D R A F T

25/9/85

STAFF-IN-CONFIDENCE

OVERALL SYSTEMS, PERFORMANCE
AND OPERATION
Technical Notes & Reports
AT/20.1.1/011

Operation of the Australia Telescope

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We discuss staffing and other factors relating to the operating phase of the Australia Telescope. These comments should be considered as preliminary in the sense that experience gained during the construction phase will no doubt dictate changes. It should also be borne in mind that a transition stage lasting for 1-2 years is likely to occur during which frequent visits by Epping based staff will continue to take place as in the construction phase.

Staffing

Tables 1-4 list the staff positions that are envisaged in the Executive Office, and at Parkes, Culgoora and Epping. In this scheme the present arrangement of sharing support facilities with Radiophysics is presumed to still exist (e.g. Workshop, Administration, Drawing Office, Photolab, Library, etc.).

The number of staff required for Culgoora is probably underestimated but the numbers will suffice if members of the software, receiver, astrophysics and executive groups at Epping are cycled through Culgoora (and Parkes) on regular rosters. This has the added advantage of improving communications between the centres at all levels.

The non-technical people at the observatories should generally be appointed locally and should remain at the one location except for short period emergency exchanges. On the other hand the technical and professional staff will benefit by recycling through Epping. As a rough guide about half of these should be permanent at the observatories to provide stability and continuity. The other half should be on ~ 2 year rotation from Epping. The scheme should however be flexible to suit individual desires.

Because of the difficulty in predicting the required staffing levels in each area all new appointments should be short-term to allow flexibility. At some stage, however, it will be desirable to make a number of key people permanent to ensure stability and continuity.

Lodges

Two philosophies can be adopted here:-

(1) People are away from home and working long hours and should therefore be given maximum comfort and support.

(2) Lodges with low average occupancy are expensive to run and economies should be made. If only two meals a day are provided on five days a week then a staff of 2 (or 1½ would suffice at each lodge. Residents would get their own breakfast and weekend meals (food would be provided) and make their own beds. Rooms would be cleaned twice weekly or between occupancies.

In the present economic climate it is hard to go past option (2).

Operators

The present Parkes observers are not being used in that capacity. If software support is required in the long term then it should be provided as such. In the longer term it may be possible to relax the rule of having two people present in the tower at a time (although for safety reasons this may be necessary). This would considerably ease the manpower problem at Parkes. It is reasonable that an astronomer should be present

at Parkes during stand alone observations. During LBA runs this need not be the case and an operator will need to be provided. The optimum arrangement will be to have ~ 4 intensive LBA periods per year. Staff could be seconded from other duties to observe in these periods or even brought from another centre if necessary.

At Culgoora the telescope will need to be manned 24 hours a day. This requires at least 5 operators with the occasional secondment of other staff during periods when operators are on sick or recreation leave. There should also be a separate operator to run the LBA playback facility. The exact ratio of LBA/CA observing times cannot be predicted at this stage so some flexibility between the two groups of operators should be maintained. The number of operators may be reduced if the AT and astrophysics group astronomers are rostered to carry out one 8 hour shift per day.

Maintenance of the Compact Array

(a) Scheduled maintenance

Initially blocks of 8 hours should be scheduled 2 or 3 times a week for maintenance and system tests. This should be able to be reduced progressively to blocks of ~ 2 hours between scheduled observations or at times of antenna moves. Antenna moves should be as infrequent as possible but once per week is an initial guess.

(b) Unscheduled maintenance

The loss of one antenna will be quite serious to the CA. The processing of monitor information will therefore need to be sufficiently intelligent to inform the operator which module is faulty so that a replacement can be made as quickly as possible. Many faults however will not lend themselves to this type of treatment and in any case the break in data may typically be ~ 1 hour especially if some recalibration is needed. It may therefore be preferable wherever possible to change to a program that does not require the faulty part of the system while the fault is being repaired.

If the operator cannot repair the fault and a suitable alternate program is not available then the operator may elect to:

(1) Continue observing with one missing baseline or aerial etc.

(2) Have maintenance staff repair the fault if it occurs during working hours. The observation would be suspended during this period.

(3) If it is out of hours contact the engineer on call for that week and discuss the likelihood of a repair being effected before the next regular shift. The cost of out of hours call outs should be considered (minimum 4 hours overtime plus one tired engineer or technician next day) compared to the cost of leaving the telescope idle till next day.

Maintenance of Siding Spring Antenna

This antenna will be maintained from Culgoora. If LBA runs can be concentrated into several extended sessions per year it may be economic to station a technician or (2) at the antenna for these periods. As well as changing tapes he could carry out on the run maintenance and assess the nature of more serious faults before more specialized help is sought from Culgoora, Parkes or Epping.

