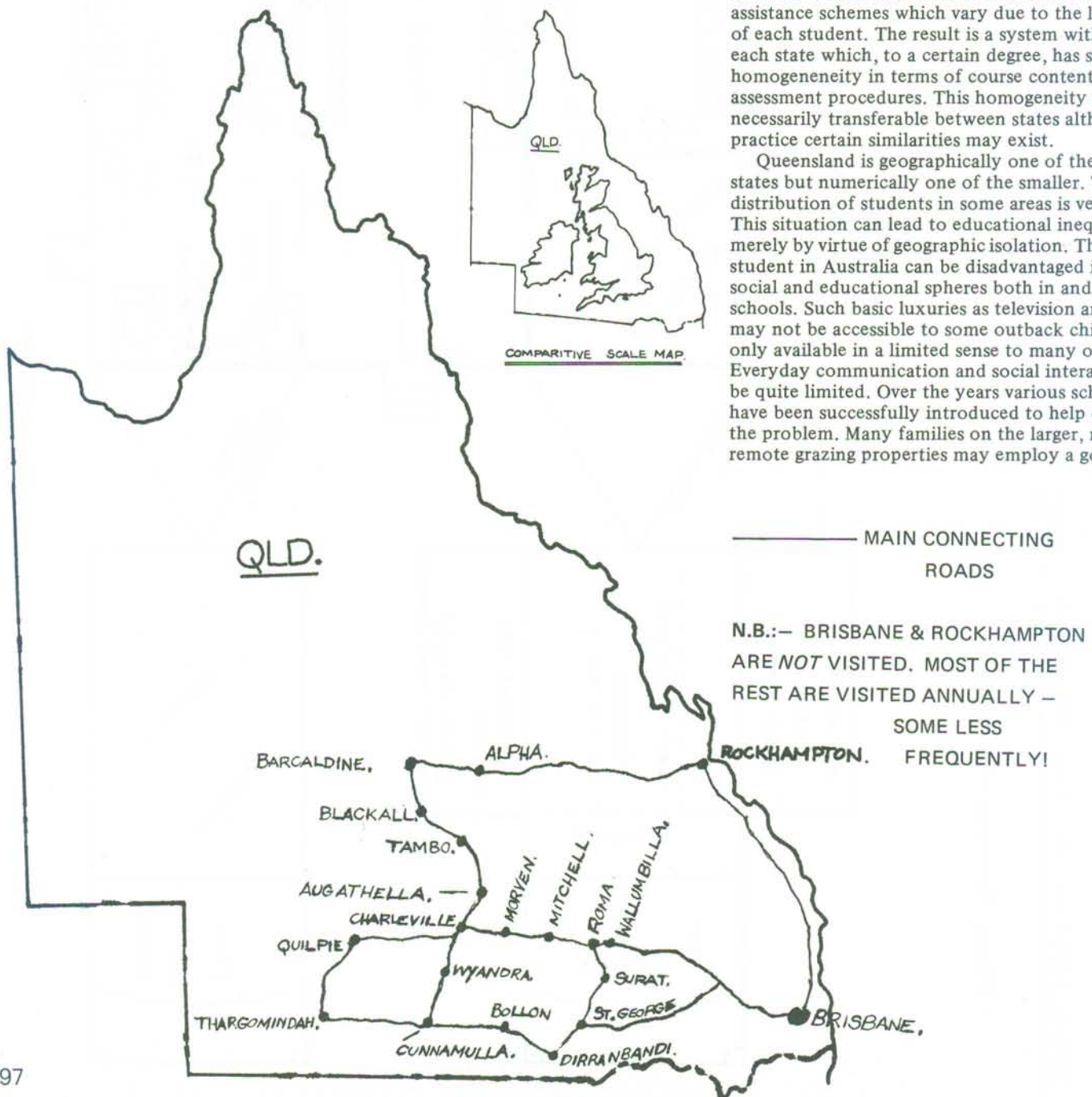


A Mobile Manual Arts Workshop for Queensland

Education within Australia is generally administered by the various states and supplemented by private denominational institutions. To each state government falls the duty of determining such matters as syllabus content, distribution of facilities, general administration and so on. These matters (and others) are dealt with at many levels within the bureaucracies of each state. Nevertheless the federal government allocates to each state, through grants, the major funding required to

