

## THAT'S NOT RIGHT!

*Clive Elliott explains why his military vehicle is grey and how Humber trucks got armoured bodies.*

Having displayed a prototype Shorland armoured car that was painted grey, I was intrigued to find out if colour prejudice was still rife, I am afraid it is! I wasn't sure whether the lack of interest and on some occasions hostility, was because it was based on a Land Rover. Now that I have a pig painted grey, I realise it is the colour that is the problem for many people attending shows where nearly everything else is painted green. I can understand this as we see many embellishments to vehicles that are clearly wrong that reflect some fantasy of the owner. I suppose I would be cautious about the historical accuracy of a grey pig if had seen my vehicle enter the showground for the first time. Some have suggested that the present colour scheme of Light Admiralty Grey is merely the undercoat for a more normal colour scheme that will be applied later. This is not the case as the correct undercoat for a vehicle of this era is Dark Admiralty Grey.



*A strange looking Humber Pig painted in Light Admiralty Grey.*

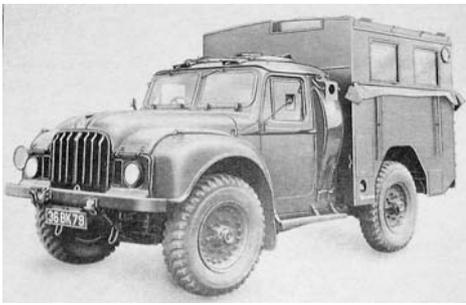
The explanation is that this Humber pig is being restored to the specifications of a vehicle that saw police service between 1958 and 1970. The purpose of the article is to describe how the first armoured Humbers evolved and how those in police service differed from those that were later made for the Army. The problem of restoring my pig has been that after it passed into army service for a second time most of its special features were removed when it was made into a Mk 2 pig.



*The same pig five years ago when I bought it.*

The FV1600 series of Humber 1-Ton trucks were produced by Rootes in the period 1952 to 1955. They were not as one 1983 training manual states introduced into service in 1945 to 1947. The ideas for a standardised 1-Ton truck must have been fermenting by then, a number of variants were conceived that never went into service. These included an ambulance (FV1603), water tanker (FV1605), breakdown truck (FV1606), staff car (FV1607), and truck with soft cab/removable hard top (FV1608).

Of the 3,700 Humbers produced it was intended that 400 were 'wireless light' trucks with a box body at the rear and designated FV1604. Other roles that had been envisaged for this body were workshop, cypher office and computer testing. These did not appear in service although a later modification was the command vehicle for the Corporal missile.



*Truck, 1 Ton, CT, 4x4, Humber, Wireless Light.*

Of the other Humbers, 2100 were intended as FV1601 trucks and 990 were intended as the FV1602 FFW (Fitted For Wireless) trucks. The principal differences being that the FV1602 was supplied with a two-speed dynamo and fittings to accommodate wireless installations.



*Truck, 1 Ton, GS, Cargo, 4x4, Humber.*



*Truck, 1 Ton, GS, FFW, 4x4, Humber.*

A vehicle fitted with a 2-ton winch was identified by FVRDE with the suffix 'B'; nearly all the cargo trucks had a winch. Of the FFW vehicles, 650 had winches and thus designated FV1602(B). Those 340 FFW vehicles with no winch were designated FV1602(A).

The costs of manufacture varied with time. In April 1954 the first 250 of the FV1601 with the winch cost £4,250 each but by August 1954 this had fallen to £3,350. Whereas the FV1602(A) had cost £3,250 in March 1952 this had risen to £3,500 in February 1956 and at the same time the winched version came in at £3,650.

As we all know the Humber pig is the armoured version of the FV1601 and FV1602, often thought of as an early 1960s vehicle being designed and built in a hurry. This is not true, in fact Sankey signed a contract to produce an armoured version designated FV1609 in 1952. The armoured truck was to be based on the FV1602(A) would fulfil a range of roles for R.A., R.A.C., R.E., R.S., R.E.M.E. and infantry. There were to be 17 different set ups to fulfil these varied roles. For development purposes a wooden mock up was built from a GS truck.

