

THE GRAND HOTEL, Anaheim, California USA was the venue for the first ever 1/12th scale World Championships held over the period of July 14-22 July under the direction of Mike Reedy, IFMAR 1/12th Chairman. For the first time the top 1/12th drivers from Europe, America and Japan were to compete for the title of World Champion in both Modified and Standard classes.

On arrival at the tracks the UK contingent of 17 drivers were greeted with a cordoned-off area of car park which contained a neat covered pit area and the track laid using white paint lines and wooden boards. The actual surface of the track had been sand-blasted to remove the surface sealing, leaving a smooth, but very abrasive surface on which to race.

The track itself was well designed being just the right mix of straights, hairpins and smooth corners, all of which were fairly easy to drive but difficult to negotiate really fast. By the end of the meeting, the top drivers made it look deceptively simple.

There were four days of practice before the qualifying heats started, and all drivers were obviously out to make the best of it, most being on the track from 8am to 8pm. The Japanese Team seemed to be well organised to the extent that every time a Japanese driver practised, the pitman recorded each individual lap time for the full eight minutes.

Additionally one man changed Nicads all day for the team drivers, obviously a great help.

The track was permanently surrounded by people timing cars and rumours of extra fast lap times were quickly spread. Most of the fast times came from the *Associated* drivers, particularly Mike Lavacot and Kent Clausen, down to below 13 seconds on two occasions. These fast times were not repeated under actual race conditions, obviously very hot motors were being used to 'psych' out the other teams during practice.

A splendid drivers' rostrum had been



built on a trailer which placed the driver 6ft. off the ground giving an excellent view of the circuit. The peg board at one end of the trailer contained no less than 50 pegs, but the most popular frequencies were on the 27MHz band; none of the chaotic scenes from the Eurochamps were witnessed.

Once a supply of Oil of Wintergreen had been found (all the local chemists had sold out) the UK team soon came to grips with the methods of preparing the tyres as Teac alone was not enough. Indeed many competitors were using 'Coppertone' (Factor 15) Sun Tan Lotion as well on their tyres (honest!).

The circuit proved to be very abrasive, tyre wear was extremely high and by the third day, the 'Ranch Pit Shop' was doing a roaring trade in tyres for those lucky enough to have access to a tyre truing machine, *Associated* 3611 rears and *Associated* Kit Soft fronts being the best sellers. The Ranch Pit Shop also had a selection of beautifully pre-painted bodies, the likes of which aren't seen over here.

On the third day of practice there was both a Team Captains' meeting and a Drivers' Meeting with Phil Greeno adopting the position of British Team Captain. The Standard motors to be used in the next two days of qualifying were given out, drivers were able to pick out any motor from one of three large boxes, and once received, these motors were tried out after careful investigation as to the gear ratios to be run

*Below left: Modified class world champion, Arturo Carbonell. Below: Art's winning, Delta 'Phaser', featuring Delta 1/8 'Eagle' shock absorber for the motor-pod and adjustable camber front end.*



# 1982 1/12 SCA WORLD CHAMP

REPORT & PHOTO  
BY PHIL OLSON



(16:48 or 15:46 being the most popular). In fact the motors proved to be very fast on these ridiculous gear ratios.

## Standard Qualifying Day One

Round One Group A started right on time at 8am, this caught a few people out as there were only three cars in heat one instead of eight. The lap scoring equipment was similar to the system used at the Eurochamps earlier this year, with each car having one person to score. The sheet the computer printed out at the end of the round held an enormous amount of information, as well as each driver's final score,

# ALL ELECTRIC CHAMPIONSHIPS

## GRAPHS



time. In the very next heat (Round Three Heat One) Repete drove round at a blistering pace for eight minutes to record a time of 33/13.0 secs which was not bettered that morning.