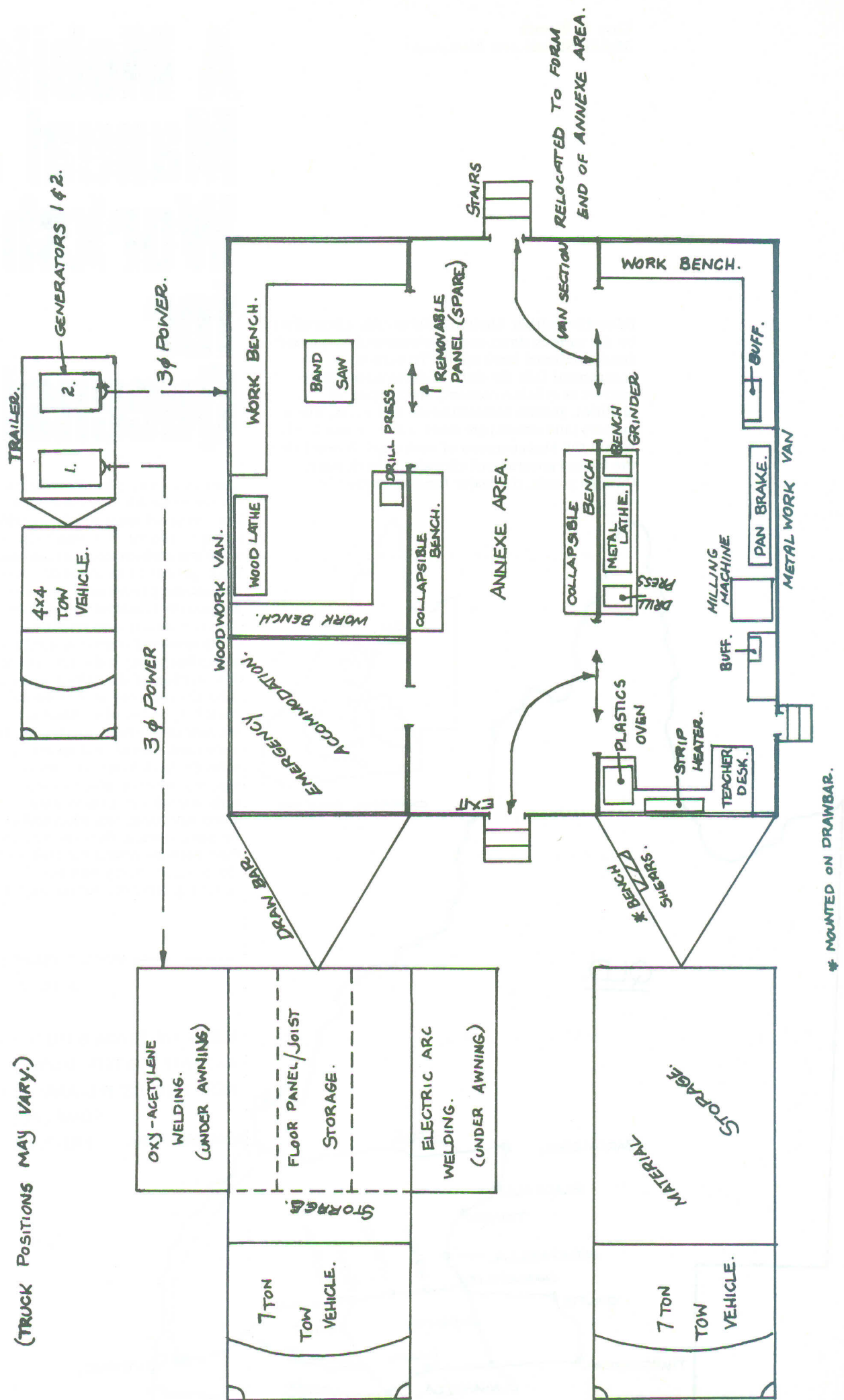
implement any educational policies. The Commonwealth also funds a number of student assistance schemes which vary due to the location of each student. The result is a system within each state which, to a certain degree, has some homogeneity in terms of course content and assessment procedures. This homogeneity is not necessarily transferable between states although in practice certain similarities may exist.

Queensland is geographically one of the larger states but numerically one of the smaller. The distribution of students in some areas is very sparse. This situation can lead to educational inequalities merely by virtue of geographic isolation. The outback student in Australia can be disadvantaged in many social and educational spheres both in and out of schools. Such basic luxuries as television and radio may not be accessible to some outback children and only available in a limited sense to many others. Everyday communication and social interaction can be quite limited. Over the years various schemes have been successfully introduced to help combat the problem. Many families on the larger, more remote grazing properties may employ a governess



MOBILE WORKSHOP IN FULL OPERATIONAL LAYOUT:

(TRUCK POSITIONS MAY VARY.)



or tutor for their children. There are government sponsored bus schemes to transport students large distances to schools. The reader may be aware of Australia's 'School of the Air' where lessons are broadcast to students on remote properties by two-way radio. These schemes have been in progress for some time and are just a few examples of work being done in these areas.

