

RESTORATION

Part One
Mark Navin and
Roger Brundle

There it is — your pride and joy! After months (days?) of searching, you've finally bought the vehicle you've always wanted, and '50's model just like Maigret of television fame.

You're now all alone with it as it stands (well, flops is more accurate) dejectedly in the driveway. The neighbours have departed amid gales of laughter, shaking their heads. Your wife has stormed inside and you just know it's baked beans on toast for dinner, and a headache for at least a month. But all that is trivial, as already in your mind's eye, you can see yourself carrying off the concours trophy next year.

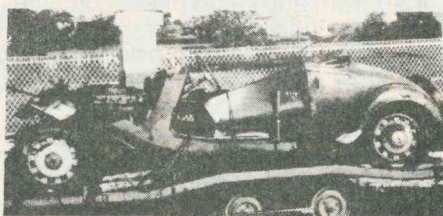
It's a nice dream, but not very realistic. Nobody, especially the novice, really understands the time, money, bad temper and skinned knuckles that will be expended on his 'love'. There are some aspects of restoring that *a.*, should be done professionally, and *b.*, no amount of expertise can overcome or change — it is and remains just plain hard work. Restoration is a labour-intensive occupation and so the amateur can save costs by doing a lot of the hard work himself. Your time is technically 'free', you pay the professional, but it is important to know what you are doing. Like all tasks, there are right and wrong ways and a number of do's and don'ts that can considerably reduce the bad tempers and skinned knuckles.

The purpose of this and future articles will be to give the novice some tips, clues, hints, guides, whatever on keeping the bad temper etc. to a minimum. They are not

intended as an exact blue-print, but rather an outline — though over the next two years, the Traction will be thoroughly covered.

There are a number of myths attached to restoring a vehicle, the most common being the 'restore as you drive' theory. Unless you can cram 30 hours in a day, are capable of mowing lawns, minding children, entertaining guests and rebuilding an engine at the same time without feeling the least bit harrassed, forget it! Put the car in the garage, and do it to a schedule of at least one night (or afternoon) a week. It is less wear and tear on all concerned, and in the long run, the end product will be better.

A second prevalent myth is that full restorations can be done cheaply — **WRONG!** Even assuming you can nullify the labour costs by your efforts, there are still two major costs that can't be offset. The first is an indirect cost and is usually overlooked, but is a necessary cost — a decent work area and good tools! The second cost is replacement parts and as the vehicle gets older, parts replacement gets progressively more expensive.



