RON TAURANAC RACING LTD
snelgar road, woking, surrey, GU21.1ED, tel. woking 70381-2
registered in london no. 1191976, VAT reg. no. 212 7605 90

CERTIFICATE

Safety Fuel Cell

This is to certify that RALT Chassis No. RT1-11
has been fitted with Fuel Cells Serial No. JM10734/JM10620
manufactured to F.I.A. Specification FT3 by
Marston Excelsior Ltd., of Wolverhampton.

B Tauranac

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CERTIFICATE

Roll Over Bar

This is to certify that the roll over bar and braces fitted to RALT Chassis No. RT1-11 comply with F.I.A. Regulations dimensionally (Article 298) and in terms of structural strength (Article 253 (c) 11).

R D Saunders

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RALT RT-1 DATA SHEET

WHEEL ALIGNMENT

Toe in	Castor	Ride Height	Camber	Tyre Pressure
Front 0	$4\frac{1}{2}^{o}$	3"	0^{o} Neg.	15 P.S.I. Hot
Rear 3/16" O.A.	1^{o}	$3\frac{1}{2}$"	$\frac{1}{4}^{o}$ Pos.	

Camber given is guide only and best set by temp. Inside shoulder 5-10°F. hotter.

Front Suspension:

Camber is measured on the Wheel Rim and set in conjunction with the ride height measured under the Front Bulkhead. It is adjusted on the outer (Hub) end of the top wishbone by means of the adjusting nuts RT. 272/3.
4 Turns = 1^{o}
E.G. if $\frac{1}{2}^{o}$ more positive camber is required, then loosen the outer nut 2 turns and then tighten the inner the corresponding 2 turns.
A TOE IN adjustment is now required to compensate. Make this on the outer end of the Track Rod (this is the same 20 T.P.I. as the adjusting nuts) making exactly half the number of turns as for camber; i.e. 1 turn for $\frac{1}{2}^{o}$.

Castor can be measured either with a gauge attached to the wheel nut or a Level on the steering arm plates. (Make an allowance for the chassis if it is not horizontal.) It is adjusted by moving the top wishbone back or forward by means of the spacing washers provided. These are .05" thick and each represents $\frac{1}{2}^{o}$ change.
To make an adjustment remove the Fibreglass side tank end cover. It is retained by (1) 10-32 screw. When this is removed the cover can be rotated out at the bottom and will then slide off its 3 retaining plates.
Remove the Wishbone Pivot Pin. Its 3/8" U.N.F. nut can be reached through the hole in the tub end exposed by removing the fibreglass cover.. With the nut removed the pin can be withdrawn and the washers changed around. When re-assembling, the 3/8 nut should be done up tight (30 ft. lbs.). This should have no influence on the freedom of the wishbone bearings, as this is set by the bearing sleeve length.
The nylon bushes are hydroscopic and will, therefore, swell if wet. It pays to assemble with a water repellant grease.

Bump Steer: If the castor is changed, then the height of the rod end between the steering plates will need changing to eliminate Bump Steer, i.e., if castor is increased the rod end will need lowering. The rod end is fitted with 2 shouldered bushes RT.328 and positioned with 4 washers .05" thick.
.1" wishbone change = .05" rod end change to maintain zero Bump Steer.

Rear Suspension

Camber: Adjusted on the top link, which is provided with R. & L.H. thread rod ends. 1 TURN = $\frac{1}{2}^{o}$
Toe In: Adjusted on the bottom radius rod. 1 TURN = .08" = 40 mins.
Castor: Adjusted on the top radius rod. 1 TURN = 40 mins. Measured on the Wishbone adjacent to the Hub. (Allow for chassis inclination). Used to optimise Bump Steer.

Wheel Retention

3" U.N.F. nut 1-1/8" A/F Torqued to 150 lb/ft Front; 160 lb/ft Rear minimum.

...cont.

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BRAKES

The brake Balance Bar has a 3/16" A.F. socket in its end and is adjusted by means of a Bondus 3/16" A.F. screwdriver, 6 clicks per turn. (Spring pressure obviates the need for lock nuts.) There is a hole in the side of the tub to allow for insertin; the screwdriver. You just need to depress the accelerator pedal out of the way. This, of course, means you can adjust the balance without the driver getting out of the car. Rotate clockwise for more front Brake effort.
The Master Cylinder push rods should be adjusted for length so that the balance bar is square across the car with the brakes hard on. The swing of the balance bar is restricted so that in the event of one line failure the other cylinder is still operative. If the brake rods are not adjusted as above, the balance bar may reach the limit of its swing and restrict brake effort on that end of the car.