But it was not until June 1956 that the first three prototypes had been issued to the War Office for troop trials. By the end of the year the remaining vehicles from the pre-production batch of twenty vehicles entered trials as far away as Malaya and Cyprus.

Although the FV1609 had an armoured body there was minimal protection for the crew in the rear, where there was only a canvas cover on hoops. The driver and commander did at least have a protected cab and drop down visors. Although they had a metal roof, it was only 18-gauge sheet steel, which sloped at the front aspect. Later prototypes had thicker armour on the roof and did not slope down.



*The earliest known picture of an early FV1609.*



*Emerging from water trials sporting an 'RGX' registration of FVRDE.*

The later prototypes have a flat, but thicker front to the roof. The rear light cluster is no longer mounted on projections, but mounted on the side lockers directly. The single rear door now had provision for two jerrycans, bringing the total fuel capacity to 40 gallons. The windscreen wipers are fitted directly to the windscreens and not to the vehicle body. Originally there was only one vacuum wiper, which was fitted to the driver's windscreen. A detachable linkage to this operated the wiper on the passenger's windscreen. The windscreens are removed when the front visors are lowered from their supporting struts. Vision through the visors is through a No.17 Periscope, although in the original specification there was only a periscope for the driver.

The hatches in each door have no vision holes. The rather long handles in the hatches easily damaged the wing mirrors when the doors are fully open. This was corrected on the later pig by mounting the mirrors on the hinges so they moved with the door.

The headlights, front turn indicators and sidelights are mounted in an oval guard. This has square mesh at the front and diagonal mesh on the side aperture. This permits the old style fluted lights to be seen obliquely. At the rear, fluted lights are again used rather than the more familiar Lucas FV pattern with a screw on glass lens. The rear lights are all red. One pair are tail lights, the other serve as turn indicators that switch to stop lights when the foot brake is applied. Vertical bars are provided each side for mounting pioneer kit and holders for a water jerrycan and oil can.



*Later version of FV1609 with a single slope on the front cab armour*



*Still on assessment with FVRDE*



*Note the old style rear lights, both pairs are red.*



*Wading trials on the beach.*

Rear lockers are fitted over each rear wheel arch but they are shorter than on the later pig. The only specified items to be carried in these was a 4-ton jack on the near side and a tool box in the off side lower locker. Between the two front seats there was to be an occasional seat and a roll-down canvas flap to separate the cab from the crew compartment. The rear compartment was to have metal channelling to allow approved kit to be mounted, although early photographs clearly show that wood was used.

In 1957 there were plans to convert FV1601, FV1602 and FV1604 to the FV1609 design. FVRDE had also designed a bolt-on armoured roof for the cargo compartment as an upgrade to the original vehicle.



*Humber RGX 493 now with the FV337270 bolt-on roof.*

The bolt on roof was fitted with rails to support a canvas cover to help reduce heat in the tropics; it was to be lashed down using the hooks for the original canvas roof. An additional aid to cooling were the struts around the roof hatches to allow a limited degree of air circulation without the loss of security by opening the hatches fully. Further cooling could be achieved by removing the windscreens, which were then carried on the inside of each door. This must have been rather awkward and on the later pigs the windscreens were carried in a frame behind the driver's seat.



*RGX 493 from the rear. Note the winch that indicates this vehicle predates the 20 prototype vehicles, which were all FV1609(A) i.e. without winch.*

The rear of the roof hinged outwards and was supported by a strut. It must have been easy to hit your head on this flap which wasn't even horizontal. It would also have been a bit of a scramble as there was no rear step on these vehicles.



*Note: Strut on left for securing the roof, bent fuel vent pipe on left being used to hold a bunch of keys, clamp on right door is to lock flap when closed as the proper catch at the top is broken, driver's door handle wedged in pipes on right that supply tyre pump, air filter and clutch reservoir.*

In 1958 plans had been drawn up to convert the FV1601 to the FV1611 and the FV1602 to the FV1612. In other words the GS trucks and FFW trucks were now to be converted into what has become known as the Mk 1 pig. Interestingly there was still the belief that some of the trucks would be converted to the FV1609 design without an armoured roof.