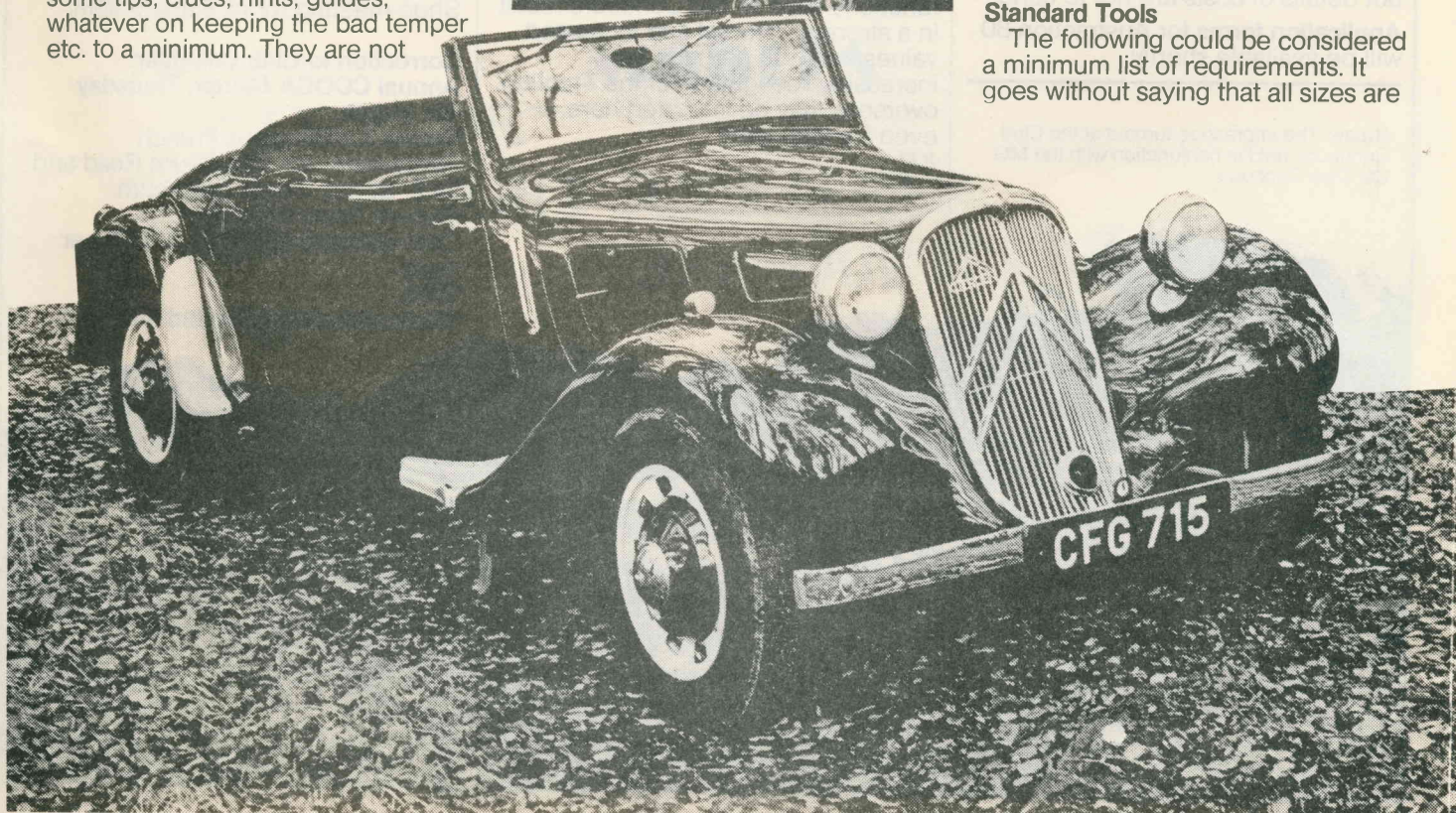
You can't restore a vehicle with a pair of pliers, a screwdriver, and sundry blocks of wood, in a driveway. It is not necessary to have a totally equipped workshop with every conceivable mechanics aid, but a little thought and judicious buying will considerably reduce your time spent, not to mention bad temper, etc. There are three basic areas that should be covered: work area, standard tools, and special tools for the Traction.

Work Area

Work area means not only adequate, covered storage for the vehicle so you can leave it without continuously uncovering and covering it to begin work, but also adequate space to move around and to store parts taken from the vehicle. If you have to continually play musical parts to find working space, you not only waste a lot of time, but you considerably shorten your patience. Apart from being covered, there should be a solid floor (e.g. concrete) as the car being 30 years old generates its own dirt and grime, without you rolling about in it as a permanent fixture. (It also tries your patience when you are trying to jack up the car and watch the jack disappearing into the floor.) Finally, power! — adequate lighting and power points near a sturdy bench kept clean and workable at **all** times! Equally important, of course, this Traction surgery should be within easy walking distance (i.e. own back yard) and not requiring any effort to reach.

Standard Tools

The following could be considered a minimum list of requirements. It goes without saying that all sizes are



Metric!

Ring/Open-ended spanners
7—23mm inclusive (Tractionists:
spare 12, 14 & 17mm; 2CV freaks:
spare 8 & 12mm);
Socket ($\frac{1}{2}$ "-drive) 8—26mm, plus
larger odd sizes;
Extensions and ratchet drive, not
essential but helpful;
Full screwdriver set;
Miscellaneous implements of
destruction — pliers, multi-grips, cold
chisel, and selection of variously
weighted persuaders, including one of
the soft-faced variety, set of pin
punches, 12" hacksaw.

Moving away from hand tools, there
are a number of other workshop
essentials:

Car stands;
Sturdy workshop vice (pref. 6");
2m length of water pipe, christened
The Barbarian — conquers anything;
jack (pref. hydraulic);
extension light (portable fluorescent,
though expensive);
parts washing tray with wire and
bristle brush;
copious quantities of cleaning rags;
copious quantities various sized
containers (flat margarine boxes
ideal);
storage shelving;
notebook and pen, for recording what
went where.
And, finally, a radio so you've got
music to skin knuckles by.

Special Tools

Luckily, technology has caught up
with the Traction, and while some
tools are still vitals to have, there are
many that can be dispensed with
altogether.

Tool no. 2200T, for example — how
many people still need a battery
terminal extractor! It's easier to holler
for a Marshall'. The club has a number
of special tools for hire, but even so,
you still need some of your own. The
list below shows the necessary in
pretty much order of importance. As
most members will not have these
tools, rather than get them made in
one-off's, contact the Spare Parts
Officer. If enough interest is shown, a
bulk order will considerably reduce
the price.