Group B. In theory this group included all the top drivers and by the end of Round One, Mike Lavacot and Ted Johnson had already put in fast 32 lappers in which they both spent time off the circuit, but by the end of Round Three nobody had completed 33 laps, and Mike Lavacot's time of 32/40 was top in Group B. There was a total of 30 drivers from Groups A and B also on 32 laps.

### Day Two Standard qualification

This offered the last three chances of reaching the World Final, would Fusco time stand, would Mike Lavacot stay on the circuit for eight minutes? Group B went first and heat 1 saw Kent Clausen and Mike Lavacot doing 32/5.5 and 32/3.2, although they both spent at least half a lap off the circuit. When they were on the track they were unbelievably quick. Round Two saw many 32 lappers which made things very close at the top. Round Three saw Group B's last chance to qualify and Kent Clausen duly responded with only the second 33 lapper (33/14.0) which he hoped would qualify him straight to the Final.

Mike Lavacot also improved to 32/1.3 and Bill Maisey also made the semis with 32/7.8.

*Below right: Standard class world champion, Kent Clausen. Below: Kent's winning Associate 'RC12' extensively lightened. Note the stiffening spine which is bolted at either end instead of being glued.*

an average lap time, individual lap time, fastest and slowest lap time for each driver. Any error on the timing could be easily traced and checked (in fact, there were very few claims of missed laps).

At the end of Round One, it was Kevin Orton and Arturo Carbonell both driving the new prototype *Delta* who led the way with 32 lappers. Heat One Round Two provided us with a neat drive from Repete Fusco which showed 32/6.5 a top score at the time. This position he held until the end of Round Two Heat Eight, when Arturo Carbonell clipped 0.2 seconds off Repete's

Group A followed, Fusco showing that his 33 laps the previous day was no fluke by doing three fast 32 lappers. Heat six saw Art Carbonell put in 33/14.6 for third fastest time with team mate Kevin Orton also thinking he made 33 laps, but being given 32/0.6, fourth fastest, and he hoped straight into the Final.

The last of standard qualifying saw an amazing race for one of the pre-meeting favourites, Ralph Burch Jr., who till then did not have a time fast enough to qualify for the semis, drove round oh so smoothly for a time of 33/13.1 just 1/10th of a second off top qualifying spot.

So with Repete Fusco, Ralph Burch, Kent Clausen and Art Carbonell, straight through the next 20 drivers including the European Champion, Jimmy Davis and B. Maisey had to battle it out in the semis on Saturday. Both Neal Francis and Tony Wells missed out by just two seconds.

### Modified class qualifying

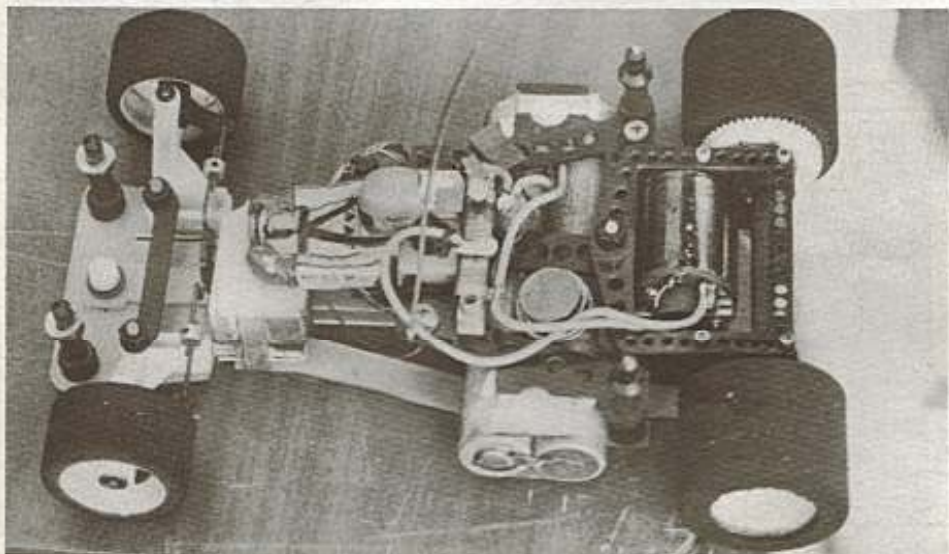
Group A. Everybody's eyes were on Repete to see if he could again get top qualifying time but Arturo Campbell drove cleanly to set 33/1 sec. which was not bettered that morning except when Art himself drove round to the first 34 lapper (34/5.1) with Repete second fastest with 33/4.9 and Kevin Orton and Ralph Burch close behind.