By September 1959 production of both FV1611 and FV1612 was well under way by Joseph Sankey and Royal Ordnance Factories Nottingham with a target of 1500 pigs. Fittings were under development to convert either an FV1611 or FV1612 to an ambulance role as a FV1613. User trials for the FV1613 commenced in May 1960.

The production run of FV1611 and FV1612 was nearing completion by August 1960. Attempts to protect the crew against 4-lb. anti-personnel mines meant an increase in weight of 3 cwt but the user rejected this and a more modest protection weighing 1 cwt was under development.

The cost of converting a FV1601 to a FV1611 was estimated at £6,000 and for a FV1602 to FV1612 £5,700. This was at a time when the cost of the B60 engine was £730 3s 0d. The estimated cost of the conversion of the FV1602 to the 20 FV1609 prototypes was £5,950. In fact the actual cost was £5,650. I imagine one of the few occasions in the history of human conflict when a defence project actually cost was less than estimated.

Of the twenty FV1609s, ten were recycled into production pigs, but the other ten were retained in their unmodified state and struck off census in September 1958. They were not scrapped but were to pass into police service. During the 1950s many parts of the world were in a state of conflict and Northern Ireland was no exception. The recent 'troubles' are generally taken to mean events from 1969, but there were a series of IRA cross border campaigns. In 1956 it was a 'Border Campaign' that indicated a need for the RUC to acquire a large number of military vehicles from the UK Government to patrol the border with the Irish Republic. By 1957 this had included Daimler Scout Cars, International half-tracks, and various types of Bedford lorry. Many vehicles retained their military registration numbers as they were leased from the War Office.



*Bedford MW registered 25 RG 99 in RUC service.*

In August 1958 the Ministry of Home Affairs purchased the ten Humbers, they were issued to the RUC in October 1958. These were not leased vehicles so they were allocated civilian Belfast registrations from the sequence 2986 OI to 3001 OI. The country RUC Reserve Force used eight of the Humbers. They were more popular than the half-tracks as they were more manoeuvrable.



*My FV1609 near Favour Royal, Aghnacloy, note RUC Dingo far right.*

At the same time the RUC had developed a prototype armoured car based on a commercial Commer chassis. By December 1959 manufacture of the Commer armoured car had commenced, fifteen vehicles were made at the rate of one a week. Some of these Commers were made into APCs, water cannon and prison vans. At one stage an APC was fitted with a Saracen turret, but this was abandoned, as it was far too heavy for the roof to support. The Commers proved very popular as they not only had a proper roof but also were roomier. This was considered important as one report stated that "police are usually taller and heavier than the average serviceman."



*Two Commer armoured cars.*

Running parallel to the Commers was a plan to upgrade the Humbers. It was intended to phase out the four half-tracks and finally write off the six armoured Lancias, which were no longer cost effective to repair. Considering the Lancias had been in service since 1916 they had provided good value for money. Their armour plating was to be used on ten new Land Rovers, which had just been ordered. It was acknowledged that any upgrading programme for the Humbers would be very expensive. In August 1959 the RUC received drawings from FVRDE of their bolt-on roof for the FV1609 and compared them with the design of the FV1611, which was now in production for the Army. The drawings proved difficult to interpret and a decision was deferred.

Official correspondence in March 1960 revealed that although the Commers were very reliable, the Humbers were not. At any one time there were two to three Humbers in the workshops for repair. This seems to be due to difficulty in obtaining spares and there was an anxiety that spares would become even more of a problem as the FV1609 had become obsolete from Army service. What didn't seem to be appreciated was that there was a high degree of commonality with the rest of the FV1600 series, which were still in Army service. Anyway as a result of this anxiety an order was placed for three more Commers. The border security situation had improved and it was hoped that one or more of the Reserve Force platoons could be disbanded then it would be balanced by one or more Humbers becoming defective.