More recently however a new scheme has been introduced to the Queensland scene. It is called the Priority Country Area Program (P.C.A.P.). The activities embodied in this program are a result of collaboration between the Commonwealth and state governments and Catholic education, which is a private body. A rationale was developed for a scheme which would help to alleviate the problems faced by outback students. This was based on information and advice from both educators and interested parents and citizens. The scheme is not a static one and even now is still in the process of evolution and development. The scheme provides some quite diverse services, a few of which are listed below:—

- i) The provision of video-tapes containing items of general interest to remote schools. This service is designed to overcome communication problems so that students may gain a wider perspective on the outside world.
- ii) An itinerant teacher service whereby small groups of teachers operating from a central point pay regular visits to students on grazing properties to help them with their correspondence courses.
- iii) A music programme where music teachers travel by light aircraft to the various centres to give personal instruction.
- iv) A mobile manual arts workshop travelling to schools which either have no manual arts facilities or whose facilities are to some degree lacking compared with metropolitan schools. One example of such a facility is welding (Gas or arc).

The aspect of the scheme which is of particular interest here is the mobile manual arts workshop. The unit was first conceived about four years ago. The idea was to equip a fully operational manual arts workshop with all the facilities which could be found in a large metropolitan school. The problem was that the unit had to be totally mobile and robust enough to travel long distances each year. A fairly rigid degree of compactness for such a unit was also required so that it might comply with state road regulations. The one favourable point was that it would only need to cater to reasonably small numbers of students at any one time. Over a period of twelve months however the number of students who pass through courses on this unit at the various stopovers would far exceed the involvement in most large schools.

It was decided at the time that the basic facilities which should be offered by the van would include oxy-acetylene welding, electric arc welding, basic metal and wood machining and basic handcrafts in wood, metal and plastics. To incorporate all of these facilities within the aforementioned design

parameters has taken a deal of thought. Initially a group of manual arts inspectors, interested teachers and motor body building experts collaborated to come up with a basic design. The initial unit which was born of this collaboration had its problems. These were more the result of necessary cost cutting strategies which were necessary because of a climate of economic restrictions. It was found, for instance, that the original chassis on the trailers was too light in construction to cope with the weight under normal and country road stresses. A dual axle system was converted to tri-axle and so on. The original prime movers were also underpowered for the job. It should be stressed that they do not act purely as prime movers but have the added function of incorporating back up facilities. The advent of these problems however did influence funding to allow for the flow of more money so that they could eventually be modified. The result is basically what exists today and is still operating quite successfully.

Physically the actual workshop consists of two large, heavy duty caravans, each one measuring 30ft. long x 8 ft. wide. On arrival at a school site the vans must be carefully manoeuvred into position so that they are parallel and 8 ft. apart. The 8 ft. spacing from one end to the other must be virtually to the inch. Each van is then levelled using jacks at each corner. A series of metal floor joists are now positioned between each van on specially fitted brackets. Several sheets of aluminium checker-plate flooring are then dropped into position. Each floor plate is then locked in place using a key system. This makes them virtually immovable. A 30 ft. x 8 ft. open area now exists between each van. To enclose this area each van has large, removable side panels which are utilised for this purpose. Two of these panels are now relocated at each end of the open area and locked into position. A third panel is not normally required and hence stored elsewhere in case of emergency. A canvas roof is now fitted between the vans. Above this again a secondary 'tropical' roof is fitted. This allows for air circulation between the covers which has an insulating effect to combat heat build-up inside the workshop area. This can be quite considerable in summer months. The result is a general shop measuring 30 ft. x 24 ft. which is totally protected from the elements.