At other times tape changes could be done by arrangement with AAO or ANU or by a daily trip from Culgoora.

For Stand Alone observations from Siding Spring the antenna could be manned by the astronomers whose program is being run.

Working Hours and Transport

At present the Culgoora staff work 0754 → 1600 while the Parkes staff work 0800 → 1630 with appropriate lunch and tea breaks to suit 38 and 36¼ hour weeks. The Culgoora staff travel by car (4 or 5 to a car) and the Parkes staff by one large bus. In each case extra cars cater for out of hours work.

The fixed transport is restricting and prevents people working beyond the strictly defined hours if they wish to. The out of hours cars are more available to some staff than others and arranging for a car can waste more time than the additional time worked.

It is suggested that 2 or 3, 8 seat vans at Parkes and Culgoora may be a better system. They could provide staggered starting and finishing times (i.e. 0730 → 1600)

0800 → 1630)

0830 → 1700)

0900 → 1730)

to provide more flexible starting and finishing times for all staff. Out of hours cars would still be required but not to such a great extent as at present.

Observers and lodge staff who work fixed but different hours to the rest of the staff would require separate transport.

Transport to and from airport should be by taxi or drive yourself Commonwealth car unless the time can be made to coincide with the daily town trip.

Mail and Shopping

There is a need for a daily trip into town for mail. shopping, orders, accounts, banking, plane pick-up etc. The administrative officer and CA should do one trip per week each to handle the banking and account duties. The other three trips should be rostered amongst other staff. This has two effects. It makes the administrative staff available for longer periods than if they are in town everyday. It also reduces absenteeism for doctors, solicitors, dental visits etc. as these can be fitted in with the town trip.

Chain of Command

AT Director

Technical Manager

Astrophysics Group	Executive Office	OIC Parkes	Epping	OIC Culgoora
		Section Leaders	Section Leaders	Section Leaders

Housing

The Parkes housing situation is probably O.K.

At Culgoora we have:-

1 very large house
1 normal " (NML)
1 very small "
2 one room flats (no cooking facilities)
14 lodge rooms

In Narrabri we have:-

3 houses all in poor condition
2 NML houses in reasonably good condition

The NML and 2 of the RP houses are currently occupied by Plant Industry.

If we achieve the goal of half of the technical staff being cycled for 2 year periods from Epping we will need to provide ~ 10 houses. In addition some of the permanent people will need temporary housing assistance.

We certainly should regain possession of our own houses from PI and we may have some claim to one or more of the NML houses. The additional houses required can be provided either by purchase or rental subsidy. In favour of the latter is that it allows the family to select their own home and may in fact be cheaper. A typical house in Narrabri costs $K70-80 and rents for $120 p.w. The rental subsidy would be about $60 p.w. with the occupant paying $60. No maintenance costs are incurred. If the AT purchases houses the rent received is ~ $50 p.w. and possibly goes to consolidated revenue. Maintenance costs can be high. Recent reports however do indicate that rented accommodation is hard to come by in Narrabri. A possible solution is for RP to purchase say 5 blocks of land in the area and negotiate with a project home firm for the supply of ~ 5 brick veneer houses on our blocks to be constructed over a two or three year period.

Additional on site housing is not to be recommended as the value of the ease of call-out of the staff involved is more than offset by the inevitable personality problems produced by the constant proximity to other staff. Certainly there is no merit at all in requiring domestic staff to live on site if for no other reason than that the accommodation is too valuable for that.

Table 1

Executive Office

Scientific Director

Technical Manager

Administrative Officer

Steno Secretary

Post Doctoral Fellow

"

* "

* "

* Probably 2 of these positions should be at Culgoora.

Total = 8.

Table 2

PARKES

O.I.C.

Admin. Officer	Front End	- E.S.	Telescope Operators	E.S.
Clerical Assistant		- E.S.	"	E.S.
		- T.O.		
Maid/Cook			* "	E.S.
Maid/Cook			* "	E.S.
Maid/Cook+	Digital			
Handyman	Correlator,			
Handyman	Computers &			
	Desk	- E.S.		
		- T.O.	Mech/Elect	SLC
		- T.O.	"	SLC
			"	SLC
	Cryogenics	- T.O.		

+ Reduce by 1 if 2 meal, 5 day lodge operation is introduced

* With reduced operation of Parkes and the completion of current software changes 2 of these positions should lapse

During LBA periods other staff should be utilized as observers.

Total = 22.

Table 3

CULGOORA

O.I.C.