Curiously another letter written ten days later indicates an enthusiasm to commit the Humbers to an upgrading programme. The FVRDE bolt-on roof was fitted to an Army FV1609 and sent to the RUC. It was not liked but the prospect of a new welded roof for the FV1609 was considered the way to go. The Army provided a pig for assessment for both the Ministry of Home Affairs and the RUC. Unfortunately there was some confusion as the Army provided a FV1612 for the Ministry but sent a FV1611 to the RUC.

It was requested that the FV1611 be loaned for a month and compared with a basic FV1609. The engineering firm Belfast Tool & Gauge Co. Ltd. then made a technical assessment of the work needed.

The Army FV1609 with the FVRDE bolt-on roof (32 BK 87) was to be returned CVP Long Kesh, unfortunately the FV1611 (07 BK 65) was returned by mistake. Anyway by early May the FV1611 was back in RUC hands and was to be driven to all the Reserve Force platoons for assessment and suggestions.

On 2<sup>nd</sup> June 1960 the assessment had been completed. The improvements required were:

1. Windscreen visors with slits similar to Commer armoured cars.
2. Bench seats down each side of rear compartment with storage space underneath. A locker to accommodate radiotelephone behind front two seats and linking the rear bench seat. The top to be padded to allow use an emergency seat.
3. Larger rear step.
4. Welded on armoured roof similar to FV1611 with similar firing ports.
5. Double rear doors with firing apertures, instead of single door.
6. Tip up seats on rear doors as knee rest for gunner. (This was not adopted)
7. Door flaps with apertures. (the FV1609 flap had no apertures)
8. Water channels over the side doors.
9. Observer's seat to be moved to right and lowered. (This cannot be moved down as it is determined by the battery boxes under the seat)

The FV1611 was retained for a further month and on 27<sup>th</sup> June 1960 was displayed beside an RUC FV1609 for comparison. Unfortunately the RUC Humber (2991 OI) broke down and had to be towed to site. Four engineering firms were invited to examine the vehicles and submit a tender for the conversion of the ten Humber. Only two firms responded Belfast Tool & Gauge Co. Ltd. and Messrs Musgrave & Co. Ltd. The contract to convert the Humber was awarded to Belfast Tool & Gauge.

After this point it has been difficult to obtain the technical details needed to restore my vehicle. There have been differing opinions as to the colour scheme used. In 1958 on acquisition they would have been Deep Bronze Green, it was not until April 1961 that they were painted grey to match the Commer armoured cars. In October 1962 it was decided that the Commer and Humber should be painted Olive Drab Green. In November and December the vehicles were repainted allowing ten days for each vehicle. It has been suggested that this was an economy measure by just using surplus army green paint, the counter view is that there was a tactical reason as these were expensive prestige vehicles.

As far as my restoration went I had a FV1609 that no longer resembled the RUC vehicle it once was and looked much as any other Mk 2 pig. What colour to paint it was a triviality when I lacked firm evidence of the detail of the conversion. Very few pictures of RUC Humber have been published and when they are, they lack detail as can be seen from this cutting from an unknown newspaper.



*3001 OI on duty at Killeen near the border with the Republic in 1966.*

The exception was one Humber, which always seemed to be at the front of any riot situation, unfortunately this was not one of the original FV1609s. In July 1962 Humber 2986 OI was written off it was replaced by a standard Army FV1611 (13 BK 01) and then registered as 3071 EZ. This vehicle of course already had an armoured roof; it required only a few modifications to make it suitable for RUC use.

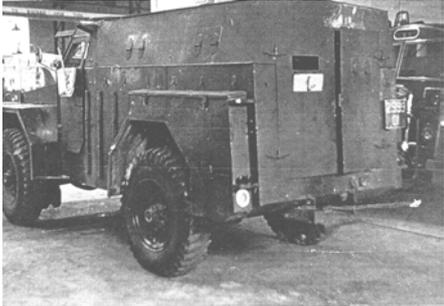
These consisted of Commer type visors and fog lamps. There are quite a number of good photographs of this vehicle, I thought at least I could construct the visors accurately. Having constructed the visors with some difficulty, it suddenly dawned on me that they were of a different size to the FV1609s as the window and wiper arrangements are quite different. This was brought home to me as I found a picture of my own vehicle 2996 OI with the visors down during the 'Battle of the Bogside'. Unfortunately the owners of the copyright have declined my request to reproduce the picture here.