Each van is towed by a seven ton V8 truck. These vehicles are also an integral part of the workshop facility. One truck is used for the storage of materials. This truck must carry virtually a twelve month supply of materials since opportunities to stock up during the year are few. The other prime mover fulfils several functions. During travel the floor plates and joists from the workshops are stored in a central storage area in the back of the truck. There is another storage area for small items to be kept in lockers. However the vehicle finds the greatest use as a welding facility. Toward the rear end each side of the vehicle can be unlocked or raised to form an awning. Metal benches and sight



1. Storage Truck and Woodwork Van on arrival at Wallumbilla.

2. Positioning floor joists between vans.

3. Dropping floor plates in position.



screens then fold down from the truck; one on each side. When fully erected the result is three welding bays on one side of the truck specifically for electric arc welding and three bays on the other side specifically for oxy-acetylene work. Three phase power is linked via the truck to the workshops so that the electric arc welders may be used. A third vehicle also belongs to the convoy. It is a four wheel drive unit which tows two generating sets. Although many schools are now equipped with three phase power outlets into which the mobile workshops can tap many others are not and so the workshop sometimes supplies its own electricity. Staff members on the unit drive the vehicles, as well as erect and disassemble the workshop. This is all in addition to normal teaching duties.

Having viewed the outfit as a whole it is now necessary to examine in more detail the internal facilities of each caravan. The central collapsible area between the caravans is a general area where students can work on any project from the wood, metal, plastics or welding areas. It is equipped with folding benches and vices but is generally non-specific in function. It provides necessary overflow space so as to avoid congestion in the subject specific areas. One van is equipped only for metal and plastics oriented projects. Hand tools for such activities are racked on the wall. The supply of each hand tool is on the basis of catering to an eight student class. In terms of fixed machinery this section offers: a small metal lathe, milling machine, drill press, bench grinder, panbrake, two buffing machines, a plastics oven and strip heaters for plastics. Such other portable tools as angle grinder are also in use and sometimes shared with the welding section outside. The other van is split into two parts. One section is an accommodation section for the staff. It consists of a full kitchen facility including a full-sized refrigerator and stove as well as a shower/toilet cubicle, dinette and triple bunks. This accommodation area is meant basically for emergency use. In general staff find accommodation in hotels or registered lodging houses. However, in the event of a vehicle breakdown or the lack of lodgings in a particular town, staff have some place to live. The other section is for woodcraft activities. Like the other van hand tools are racked in multiples of eight on the walls. Fixed machinery here consists of a band saw, wood lathe and a small drill press. There is however a wide range of portable electric tools which include drills, routers, jig-saws, an electric planer and portable circular saw and table. All fixed machines and power points can be isolated on a circuit breaker board in each van. The whole workshop area is also air-conditioned. This is a most necessary and welcome feature in a country where summer temperatures can often be well above 40°C. The accompanying diagram, which is not to scale gives the reader some idea of the internal layout of the mobile unit when assembled.

A wide area of western Queensland is included in the circuit covered by the workshop each year. The towns serviced are shown on the accompanying



4. Fitting collapsible steps to central area.

5. Central floor area complete. Note side panel at rear of van is removed.

6. Vans are now completely set up, including tropical roof.



map. A similarly scaled map of Great Britain has been superimposed to give the reader a more accurate conception of distance. The period of stay in any one locality varies from two to four weeks. This period of stay is largely governed by the particular needs of a school. A wide age group is catered for and students may have a wide range of ability levels. For this reason a corresponding range of projects must be made available to them. Some projects are necessarily very basic so that a ten year old student may gain a degree of confidence and success in his first steps into manual arts. As this student grows older he will gradually advance through the range of projects offered during each annual visit of the workshop. By the time he is fifteen he may be tackling projects as similarly advanced as those offered in large metropolitan areas. Despite the above references to gender it is important to realize that both boys and girls do courses in manual arts. Whatever level the student is doing, however, the jobs must be of short duration and yet incorporate the skills and basic technology which must be taught. During any visit *at least* one job from every area should be completed by the student. To facilitate this schools generally waive their normal timetable and classes during the mobile unit's visit. In this way students are under manual arts instruction for a maximum period. The workshop staff may take a particular class level daily in half day or even whole day units throughout the visitation period. Small class numbers are also an advantage and the combination of these points means that in a two week period an amazing amount of work units can be covered.

Every job done on the mobile workshop is assessed and the marks made available to the host school, whether to integrate the mark in a students normal manual arts mark (if the school has a manual arts centre) or issue school certificates outlining results. It must be remembered that for some schools the mobile unit provides the only manual arts course available. In other schools basic manual arts courses are already available but the mobile workshop provides some form of embellishment to their basic course. Catholic education, a private body which was mentioned earlier, has collaborated with the Commonwealth and state governments in the administration of this scheme and the mobile workshop. It is therefore important to realize that both convent schools and state schools are serviced in any one town.