STEERING WHEEL ADJUSTMENT

To change height, 4 holes are provided for the top bearing bolt. When this is adjusted it is essential to slacken the rack housing mounting bolts to allow it to rotate as the column is raised or lowered.
The instrument mounting is designed to move with the column.

AERODYNAMIC TRIM

The nose is fitted with a Bib (apron)which extends to increase down force and slides back in to reduce it. Six bolts hold it in position but 4 of these are left loose so that it can slide, only the forward 2 being tightened in practice.

The rear wing is mounted in aux. end plates and pivots as a unit near its trailing edge in the main end plates. Large adjustments are made in this way and the flap section is used for a quick trim which is progressive as against the steps of the main assembly. A second row of adjustment holes on the end plates provide for an additional screw to secure the main wing once its position has been established in testing. The main wing usually runs with its leading edge at max. height, so that almost the only adjustment required is on the flap.

WATER SYSTEM.

The radiator is provided with a bleed screw in its top L.H. corner, which in turn is fitted with a Schraeder valve and it is essential that the system is well bled. The valve is also used to test the system for leaks. By pumping it up until the pressure cap blows off the cap can also be rated in situ.

BATTERY

The Varley Battery, being mounted upright and outside the tub, can be run wet, which increases its life and reliability. It is desirable to shield it from exhaust heat during long periods of engine running whilst the car is stationery.

FUEL SYSTEM

Weber Carb. (F. Atlantic) cars have a pressure relief valve to bleed excess fuel pressure back to the collector tank. It can be adjusted by shimming or changing the relief pressure spring. The pressure gauge fitted often has a zero error and allowance should be made for this.

RALT RT1 - CHASSIS #11

Chassis Information and Notes

(1) The most severe chassis problem experienced in 1976 was in the area of braking. The left front caliper should be checked as at Trois Rivieres it was sticking quite badly. Also, the rear rotors should be turned down as they are pretty rough. Thought should be given to larger calipers in the rear.

(2) The springs should be replaced all around. They have fallen from 300 lb. to 250-270 lb. range. A selection of springs could be tried in testing. I would like to try 325 lb. springs in the front. The shocks have been dynoed and are in good shape. The handling characteristics of the car are slight understeer tuning in and a more severe oversteer existing slow speed turns and out and out oversteer in high speed turns.

(3) The shifting linkage is less than desirable. The u-joint (flex joint) just rear of the collar which comes off of the engine (under the oil filter) is quite sloppy and usually causes problems with shifting into first and second. The collar is mounted to the engine, and the engine is used as a stressed member. The result is that (I think) when the engine flexes within the rubber mounting bushings, it pops out of first gear. We tried replacing everyting (fork, slider, collar, etc.), and through process of elimination, this is about all it could be.

(4) The wheels with the car are two different widths in the rear. You might check with Tauavanac, but I think that the 15" rears work better than the 14" rears. The fronts are the same. Maybe mount rain tires on the 14" rims.

(5) As discussed, the wing design could be better. The amount of adjustment in the rear is not enough to balance downforce produced by the nose.

(6) The cooling system is for an F/2 car and always had to be taped on both oil and water to reach temperature.

(7) The front lower "A" arm pickups gave us problems. What has been done there was a track patch job which we never got around to fixing properly (i.e., is the location the same?). As you can see, the "A" arms were pulling out. Possibly not a good design for Canadian tracks.

(8) Special attention should be paid to the rear settings. The toe in under bump is the most effective advantage over other designs going. The car will come off of turns faster than any other car now built. Except for camber all of the settings on the set-up sheet are quite good. I never did get a handle on tire construction, but I think that the rear camber should be about 1/2 degree neg. to compensate for sidewall flex. Also, that front flap (covering rad. exhaust) causes quite a stir at the track -- well worth the psych value even if it doesn't do much. (I only use it to try and regulate running temperature.) Maybe there are later developments from Europe we could try in the suspension department?