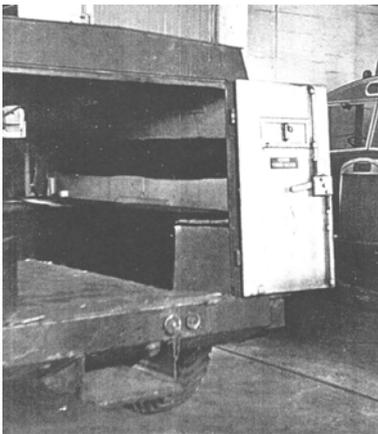
*3071 EZ the RUC modified FV1611*



*A smashed wing and daubed in paint this FV1609 is in the company of a Commer and Shorland to the right.*



*2999 OI in RUC workshops.*



*The notice on the door says "MIND YOUR HEAD".*



*2999 OI (originally 32 BK 90) at RUC workshops August 1969.*

Many Army pigs were fitted with barricade rams and although the Army was responsible for many internal security innovations it was based on a RUC development. The RUC ram was only fitted to those Humbers that were likely to be used at the front line of riots. The ram was angled to plough through barricades and its height above the ground was adjustable.



*Barricade ram set to lowest setting.*



*2989 OI with FV1611 type headlight covers and number plate now displayed on near side.*

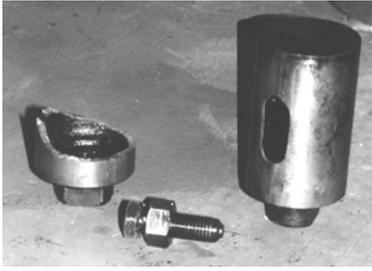
In 1970 following Baron Hunt's report into the policing of Northern Ireland all armoured vehicles were withdrawn from police service and placed into storage. They were later introduced into to Army service and allocated registrations in the 27 BT \*\* series, mine was registered as 27 BT 95. The original Army registration 32 BK 74 could not be re-used once the vehicle was struck off census. In 1973 it was extensively rebuilt to make it into a Mk 2 pig.

It is always a problem trying to gauge the colour of anything from a black and white photograph. Fortunately notes taken in 1969 at a visit to the RUC workshops reveal that the Commers, Shorlands and Humbers were painted 'Rustoleum Green'. This is a type of paint that has anti-rust properties, what I am trying to establish is how many types of green there were at that time. Although I have some colour photographs they are deceptive as the same vehicle can be seen to have a different shade depending on the amount of light falling on the vehicle and the amount reflected to the viewing angle of the camera. I have an ex-RUC Shorland, which striped back to its original green appears as a matt dull emerald green rather different from the Rustoleum green as it appears in the photos. So for the moment I thought I would paint it grey, as it would have been in 1961-62. Some have suggested that the colour I have used might be too light. The colour I chose was Light Admiralty Grey as it seemed to match the colour pictures of the Commers. I found this grey painted on the inner side of a pig wheel; if this was undercoat it should have been painted over and besides undercoat was required to be Dark Admiralty Grey. I also found traces of the grey inside the pig underneath the aluminium paint. It would not have been used as an undercoat as the flammability of the inside paintwork would increase, aluminium paint should go straight onto metal with no undercoat and these must have been traces that were overlooked.

Apart from the extensive metalwork that was needed, the pig had two serious automotive defects, no rear wheel drive and a defective engine. The pinion wheel in the rear differential was mangled up, to effect a change I would have to remove the drive shafts and I considered it easier to change the complete rear axle assembly. The other problem was the engine was weak and made unhealthy noises. I found the problem to be a shattered exhaust valve tappet as the result of drawing in stale fuel. I was aware that modern fuel soon deteriorates but I didn't realise how much damage it could do. The problem was that I hadn't realised that the previous owner only used one fuel tank, unfortunately I switched in very old fuel from the unused tank.