Group B. Eyes brightened in the British Team as Jimmy Davis stormed around to set TQ with 34/13.9 with Neal Francis just half a lap down.

### Day Two Group B

Many of the drivers were finding it very difficult to put in one really good fast time to try and reach the semis, which made it very close at the lower end to the qualifying places with Wayne Davis being 25th fastest just missing out by 0.5 sec.

Day Two gave the last chance of qualifying and all the drivers were trying hard, too



hard in some cases, which slowed things down slightly. Neal Francis had an excellent race with Jimmy which put Neal up into fourth place qualifier with 33/4.6. No more 34 lappers were recorded until Kent Clausen in his last heat had a superb drive to take top position with 34/11.0.

### Group A

No surprises. Repete Fusco in his first heat got it together and recorded 34/14.8.

Arturo Carbonell was in great form in the afternoon recording 34 laps in all three of his heats (the only person to get more than one 34 lapper at that) and setting TQ with 34/8.7 which he fully deserved.

### Saturday

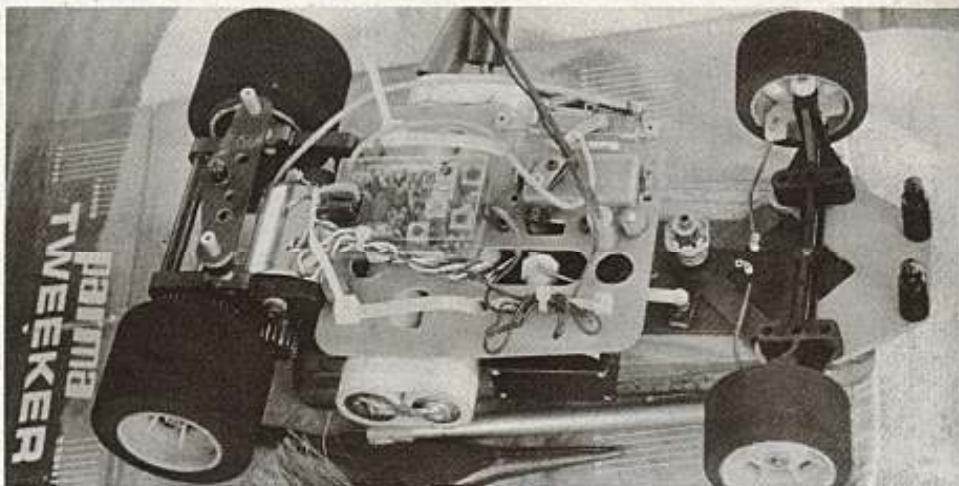
Two semi-finals for stock and modified with the first two from each semi and the next two fastest going through to the final with the top four qualifiers.

### Standard Semi-Final One

All our eyes were on Bill Maisey and Jimmy Davis to see if they would qualify for the Final. With no grid for the semis the fast starters had a definite advantage as with luck they could avoid the m el e at the hairpin at the end of the straight. Indeed, as the horn went Frank Killam and Jimmy Davis shot straight into the lead. Frank Killam built up a good lead while Bud Bartos, Mike Hickman and Jimmy Case gradually overhauled Jimmy Davis, but after six minutes it suddenly started to rain causing the race to be stopped (the first time it rained that summer). The rain stopped very quickly and it was decided to continue racing one hour later starting with Standard Semi Two.



