



Setting up a Hoyle suspension upgrade on an RV8

When Angus Munro was considering the idea of putting the Hoyle Engineering IRS upgrade onto his RV8 he did as much research as possible before deciding to go ahead. He found the excellent article on fitting the upgrade by Steve Newton of Clive Wheatley mgv8parts published in Safety Fast! December 2009 was helpful but felt there was a distinct lack of information regarding the set-up of the system and moreover, what to expect of it. Here Angus describes his experience with setting up his Hoyle IRS.

Initially I was happy with my refurbished car but as time passed I started to feel that something was not quite right. The rear of the car would dip under acceleration and the rear left corner would dip under a right hand turn, and the right corner would dip under a left hand turn of course. The car was simply out of balance with the soft IRS rear and the original brutal front suspension, now refurbished with Clive's wonderful polyurethane bushes keeping it tight. What was to be done?

Slowly, but slowly, it dawned on me that simply bolting the IRS onto the body shell was only the start of the work. 'Set up' became the key two words in my thinking and, as I began asking others what they had done, I began to realise that everybody has a different opinion. Several opinions indicated that soft springs and hard damper settings were the answer but, as time went by, and I engaged my own substantial engineering education, it began to dawn on me that the springs take the load and the shock absorbers or dampers, err well, simply dampen the springs from subsequent oscillation. It took contact with John Hoyle, as I should have done in the first place, to ask about the dipping tail and rear body roll.

"Suspension set up is a very personal thing Angus. You have to find what is right for you. Why don't I send you a set of stiffer springs? You can try them out and see if your idea that the rear is out of balance with the front is right." I learnt that the system is really designed for the MGB and that John has a redesigned front suspension for that model. Astonishingly, John tells me that he gets very little feedback from RV8 customers. I wanted to go from the original 300lb/inch springs to a 400lb/inch set. John, in his usual quiet and patient way, advised a 350lb/inch set. "See how it goes Angus. You are experimenting here."

Sometime later I had the new springs on the car and went for a short test drive. Instantly the car was different, very different, and I felt a trickle of electricity in my spine. However, there was still some way to go. I had set the springs to the bottom of the dampers and the rear ride height had settled to minus numbers by the time I got home. Following a session of winding the springs up to get the ride height correct my electricity was exporting to the National Grid. At last! At last I was getting it, this John Hoyle IRS experience. After five years of ownership my car now corners without body roll, it accelerates without tail dip and the rear is silent, eerily silent.

Final set up involved getting the Camber and the Toe-In angles checked, re-shimmed to adjust to the correct angles and then the front Toe-In angle checked and adjusted to suit. With the car empty and a full tank of fuel there should be a small negative Camber Angle to the rear wheels, about half a degree, and both the front and the rear wheels should have Toe-In, rear to about half a degree with the front wheels then set to the book value of 50 minutes, +/- 20 minutes, Toe-In.

Many people have talked to me about the IRS and I know that some will continue to argue for the 'soft spring – hard damper' setting solution and perhaps be even a little offended that I disagree. Take no offence when I tell you, with good natured humour intended, that you are wrong and that I am right. I must re-quote the words of John Hoyle, who knows more about cars and suspension systems than I will ever hope to know, "Suspension set up is a very personal thing Angus. You have to find what is right for you." John is so right.

In conclusion then: the Independent Rear Suspension really does do what the MG Car Company wanted to do all those years ago when the MGB was in the initial design stage - see MG V8 Twenty One Years, page 16 and 17, which will tell you that that the MG Car Company originally designed the grandfather of the RV8, the MGB, to have IRS but failed to get the system right. Changing the live rear axle and cart spring rear suspension to a more modern IRS system was considered for the RV8 but turned down on the grounds of cost.

However, you simply must be patient after installation and get the SET-UP right. I would strongly recommend the use of 350lb/in springs. The difference with respect to the front to rear balance of the car is really astonishing. I for one would never have guessed that such a relatively small increase from 300lb/in would make such a fantastic improvement. The springs do the work and not the shock absorbers.

Finally, time spent getting the rear Camber and Toe-In angles, together with the front Toe-In angles, correct is so very important. I had my car measured by Tyre Pros at Canary Way in Norwich with their Hunter digital imaging wheel geometry system and that service was free. The car was measured to find the existing angles and then re-measured once I had inserted or removed shims as required to make corrections. The car is now simply fantastic.

I am going to conclude this article by telling you all a little bit about John Hoyle. From the moment that you first contact him with an enquiry about his product to the very last daft question you ask of him, his tone of voice never changes. He is quietly spoken patience itself, all the time. It is all very reassuring.

See www.v8register.net/gateway/rv8suspension.htm