Admin.Officer	Front End. Rx & LO	- ES	Telescope Operators	- ES
Clerical Assist.	" " " "	- ES	" "	- ES
Maid/Cook		- ES	" "	- ES
Maid/Cook		- ES	" "	- ES
Maid/Cook+		- TO	X " "	- ES
Handyman	Digital Correlator.		LBA Playback Operator	- ES
	Computers & Desk	- ES		
		- ES		
		- TO	Computer Software	- ES
	Cryogenics	- TO	Systems Engineer	- ES
	Mechanical	- Eng	*Resident Scientists	
	Electrical	- STO		
		- SLC4	* " "	
		- SLC3		
		- SLC2		
		- SLC2		

Total = 32.

\+ Reduce by 1 if 2 meal, 5 day lodge operation is introduced.

* Resident scientists may be two of the Post Docs. from Executive Office.

X If members of Astrophysics Group are cycled through Culgoora on a weekly basis and if resident scientists are also used as observers. the numbers of observers can be reduced by 1 or even 2.

Table 4

EPPING

*Receiver Development Group	Data Reduction
	* Development
E.O.	PRS
E.O.	SRS
E.O.	E.S.
E.O.	E.S.
E.O.	
T.O.	Production
T.O.	
T.O.	E.S.
T.O.	E.S.
T.O.	T.S.
T.O.	T.S.
SLC3	

Total = 20

Grand Total = 82 (cf PPWC report ~ 80)

* Members of these groups should visit Culgoora and Parkes on regular schedules and in emergencies.

Overtime Payment

During construction. commissioning and operation of the Australia Telescope both Technicians and Engineers will be expected to work extended hours while away from the usual family comforts. It is important that some means be found to compensate people at all levels for these extra duties. It is noted that a precedent has been set in terms of the conditions offered to staff on the CSIRO oceanographic vessel (see attachment A).

Observatory Philosophy

If the AT is to become and remain a first rate astronomical research establishment a clear philosophy of operation needs to be adopted. It must be kept in mind throughout the organisation that the end product must be good astrophysics. Management, engineering and operations practices need to be constantly reviewed to ensure that they work optimally towards that end. There is also a clear obligation on the astrophysicists to communicate their aims, successes and failures to other members of the Australia Telescope staff. Without this feedback the great majority of people involved with the Telescope never see the end product of their work.

In this situation there is an inevitable tendency to make the more interesting parts of ones work ends in themselves. Priorities become distorted and the mundane tasks that must be performed for optimum telescope performance are neglected. This latter syndrome is reinforced by CSIRO's promotions policy which rewards innovation (often undertaken at the expense of the real job which was to be performed) but provides no recognition for those who perform crucial but often routine tasks reliably and well.

Visitor Centre

Whilst it is difficult to ascertain the potential numbers of visitors to the AT, provision should be made for a visitors centre at the Observatory. The exact location and size of the centre will need to be discussed further but access to the Eastern most end of the array and provision of an observation platform in that area will probably provide the most striking view of the telescope.

ATTACHMENT NO. 2

SCE: EML
REF: PA6/45A/8

22 July 1985

25/7/85

COPY

The Regional Administrative Officer
Regional Administrative Office
9 Queens Road
MELBOURNE VIC 3004

MARINE SURVEY ALLOWANCE

Marine survey allowance payment rates have recently been reviewed and approval has been given to increase the maximum payments as follows:

(a) with effect on and from 18 April 1985

Grade 1	$ 9,316 pa	($178.58 pw)
Grade 2	$17,534 pa	($336.12 pw)

(b) with effect on and from 30 May 1985

Grade 1	$ 9,502 pa	($182.15 pw)
Grade 2	$17,884 pa	($342.82 pw)

Would you please make the necessary adjustments to payments of marine survey allowance made by your office.

K J Thrift
General Manager (Personnel)

cc. The Chief
Division of Fisheries Research
HOBART TAS 7001

cc: The Chief
Division of Oceanography
HOBART TAS 7001

cc: The Regional Administrative Officer
RAO Perth

cc: The Regional Administrative Officer
RAO Brisbane

Copy given to Jon Gillet 25/7/85

TELEFAX MESSAGE

LR:ALW

PA6/45A/8
Enquiries: Ms C Read - Tel: (062) 48 4438

9 April 1981

The Chief
Division of Oceanography
c/- Regional Administrative Office
9 Queens Road
MELBOURNE Vic 3004

PROFESSIONAL STAFF

MARINE SURVEY ALLOWANCE - REVISED CONDITIONS

Following a review of the allowance payable to professional officers (research scientists, experimental officers and scientific services officers) who undertake duty at sea involving discussions with representatives of the Division of Fisheries and Oceanography and the CSIRO Officers Association, it was decided to introduce revised Marine Survey Allowance conditions with effect from 10 December 1979.

A full statement of the revised seagoing conditions is attached, together with a table detailing the various rates applicable from 10 December 1979.

