



MCR21 Engineering News December 2022



Dear Supporter

As Christmas approaches may I wish one and all a Happy Christmas and a prosperous new year from the MCR21 team and out Trust.

We have now completed our exhibitions and events for 2022, the final one being the Guild of Professional Cameramen's 50th anniversary held at the Steam Museum.

We have managed to find good dry indoor storage for MCR21 in Fifield, nr. Winsor for the winter months. The cost is manageable, from our reserves and we will bring it out again in early March.

Progress reports, interior

- The inside layout was divided into 3 zones by Pye with zone 1 at the front and zone 3 the rear.
- **Zone 1**, all the wooden framework is completed and mounting frames have been constructed for some of the technical equipment.
- The vision preview switcher (matrix) is under construction. It is a quite simple relay type with 5 BBC DA's as the output buffers. Just a lot of wiring, a second contact on the relays drives the indicators adjacent to the monitors.
- Yet to be constructed are:- The DA crate, test sawtooth & PLUGE crate, talkback junction box, SPG C/O crate, a big item is the portable 19" rack for the tape recorder.
- **Zone 2**, This is the middle section monitor stack and VE's desks.
- We made a decision as to how the pictures would be displayed. A great concern was the monitors CRT's, when worn out that would be the end of them, so we chose to use LCD screens to save the CRTs. This has been quite successful, if difficult mechanically to arrange the mounting rails.
- The CRT monitors are mounted behind the LCDs to show the original style at the rear and they can be moved forwards for special occasions.
- The top 3 monitors and 2 waveform monitors have been mounted, 4 monitors and waveform monitors to go.
- Yet to be fitted is the optical PPM and the correct synchronous clock need to be found.



Progress reports, wiring

- **Mains**. This is progressing well, almost all of the mains wiring is done and outlet panels made. One 5 way outlet panel yet to be made. It fits in the floor of the monitor stack. Also in this area are the "night" floor heaters.
- **Sound**, Almost all of this is original and back in place, the Tech tailboard is 98% done just the "Eurovision" connector to sort out.
- **Vision** The video is to be wired in the original BBC PSF1/2, kindly donated by Canford Audio, About 50% is in place but needs connectors (PL259) fitting. The Musa Jackfield is wired and installed. The matrix has 32 co-axes and the DA crate has 28+ cables. Small numbers in todays terms but PL259 and PSF1/2 are awkward.
- **Control** Most of this is yet to be made & fitted, A quantity of Black 20 core flexible cable is sought (BBC PSF20/1M would be good). These are mostly for the matrix control and indicators.

Progress reports, tech systems

- **AVR's** A big push on these, with most of the work being done by Iain, a new volunteer. These have been fully disassembled, metalwork resprayed, cleaned and variacs sorted. One is fully rebuilt and tested, the second is well underway with the third not far behind. Steve has serviced the servo amplifiers and all are tested and working.
- One 32A capacity AVR is installed in the A, B & C mains distribution circuits. The input voltage range is 190 – 260V and the AVRs keep the voltage close to 240V to prevent changes to the sound & vision signals. Two main problems are solved; the valve heater voltage is constant preventing changes in emission, and for the regulated supplies, HT & LT, the regulator input voltage window can be smaller reducing the regulator dissipation and the problems of excessive heat. Heavy units at 50Kg!

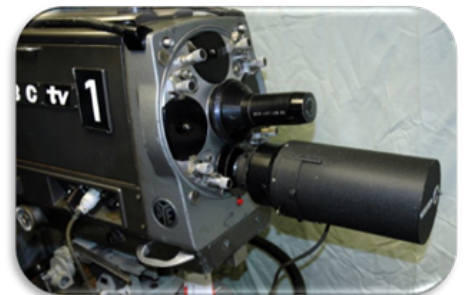


Progress reports, engine

- There have been some problems with poor running and starting. This seems to have a number of causes, we found that 3 of the "Lucas" replacement spark plug caps had gone very high resistance so all six were replaced with NGK ones, so far OK. Whilst this improved things the performance was poor and this was traced to a blocked fuel filter. A replacement improved things. However:-
- We think a lot of the problems stem from the original work at the body shop, where a modern electric fuel pump and the plastic filter was installed. The fuel tank had been sent off for restoration, but as the fuel filter quickly clogged this was not very successful.
- We would like to restore the fuel system to the original system with the mechanical lift pump which has its own filter.
- The carburettor is in dire need of servicing and this will be done during the winter period. **Help needed with these two items**
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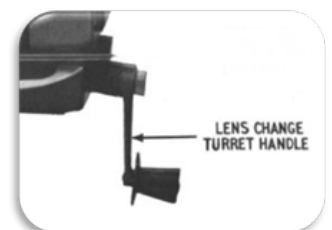
Progress reports, Camera, Pye Mk6

- The Camera is still missing a few items and some TLC.
- The turret change crank handle need to be made and the turret mechanism freed up.
- The replacement spoke for the focus control is underway.
- Still need to track down the circuits!! And the CCU-OCF cable. It is our hope to get it working.
- Nigel donated a diascope slide projector (pictured) to show a test slide on to the camera IO tube.
- Be good to find a viewfinder hood.
- 50+ of these were made, the location of 4 is known, what happened to the others?



Current projects:-

- Vision Matrix, underway. Big job
- Talkback Junction box, yet to be started, metalwork & wiring. Volunteer needed.
- BBC DA crate. yet to be started, metalwork & wiring. Volunteer needed
- Design and make 3 "battery regulators" to control output of the crude battery charger and protect the batteries.
- Servicing the 4 waveform monitors ready for installation.
- Servicing the two Fergusson SPG units. Complex units.
- Turret crank handle as above. Complex metalwork.
- Portable 19" rack for the tape recorder, rec amplifiers and tape ident unit. Big welding job.
- Fitting a Pye 20 way plug to 20 way cable, one end only. To BBC standards.
- Two vision engineers control panels to be made with matrix control buttons.



To be found:-

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- Roof extractor fan, 240V ex military circa 1955
- Philips tape rec/play amps, 2U high, to match the deck type EL3503
- 20 core flexible black cable



- Gresham Lion Pulse & Bar generator.
- Pye 14" monitor type 842844
- Small chrome plated latch to match the others, from 1960s several needed.



Fundraising

As ever there is a need to raise funds! The ongoing costs (storage, further restoration, transport, insurance etc.) still have to be met every year, so we would welcome donations to help this ongoing work.

Once the main Heritage Funded project is complete,
and the project grant is used up we will be on our own.

We are pleased to receive donations both as cash or equipment to sell for funds.

If you would like to support us, an ideal way is to set up a modest standing order direct into our bank account,
please contact our [treasurer for bank details](#).

Or you can use our [PayPal donate button](#)

Thank you for your support



Please pass this newsletter on to
others who might be interested.

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