 6 & 7 Contd.

DAY NO.	TIME Z	DEG W	AOS "Z"	LOS "Z"
8	0750	166	0924	0940
	1045	194	1115	1137
	1140	223	1310	1328
	1920	338	2024	2044
	2115	006	2215	2237
	2310	035	0012	0027
9	0845	179	1017	1039
	1040	207	1210	1230
	1235	236	1403	1419
	1820	322	1930	1944
	2015	351	2117	2137
	2210	020	2310	2330
10	0745	164	0919	0935
	0940	192	1112	1132
	1135	221	1305	1323
	1330	250	1458	1510
	1915	333	2023	2039
	2110	005	2210	2232
	2305	034	0007	0023
11	0840	178	1012	1034
	1035	206	1205	1225
	1230	235	1358	1414
	1815	321	1925	1939
	2010	350	2112	2132
	2205	019	2305	2325

14.

Orbit Details Oscar 6 & 7 Contd.

DAY NO.	TIME Z	DEG W	AOS "Z"	LOS "Z"
12	0740	163	0914	0930
	0935	191	1107	1127
	1130	220	1300	1318
	1325	249	1453	1505
	1910	332	2018	2034
	2105	004	2205	2227
	2300	033	0002	0018
13	0835	176	1007	1027
	1030	205	1200	1220
	1225	234	1353	1409
	1810	320	1920	1936
	2005	349	2107	2127
	2200	017	2300	2320
14	0735	162	0911	0923
	0930	190	1102	1122
	1125	219	1255	1313
	1320	248	1448	1500
	1905	331	2013	2029
	2100	003	2200	2222
	2255	032	2357	0015
15	0830	175	1002	1022
	1025	204	1155	1215
	1220	232	1348	1406
	1805	318	1815	1829
	2000	347	2102	2122
	2155	016	2257	2317
	2350	045	0054	0106

Orbit Details Oscar 6 & 7 Contd.

DAY NO.	TIME Z	DEG W	LOS "Z"	LOS "Z"
16	0730	160	0906	0918
	0925	188	1057	1117
	1120	217	1250	1310
	1315	246	1443	1457
	1900	330	2008	2024
	2055	001	2157	2217
	2250	030	2352	0010
17	0825	174	0957	1017
	1020	203	1150	1210
	1215	231	1343	1401
	1800	317	1911	1924
	1955	346	2059	2117
	2150	015	2250	2310
	2345	044	0049	0101
18	0725	159	0901	0913
	0920	187	1052	1112
	1115	216	1245	1305
	1310	245	1438	1452
	1855	329	2003	2019
	2050	000	2152	2212
	2245	029	2347	0005
19	0820	172	0954	1010
	1015	201	1145	1205
	1210	230	1338	1356
	1755	315	1907	1919
	1950	345	2054	2112
	2145	014	2245	2305
	2340	043	0044	0056

16.

Orbit Details Oscar 6 & 7 Contd.

DAY NO.	TIME Z	DEG W	AOS "Z"	LOS "Z"
20	0720	158	0856	0908
	0915	186	1047	1107
	1110	215	1240	1300
	1305	244	1433	1447
	1850	328	1958	2014
	2045	359	2147	2207
	2240	028	2342	0000
21	0815	171	0949	1005
	1010	200	1140	1200
	1205	229	1333	1351
	1945	344	2049	2107
	2140	013	2240	2300
	2335	042	0039	0053
22	0715	156	0851	0903
	0910	185	1042	1102
	1105	213	1235	1255
	1300	242	1428	1442
	1845	328	1953	2009
	2040	357	2142	2202
	2235	026	2335	2355
23	0810	170	0942	1000
	1005	200	1135	1155
	1200	228	1328	1346
	1940	343	2044	2102
	2135	012	2235	2255
	2330	041	0034	0048

17.

ANNUAL DINNER : 1975

Location: Village Motel, Westbury Road, Launceston.

Dinner Timetable: 1830-1900 hrs. - pre-dinner drinks.
1900-2100 hrs. - dinner as per sample menu
approx.
2100-2330 hrs. - bar service and dancing.

Cost: \$7-00 per person.

NOTE: Due to the fact that some members do not partake in alcoholic beverages the \$7-00 will cover the cost of the dinner and dinner wines only. All persons wishing to consume alcohol may do so at their own expense.

Accommodation is available at the following rates:

Single: \$11-50 (room only)

\$13-50 (room only)

Breakfast is a la carte, a minimum of \$1-00 per person.

SAMPLE MENU

SOUP

Vegetable Potage
Tomato Royale
Consomme

ENTREE

Fillet of Flounder with Sauce Tartare
Beef Stroganoff

MAIN COURSE

Barbecued Chicken with York Ham
Roast Pork with Apple Sauce
Porterhouse Steak and Mushrooms
Ham Steak and Pineapple

SWEETS

Apple Pie and Cream
Cassatta Mocha
Fruit Pudding with Brandy Sauce

COFFEE

.....

DINNER MINTS

SODIUM/SULFUR BATTERIES

Improved sodium/sulfur batteries are the goal of a development project jointly funded by General Electric in Eddison Electric Institute. The major problem is overcoming corrosion of the beta-alumina separators by liquid sulfur and sodium. The batteries operate at temperatures of 300° to 350°C. The batteries offer an efficient means of avoiding future blackouts by storing off/peak electrical power. They may also be useful to power vehicles.

Meanwhile a long-life storage battery using molten lithium metal sulfide electrodes has been developed by Rockwell International. A demonstration cell has been charged and discharged 225 times with a near zero loss of capacity. Work is now being done on a practical size battery that could be used in banks to store power generated during slack periods, which could be discharged during periods of peak power demands.

13.

REGISTRATION FORM
W.I.A. TASMANIAN DIVISION ANNUAL DINNER

I wish to advise that I/We will be attending the above function.

NAME.....PHONE NO.....CALL SIGN (if any).....

ADDRESS.....

NO. ATTENDING.....AT \$7-00 PER PERSON.

PLEASE FIND ENCLOSED CHEQUE/MONEY ORDER FOR \$.....

All those wishing to attend the above function please forward remittance and accommodation details (if any) NO LATER THAN Tuesday 1ST APRIL, to:

Mr. H.E. Hewens,
P.O. Box 1010,
LAUNCESTON. 7250

PLEASE NOTE: Please make all remittances payable to:
Northern Branch,
W.I.A., Tasmanian Division.

NOMINATION FORM FOR FEDERAL COUNCILLOR 1975

The Secretary,
P.O. Box 869J, HOBART. 7001

We hereby nominate.....Call Sign.....
to the position of Federal Councillor of the Tasmanian Division, W.I.A.
for the ensuing year 1975.

PROPOSER.....CALL SIGN.....

SECONDER.....CALL SIGN.....

NOMINEE'S SIGNATURE.....

to reach the Secretary by the Council meeting on the 15th February, 1975.

NOMINATION FORM FOR DIVISIONAL COUNCILLOR 1975

The Secretary,
P.O. Box 869J, HOBART. 7001

We hereby nominate.....Call Sign.....
to the position of Divisional Councillor of the Tasmanian Division W.I.A.
for the ensuing year 1975.

PROPOSER.....CALL SIGN.....

SECONDER.....CALL SIGN.....

NOMINEE'S SIGNATURE.....

to reach the Secretary by the Council meeting on the 15th March, 1975.