I was told the fuel gauge sender didn't work, but I later found that it did. But it was wired so that it was measuring the fuel in the tank you were not using! This seemed curious as the wiring assembly looked all very original, the penny dropped when I read the FV1609 user handbook. The FV1609 fuel pipes were plumbed so that the fuel supply switch pointed towards the tank you were using. All very logical but in fact on the FV1611 the arrangement is the other way around presumably because the plumbing to the switch is easier that way

around. I believe that when the army rebuilt the pig to Mk 2 standards the fuel pipes were replaced but nobody realised the wiring was different on the FV1609. So all the previous owners including the army have been measuring the fuel in the tank not being used.



*Shattered exhaust valve tappet on the left, replacement on the right.*

The conversion provided by Belfast Tool & Gauge although practical lacked the sophistication of the standard Army pig and gave it a rather home-made appearance. Many fittings are ready-made either of industrial or domestic origin, which took some tracking down some forty years later. Much scouring of photos with a magnifying glass has helped determine the large number of differences between an RUC FV1609 and the standard Army pig FV1611. So far I have found 57 differences, the most obvious can be summarised as:

1. Commer type visors with horizontal slits, no periscopes.
2. Rear doors open 180 degrees and have no external handle.
3. Rear step central, larger & rigidly fixed.
4. Side lockers extend to only just beyond mid wheel arch and no drop down piece at top.
5. Different windows to pig, wiper mechanism fitted to detachable windscreens, not to vehicle body.
6. Rear roof welded on, has no rails, as canvas cover not required.
7. Rounded headlight mesh, fluted sidelight fittings front & rear, rear turnlights also serve as stoplights.
8. Wing mirrors mounted on front body, not on door hinges.
9. Side door hatches have observation hole further to rear.
10. Pistol ports drop fully down when open, catches as per windows with 'eye' rings.



*RUC FV1609.*



*Army FV1612 with incorrect registration at Bovington.*



*RUC FV1609.*



*Army FV1611.*



*RUC FV1609.*



*Army FV1612 painted sand at Bovington.*



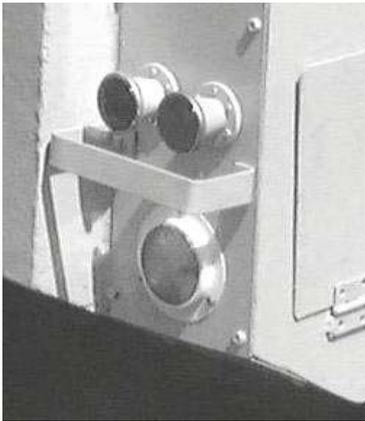
*RUC FV1609, note wide opening doors.*



*Army FV1612, doors open fully.*



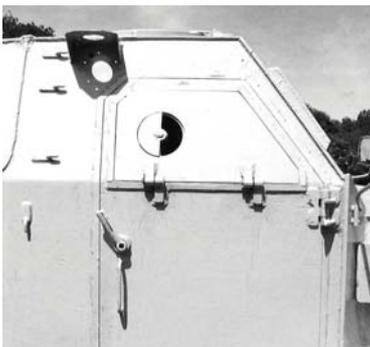
*RUC FV1609, early pattern side lights.*



*RUC FV1609, early pattern side lights.*



*RUC FV1609, note wipers fitted to windcreens not to body.*



*RUC FV1609, observation hole in door.*



*Part of the vehicle's plate showing FV1609A and contract 6/VEH/20674*

I have found that light grey is a very impractical colour, grubby hands and overalls soon make a mess. So I think I shall let the restoration evolve as it did as in service, the next time I paint it will be drab olive, the time after that Rustoleum green and then perhaps NATO green when it went back into army service. One thing I will not be doing is taking the restoration full circle by making it into a Mk 2 pig. Does anyone want 2 tons of Mk 2 armour before I change my mind?

#### Acnowledgement

I would like to thank Darren Parsons for his help with the more difficult metal work and former members of the security forces for their help in providing the pictures.