Right: 'lucky dip' boxes of standard dip motors. Left: Team Delta's own dynamometer helped Arturo Carbonell in selecting that 'Special' motor. Below right, under orders from 'Gemini' captain, Phil Greeno, John Chamberlain switches to the Delta 'Phaser'.



Above, Parma 'Panther' driven by Bud Bartos to a Standard class final place.

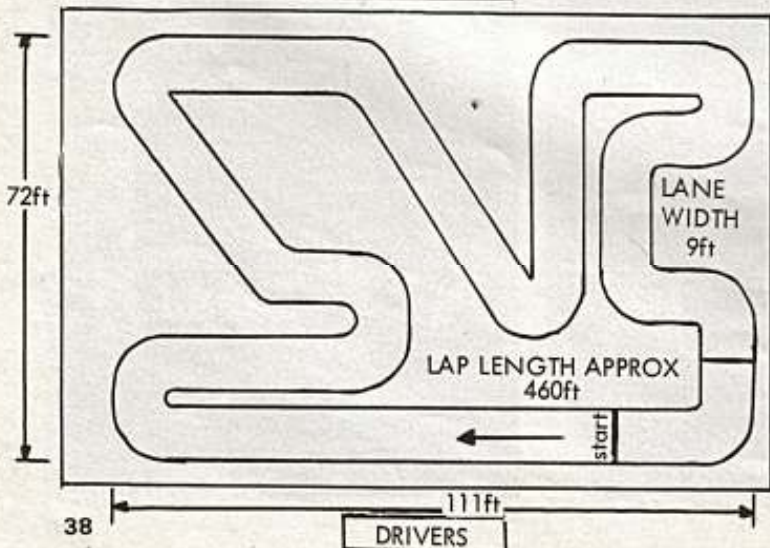
### Standard Semi-Final Two

This saw pre-meeting favourite and local hero Mike Lavacot on the line bidding for a place in the World Final. From the line Bruce Hickman, Butch Berney and Robert Cavazos made the corner with Mike Lavacot back in fifth place. After five laps Hickman was still in the lead followed very closely by Berney and Lavacot with Lavacot moving cleanly past Berney a few laps later. Lavacot followed Hickman closely until halfway through when he just squeezed past Hickman only to lose the lead again

when he clipped a dot. With one minute to go, Lavacot crept past Hickman and at the end Lavacot crossed the line just 1.7 seconds ahead of Bruce Hickman with third place man Berney in between them but one lap down.

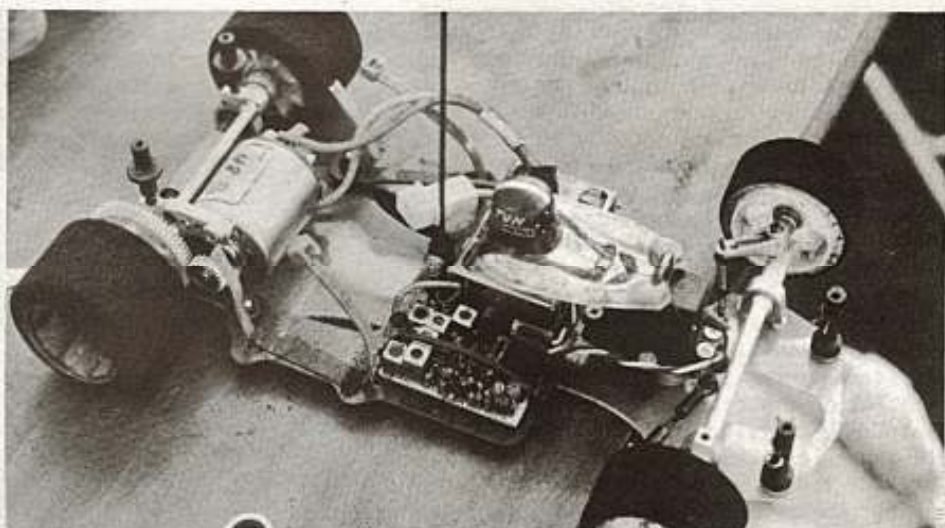
### Standard Semi Final Re-run

This time it was Kelly and Orton who broke clear of the start but after just one lap it was Frank Killam again who burst through into the lead with Bill Maisey and Jimmy Davis halfway down the field. But halfway through the race, Jimmy and Bill had caught right up to the two leaders,