1. Front brake drum puller (and
accompanying 38mm/ $1\frac{1}{2}$ "AF socket);
2. Upper and lower ball joint
extractors;
3. Stub axle inner ring nut spanner;
4. Track rod ball pin extractor;
5. 40mm socket for cradle bolt nuts;
6. Track rod end adjusting spanner.
7. Bell-housing set screw spanner;
8. Torsion bar removal block.

There are obviously other special
tools, but their use is so infrequent
that it would be better to borrow them
than acquire.

The Beginning!

Having got organised, work area is
ready, tools (special and standard) all
laid out neatly, Pierre (you've already
named your vehicle) can now be
moved down the driveway and the
real work can begin.....

A Diesel Postscript

Mark Navin

The article on the Diesel Citroën
elicited no response which is
understandable, as there are probably
no complete models left in this
country.

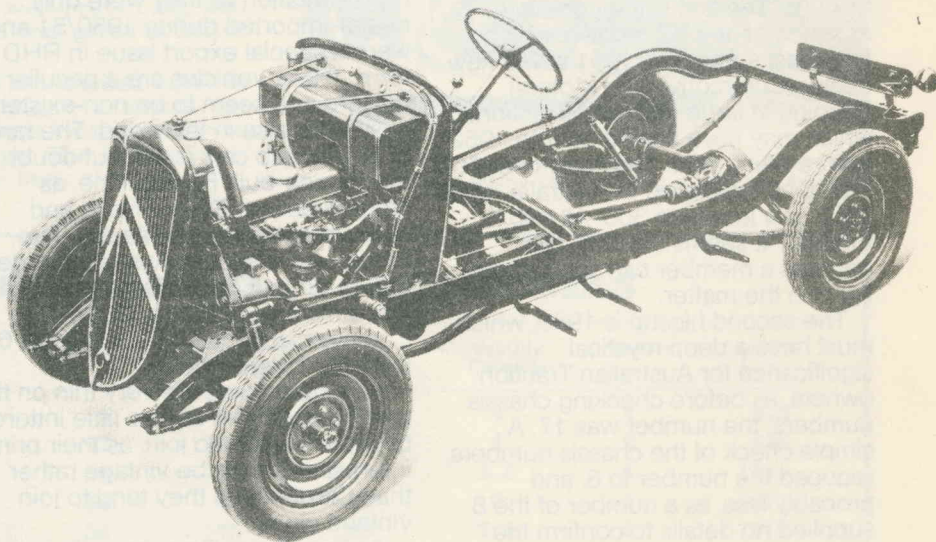
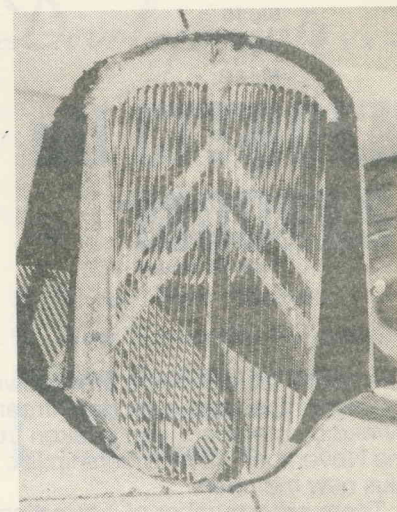
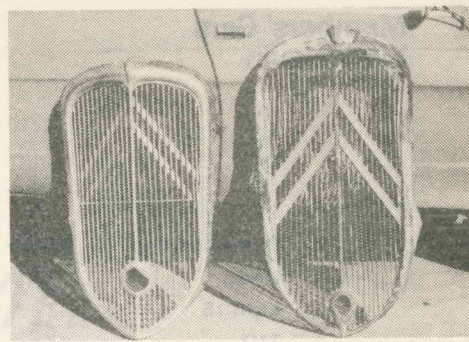
The recent Bendigo Swap Meet
however unearthed a tantalising clue.
Robyn and John Couche brought
back a grille ostensibly belonging to a
'30's Citroën', and obviously not a
Traction, though apart from size was a
close relation (see photo). First
inspection by the Couches seemed to
favour it being a Rosalie grille (it was
bought on that assumption). Closer
inspection and the lack of the Floating
Power emblem sent us scurrying to
the reference books.

There appear to be two possibilities—

1. That it is a Rosalie grille and one of
the last which was called the NH
series, as this model had what could
be called the prototype of the
Traction. However, specific mention is
made that the chevrons were hidden
behind the grille. Obviously this is not
the case in the mystery grill, as the
back view shows.