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#### Update

After a season of displaying the pig in its grey format and suffering widespread disbelief about the colour, I have now changed it to green. Despite documentary evidence, both photographic and written, there was either denial that it was green or the assertion that the colour was too light. The grey I used was Light Admiralty Grey and matched the colour I had found inside the vehicle. Additionally people can recall seeing RUC vehicles in more recent times when a dark slate grey was used. The green I have painted it is only a stop-gap to avoid silly comments. The colour used is not quite right but I chose it to be distinctly different from any colour used by the British Army. I have been unable to source the correct Rustoleum Green so I will set about matching it to a sample that I have uncovered on my ex-RUC Shorland.







For those interested in the fine details, here is a list of differences that so far I have been able to identify between the RUC modified FV1609 and the standard issue Army FV1611 Mk 1.

1. First aid kit above fuel filter, not in driver's door.
2. Tyre pump horizontal at higher level just below roof slope.
3. Brake reservoir at higher level above driver's window.
4. Longer grab-handle & horizontal below passenger's window.
5. Front registration plate on driver's side.
6. Horn mounted higher.
7. Commer type visors with horizontal slits, no periscopes.
8. Side door has hooped door handles.
9. Side door handles point upwards.
10. Side door flaps, catches fitted on body not flap.
11. Side door flaps, handle longer & central.
12. Side door flaps, pistol port further to rear.
13. Side door flaps, pistol port hole is larger segment.
14. Side door flaps, pistol port locked with large wing nut.
15. Side doors protected by guttering.
16. Pistol ports are flush with body.
17. Pistol ports have square corners.
18. Pistol ports drop fully down when open.
19. Pistol ports hinges are flat.
20. Pistol port catches as per windows with 'eye' rings.
21. Wing mirrors mounted on studs on both sides on front body, not on door hinges.
22. Fog light (sometimes) at front nearside wing mounted high or low.
23. Rear doors recessed level flat with body.
24. Rear doors have square corners.
25. Rear doors open 180 degrees.
26. Rear door hinges flat.
27. Rear door latching mechanism on offside door.
28. Rear door on offside has no external handle.
29. Rear door on nearside has no lock, latch or handle. Held in place by offside rear door being shut last.
30. Rear door on offside opens by lever down opposite to FV1611.
31. Rear step central, larger & rigidly fixed.
32. Rear door frame has padded head cushion.
33. Rear offside door has warning sign "MIND YOUR HEAD".
34. Reversing light rear offside locker.
35. Side lockers extend to only just beyond mid wheel arch.
36. Side lockers do not have hinged side flap at side of top.
37. Detachable windows held at top by large turn locks, on lower rest on blocks with screw adjusters.
38. Vacuum wiper mechanism fitted to detachable windscreens, not to vehicle body.
39. Roof has no rails, as canvas cover not required.
40. Roof & top sides of armour welded on with protruding weld seams.
41. Roof welded with continuous seam rather than spaced angle pieces.
42. Roof weld to cab armour curved at junction
43. No vertically welded bar where side body armour changes from parallel to sloping in by cab.
44. Rounded headlight mesh covers mesh front, solid edges except XPM at outer sides.
45. Fluted sidelight fittings front & rear.
46. At front white turn lights, not amber.
47. At rear turn light is red & combined in same circuit as stoplights.
48. Warner socket cover holder mounted adjacent to socket, on FV1611 it is underneath sloping rear.
49. Antenna base plate outer edge has no vertical side, outer horizontal corners bevelled.
50. Antenna base plate modified to accept commercial type RT base & VHF whip.
51. No protection frame over power junction box, (front left inside cab).
52. No power junction box for radio, instead supplied via cable through floor behind driver.
53. Rear bench seats arranged in 'U' configuration, housing RT equipment in middle part.
54. Rear bench seats have vertical wood sides, storage space under seat.
55. Rear bench seats complimented by padded back rests
56. Fuel tank selection switch connected (as per original FV1609s) opposite way around. More logical to use but more awkward for fuel pipe plumbing to switch.
57. Two-speed generator despite only being APC role.