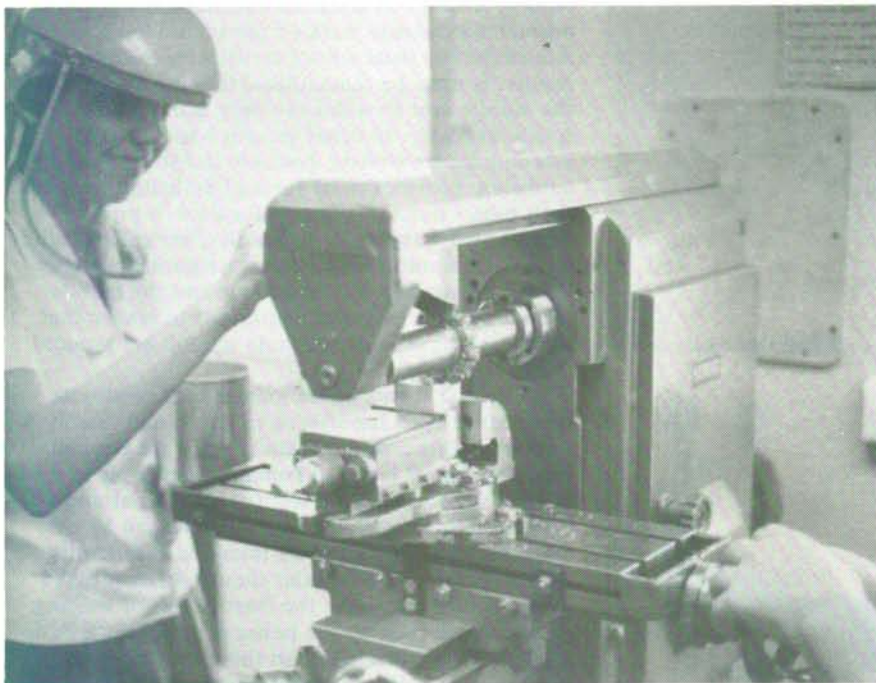
In smaller towns where manual arts centres do not exist courses are offered to adults and usually run two nights a week. These courses are generally very popular. It is not uncommon for people to drive in adverse conditions up to fifty miles to attend an evening class. These classes are undertaken by the workshop staff in their own time as a community service. For the local grazier these courses provide an opportunity to learn the finer points of welding or perhaps to pick up the basics of metal machining. These skills are invaluable to them in their isolation. For the local ladies the night courses offer an



7. Welding truck open and operational. Students are receiving instruction in oxy-acetylene welding.

8. Students oxy-cutting

9. Students on milling machine.



opportunity for a 'night out'. They gain a great deal of pleasure from doing some form of craft work with the added attraction of enjoying the social interaction with their friends. This is very important in towns where there is precious little entertainment.

There is at present a pool of six teachers available to man the mobile unit. At any one time three are required on the unit. The other three are programmed as relieving teachers in larger schools. Over a twelve month period a rotation register incorporating regular changeovers is worked. In this way all teachers are given the opportunity at some time to work together. For the individual, in effect, this means that in one year six months are spent travelling with the vans and six months at large city centres. In this manner staff can keep in contact with new developments in large schools and should illness befall a member or members of the crew in the field, replacements can be made quickly. It is necessary at all times to have a pool of teachers fully conversant with the running of the mobile workshops at hand. From a teaching viewpoint periodic breaks are necessary to provide a change of scene to help sustain and nourish enthusiasm.

From a teaching point of view working on the mobile unit can be very enjoyable. The workshop on arrival in town is often eagerly greeted by children and townspeople alike. Whether it be coaxing a very young student through a project or supervising the progress of an older student the rewards are ample. The high level of student appreciation is universal and disciplinary problems are virtually non-existent. The problem is often to curb a student's enthusiasm so that a higher quality job may be completed. Students are often known to roll up to adult evening classes as well. Regrettably, under these circumstances they must be turned away. On departure it is not uncommon to receive thank you cards or gifts. The teaching does however entail a commitment of personal time not always required in other forms of teaching. It is sometimes necessary to move the unit and reassemble it elsewhere, ready to teach, over the space of a weekend. Maintenance and servicing of the units, servicing generators, cleaning chores, etc. can at times make small intrusions on time but it is all worthwhile in the long run.

Briefly then the workshop has been designed, as described, by a group of people to alleviate an educational problem in Queensland. Physically the facilities operate efficiently, especially when viewed in terms of their student turnover, and provide new services heretofore unknown in many parts of western Queensland. The result seems worth the trouble and the appreciation shown by outback students and townsfolk would certainly stand to confirm it. Only one of the units as described is at present covering as much of the outback Queensland as is possible. It must be realized that many centres do not enjoy these services.