2. That it is the remains of a Citroën
diesel, and this seems to be
confirmed by a photo in Pierre
Dumont's 'Quai de Javel'. Not seen in
the comparison photograph is the
unusual side panels and these are
exact copies of the ones shown in the
rolling chassis. The photograph shows
a light utility chassis which was
originally available with a petrol
engine, but later (and by far the most
common) with a diesel engine.

So, any educated guess makes the
grille from a diesel Citroën circa '36,
and any leads as to the rest of the
remains of this vehicle would be
appreciated.



RESTORATION

Part 2
Roger Brundle
and Mark Norvin.

The conclusion of Part 1 left the budding Traction restorer frozen alone in space and time, with the latest neighbourhood joke.

Having deposited said joke in the by now well organised garage, there is a great temptation to immediately dismember it down to the last rusted self-tapper. This urge should be resisted until a firm game plan is formulated.

Let's have a look at the realities of restoration, and decide on what is required of the project.

The end result can vary from a full-blown ground-up 'concours' effort to a car which is roadworthy, reliable and of 'honest' appearance. Concours cars are fine for winning concours, but a hassle in almost all other aspects. They don't remain concours for long unless an inordinate effort is devoted to their care; decisions on where to park can be agonising, and every other road user suddenly wants to use the same bit of roadway as you. If your psyche can cope with this, then spend the time and money by all means; if not, then it's the housepaint and bullbar treatment.

There are, of course, those Traction found in such good original condition, that extensive restoration is not necessary or even desirable.

The two factors that do, of course, determine to a large extent the end result are available time and money. The two are inter-related in that money can be saved by extra expenditure of time, and vice versa. Most first-time restorers fall into the trap of seriously underestimating both. Ignoring the original purchase price of the car, it is unlikely that a full Traction restoration will cost less than \$3000, assuming that specialist jobs like panel beating, spray-painting and trimming are farmed out to professionals. In round terms, a breakdown of costs would run out at: mechanicals \$1200; bodywork \$1000; trimming \$800.

It is also unlikely that a full restoration will occupy less than 700—1000 hours of what to most people is laughingly referred to as 'spare time'.

Obviously, the figures given above are only guidelines, and subject to endless permutations. However, the old adage that you only get what you pay for fits very well with car restoration, and the end result will very much reflect the time and money expended.

As the major items of expenditure are in areas such as welding, panel beating, spray painting and trimming, where the restorer must pay a professional if he lacks the skills necessary, it is worthwhile enrolling in relevant courses offered by many technical education institutions to get a grounding in the basic skills.

Having settled on what end result is required, then a plan of action can be formulated. It is obvious that there must be logical order of progress — e.g., there is no point in trimming a car before it has been re-sprayed.

The following list is a typical sequence of events, assuming a full restoration. It can obviously be shortened according to what is required.

1. Dismantling.
2. Hull rectification — cutting out rust, straightening hull and repairing dents, cracks, etc. Repaired areas into primer and engine bay area into final colour.
3. Mechanical rebuild — overhaul and re-fit mechanical components to rolling chassis stage.
4. Repair detachable panels (inc. grille) — as for hull: cut out rust, repair dents, cracks, etc. Trial assemble to hull to check for fit, and adjust as necessary. Refit doors.

5. Prepare and finish painting hull and detachable panels. Rechrome grille, and other brightware. Refit panels, grille to hull.

6. Rewire, overhaul electrical components and refit.

7. Refit glass and trim interior.

8. Detail car — refit bumpers, doorhandles, number plates, nodding dog on back parcel shelf, etc. Touch up inevitable battle scars in paintwork, and polish.

It is obvious that many of the events can take place concurrently whilst others are dependent of some events already having been completed, e.g., if the engine is to be rebuilt 'outside', then this could be done while work was progressing on the hull.

The trick is to ensure that things come together at the right time. A planning method that can be used is that known as the 'Critical Path Network', where all the events are listed and then arranged in a logical network illustrating their inter-relationships. From the network, it can be deduced which events are critical to the completion of the project in the minimum time.

An excellent method of planning it you are into that sort of thing, but it implies that sufficient funds are available as and when required.

In the world of car restoration, kids shoes tend to take a priority over new pistons and sleeves, and progress is generally determined by availability of cash. However, the point that is being made is that some sort of plan should be made before starting, however basic. Also, if you are planning a restoration, then it is a wise move to obtain those parts that you know will have to be replaced, before work commences. Spares availability is always going to be erratic, notwithstanding the efforts of clubs such as CCOCA, i.e., buy before rather than during a restoration.