Frank Killam and Mike Toland, but unfortunately Bill hit a dot sending his car off the track putting him out of contention. The top three positions of Killam, Toland and Davis, only feet apart stayed the same until the end. Would Jimmy's third place be enough? This Semi proved much the faster of the two, and both Jimmy and fourth place man Bud Bartos qualified for the Final.



Left; Jimmy Davis. Above; Interesting Japanese, AYK car, the Japanese team had trouble in lasting the 8 minutes.

### Modified Semi-Final One

Another two drivers expected to do well, found themselves on the grid, Ralph Burch Jnr. and Joel Johnson, and it was these two who led from the start. There was not more than 10ft. between them for the first seven minutes but all through the race they were held up a lot by back markers. With just 30 seconds to go Joel's batteries dumped (went flat) allowing Ralphie to win and Frank Killam, who had quietly worked his

way up, to get second place.

### Modified Semi-Final Two

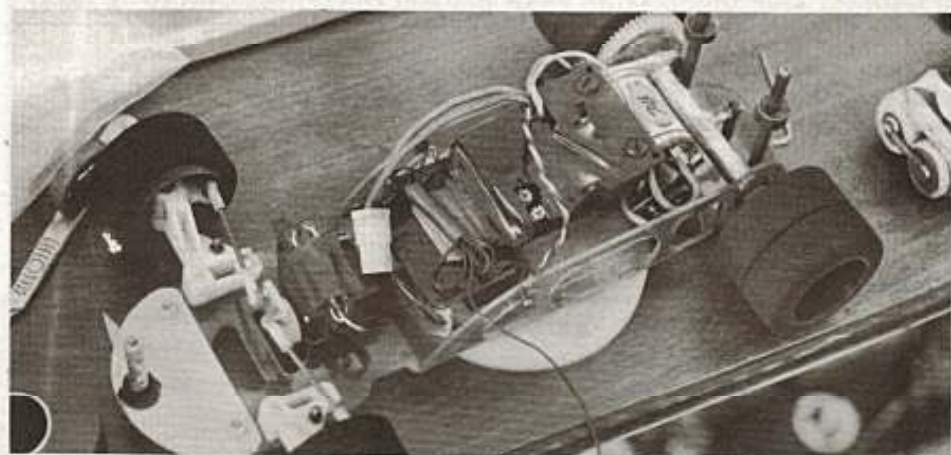
Mike Lavacot again had to contest the semis to make the Final which he duly did, leading right from the start just missing a 34 lapper by 0.6 seconds with Kevin Orton just two seconds behind.

### World Final Standard Class

With all the cars out on the grid the drivers were getting a bit annoyed about the persistence of photographers delaying the start, but very quickly the track was cleared for the first ever World Final. The large crowd went very quiet as the commentator announced five seconds to go. As the buzzer went Clausen and Burch made the first turn ahead of Fusco and Carbonell but Ralphie's car was not handling as well as normal and slowly dropped down the field, Clausen, Fusco and Carbonell were pulling away from the main pack when Carbonell's car was struck down by radio interference, leaving Clausen who was driving an incredible race, and Fusco on their own with Frank Killam three-quarters of a lap down in third place. After five minutes, Clausen had put nearly half a lap between himself and Fusco, had he over-gearred the car? At six minutes Repete Fusco seemed to be catching up slightly, at seven minutes Kent's lead was down to the length of the straight, but down in third place Frank Killam's car was being rapidly caught by Jimmy Davis. At eight minutes Kent Clausen's car crossed the line first in a time of 33/9.3 with Repete Fusco three seconds behind. Frank Killam's rapidly fading car just pipped Jimmy Davis for third place with Jimmy settling for fourth with Mike Lavacot two seconds behind Jimmy.