With regard to the records to be kept by your Division, it is agreed that the form attached to the memorandum of 23 December 1980 from the Acting Chief of the Division of Fisheries and Oceanography is appropriate to your needs and includes all the necessary information. However, it should be noted that comment number 5 may not be wholly relevant, since the extra duty worked may not equate to total hours actually worked less 36-3/4 hours.

In relation to the period from 1979 to the present, during which time no formal records have been kept, payment of the additional allowance may be effected by the appropriate Regional Administrative Office on receipt of information regarding seagoing duties undertaken during that time (i.e. periods of duty, details of cruise) together with certification by the relevant Chief that particular individuals were eligible for the higher rates.

The maximum rates will be reviewed periodically at this Office as in the past and variations will be notified. Copies of this memorandum have been forwarded to the appropriate Regional Administrative Offices.

Mrs C.Read of this Office ((062) 484438) is available to assist you with any enquiries you may have in this matter.

K.J.Thrift
Secretary (Personnel)

c.c. The Regional Administrative Officer
Regional Administrative Office
SYDNEY

c.c. The Regional Administrative Officer
Regional Administrative Office
MELBOURNE

c.c. The Regional Administrative Officer
Regional Administative Office
PERTH

c.c. The Regional Administrative Officer
Regional Administrative Office
BRISBANE

REVISED SEAGOING CONDITIONS - PROFESSIONAL OFFICERS

The three main components of the seagoing conditions applicable to professional officers of the Divisions of Fisheries Research and Oceanography are marine survey allowance, payment for Sunday and Public Holiday duty, and travelling allowance, all of which are detailed below. The first two components are designed to compensate eligible officers for the discomfort, arduous conditions, and long hours associated with duty performed on board seagoing research vessels, and are payable by the Regional Administrative Office upon receipt of records of time spent at sea.

1. Marine Survey Allowance

(a) Purpose : Compensation for all duty on Saturdays and out of hours work on Sundays to Fridays, as well as all disabilities associated with work at sea on board a research vessel. In this connection, the term 'at sea' means all time on board a vessel from the time the vessel leaves the wharf until return to the wharf.

(b) Eligibility :

(a) Research Scientists, Experimental Officers, and other professional staff, who perform duty at sea are eligible for a grade 1 allowance for each day, or part thereof, of seagoing duty: provided that the total time at sea on a tour of duty is not less than 24 hours.

(b) An officer, who is eligible to receive a grade 1 allowance, may be paid a grade 2 allowance in lieu if duty performed on Saturdays, and in excess of 7 hours 21 minutes on Sundays to Fridays, amounts to more than a minimum of 17 hours per week.

(c) Rates of Allowance (effective from 15/1/81):

Grade 1 : 37½% of weekly salary up to a maximum rate of $6764 per annum ($129.66 per week).

Grade 2 : 65% of weekly salary up to a maximum rate of $12731 per annum ($244.04 per week).

2. Sunday and Public Holiday Duty

An officer who is eligible for a grade 1 or grade 2 marine survey allowance who is at sea on a Sunday, will be granted 1 day off on return to shore. Such an officer who performs duty at sea on a Sunday or public holiday will be eligible to receive -

(a) in respect of a Sunday - up to 1 extra day's pay at his ordinary rate of pay,

(b) in respect of a public holiday -

(i) up to 1 extra day's pay at his ordinary rate of pay; or

(ii) up to 1 day off duty on return to shore.

3. Travelling Allowance

Professional officers are eligible to be paid the incidentals component of travelling allowance at the rate specified in T. & C. sub-paragraph 60(6) for each 24 hours at sea.

With regard to the marine survey allowance, the following points should be noted -

(i) Consistent with the approach adopted with technical staff who are required to work at sea, any duty worked outside the 8 a.m. to 6 p.m. bandwidth (Monday to Friday) would not be reduced if an officer did not work a full 7 hours 21 minutes on any day, Monday to Friday, within the bandwidth.

(ii) The time of day at which professional officers would be regarded as performing their normal 7 hours 21 minutes duty will be regarded as falling within the bandwidth of 8 a.m. to 6 p.m.

(iii) No minimum period will apply to short periods of recall to duty; all periods of duty will be aggregated.

(iv) If a professional officer takes work connected with his own program to do at sea when he is not rostered for work on watches, etc., time spent doing this work will be recognized as duty for the purpose of determining entitlements, subject to the cruise leader accepting such work as duty.

(v) As the allowance contains both 'long hours" and 'hardship' components, officers eligible to receive it will not be eligible to receive any seagoing hardship allowance.

The maximum rates of the marine survey allowance will be reviewed periodically at Headquarters in the light of general salary movements, and variations will be notified. It should be noted that the allowance is calculated over a 7 day week and in respect of completed hours of duty at sea.

CSIRO
Canberra
April 1981