### Modified Class World Final

With Kent Clausen on the front row of the grid there was a definite possibility of him becoming double World Champion, but anything can happen in eight minutes. Jimmy Davis on row two deliberately under-gearred his car in case of any close finish, (he was getting used to them).



Above; the highest placed Lexan Monocoque car was Neal Francis' 'Phantom' car.

Below; Repete Fusco's Associated 'RC12i' featured in both finals, just missing out on first places.



Arturo Carbonell was hoping for a trouble free race and when the buzzer went the cars stormed the line only to bump and bash around the first corner allowing Mike Lavacot to take the lead, followed by Art Carbonell, Frank Killam and Repete Fusco. Mike Lavacot found the pressure too much, and through a series of errors dropped back to third spot after four minutes, allowing Carbonell to take up the lead well in front of Frank Killam. Repete Fusco's last late charge came to nothing as his cells dumped early, but Jimmy Davis who had under-gearred was catching up fast, past Lavacot, past Fusco, and catching Killam again. Carbonell, who had driven calmly stayed half a lap up on Killam and crossed the line first with Killam second and Davis third just half a second down. Arturo Carbonell must now be considered the best driver in the world, as he now is World Champion at both 1/12th and 1/8th scale cars!

The World Championship presentation banquet was held in the Grand Hotel, but was marred slightly as the first place prizes \$1,000 gold rings were not ready but Kent and Art were too happy to worry about that.

With the next World Championship being held on carpet in Europe in two years' time we might see the Europeans break the domination the Americans had at this meeting.

No new tricks were learned from the meeting, except the *Associated* battery

charging methods — for *Sanyo's* charge cells on 1ohm resistor to 9.5 volts, cool down in an ice bucket, then connect directly to a 12 volt car battery until the cells reach 120°C monitoring temperatures with a

thermo-couple probe inserted into the pack.

This method works well if you use new cells for each race as after charging by this method the cells are useless.

## Standard Class

### Final

Car No.	Pos.	Name	Laps	Time
1	1st	K. Clausen	33	9.3
3	2nd	R. Fusco	33	12.1
4	3rd	F. Killam	32	6.5
8	4th	J. Davis, UK	32	7.6
5	5th	M. Lavacot	32	9.9
0	6th	B. Bartos	31	4.0
2	7th	R. Burch Jnr	31	4.6
7	8th	M. Toland	31	11.3
9	9th	B. Hickman	30	0.5
6	10th	A. Carbonell	24	—

### Semi One

1	1st	F. Killam	33	14.5
2	2nd	M. Toland	32	2.7
5	3rd	J. Davis	32	3.6
9	4th	B. Bartos	32	6.7
3	5th	M. Hickman	32	13.8
6	6th	K. Orton	32	14.1
8	7th	N. Ishihara, Japan	31	8.5
0	8th	W. Maisey, UK	31	10.7
4	9th	C. Kelly	31	13.4
7	10th	J. Case	7	—

### Stock Semi Two

1	1st	M. Lavacot	32	1.1
2	2nd	B. Hickman	32	2.8
3	3rd	B. Berney	31	2.7
9	4th	R. Cavazos	31	6.3
5	5th	T. Neja	31	7.5
6	6th	C. Hastings	31	8.8
0	7th	J. Johnson	31	9.7
7	8th	F. Gjersoe	31	10.9
8	9th	K. Taheda	31	11.1
4	10th	K. Stephenson	16	—

## Modified Class

### Final

Car No.	Pos.	Name	Laps	Time
6	1st	A. Carbonell	33	3.1
0	2nd	F. Killam	33	8.4
5	3rd	J. Davis	33	9.1
2	4th	M. Lavacot	33	12.1
3	5th	R. Fusco	32	0.8
7	6th	K. Orton	32	11.0
8	7th	M. Hickman	31	0.7
4	8th	B. Berney	31	4.7
9	9th	R. Burch Jnr	29	—
1	10th	K. Clausen	22	—

### Semi One

2	1st	R. Burch Jnr	33	13.3
1	2nd	F. Killam	32	3.1
7	3rd	J. Case	32	4.3
5	4th	N. Francis, UK	32	8.2
9	5th	A. Wells, UK	32	11.7
0	6th	J. Johnson	32	20.2
8	7th	C. Hastings	31	5.3
6	8th	R. Lee	31	6.0
4	9th	L. Stevens	31	23.9
3	10th	R. Davis	21	—

### Semi Two

1	1st	M. Lavacot	33	0.6
6	2nd	K. Orton	33	3.0
4	3rd	B. Berney	33	8.1
3	4th	M. Hickman	33	10.3
2	5th	B. Hickman	32	0.6
9	6th	R. Cavazos	32	1.8
8	7th	K. Taheda, Japan	32	6.8
0	8th	W. Maisey, UK	31	4.4
5	9th	R. Husenaky, SA	31	6.6
7	10th	R. Tantschert	31	13.8

# Model Cars

# ELECTRIC GLOW IGNITION SYSTEM

BY  
DAVE  
DAY

THERE ARE PROBABLY more ways of energising a glow-plug than there are 1/8th scale car enthusiasts. A high proportion of these methods employ the 12v starter battery as the power source. The advantages of the method described here are as follows:

1. It supplies the glowplug with a constant 1.5 or 2 volts regardless of load.
2. The maximum current is limited, ensuring that a short circuit does not melt wiring or set fire to your starter box.
3. Both voltage and maximum current are adjustable to match your particular needs.

## Circuit

This employs an adjustable voltage regulator IC which drives a power transistor mounted on a heatsink. A selector switch programs the IC to give 1.5, 2 or 6 volts. The precise voltage given is adjustable by means of VR2, while VR1 sets the maximum current which is available.

Two different circuits are given to accept virtually any ammeter which may be available. This item may be dispensed with if you wish.

The load sensing resistor R7 is mounted separately since it can become quite hot at maximum current. Note that VR1 is mounted across this resistor.

## Construction

Prepare the veroboard, making the breaks in the land where shown. The size of board has been chosen to fit inside the heatsink fins (see Fig. 4). If you wish to adopt a different layout and mount the board separately, then it can be made larger.

Solder all the components in position, leaving IC.1 until last, and add all the wiring. If the 6v tap is not required simply omit that wire and use a two position switch (a toggle switch could be used in this instance). Mount TR1 to the heatsink ensuring that the base and emitter connections do not touch the heatsink. The collector connection is the body of the transistor and it will thus be necessary to take a connection from the heatsink to the 12v positive supply.

To make the connections between TR1 and the circuit board, solder short pieces of

wire to an adjacent hole on the appropriate land and then solder these to the transistor legs after passing them through the board.

Finally, wire up the unit as shown in the circuit diagram.

## Testing

First, check all connections and examine the circuit board for short circuits between lands.

If all is well, set VR1 to the centre of its range and VR2 fully anti-clockwise.

Select the 1.5v position and connect a 1.5v glowplug to the output.

After a final check, connect a 12v battery to the input wires, observing polarity.

If all is well, the glowplug should become warm or glow dimly. If so, adjust VR2 to give a bright orange glow. Try adjusting VR1: turning it one way should reduce the glow by limiting the current through the plug. This control should eventually be set no higher than is necessary to adequately light the highest current consumption plug you are likely to use.

Replace the 1.5v plug with one rated at 2v and switch to the 2v position. The plug