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PRODUCT PLANNING & DEVELOPMENT STAFF



CHRYSLER CORPORATION

Via Air Mail

Letter No. 101u-154-30
February 4, 1970

Mr. W. K. McPherson
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Chrysler Australia Ltd.
G.P.O. Box 1320 F
Adelaide, South Australia

SUBJECT: PRODUCTION CAR RACING

Reference: My telex E-20 of January 14, 1970
Phone conversation of January 6, 1970
My letter #452 of December 15, 1969

Dear Walt:

I would like to take this opportunity to summarize your racing program as I have been able to piece it together, and comment as it seems appropriate.

The heart of the Australian racing season is apparently from September to March. Any new car or major improvements must be incorporated in production before September. You plan to enter the 1970-71 season with the 245-2bbl. engine in essentially the same car you are racing now, i.e. 3 speed manual transmission - local brakes - 14 x 6.0 wheels. There is no plan to build a low volume race car in VG which would include a race tuned suspension package, 7 inch wide wheels, improved brakes, 4 speed transmission, increased fuel capacity, and possible engine improvements. In the VH model year, a Super Pacer would be built with a greatly improved 245 engine. In addition the "25" model would be built with the 340 engine. Both of these models would be offered with the special components required for racing. Please confirm that these are in fact your current plans.

The 340 should be ready to race when it is scheduled. The parts I am shipping will probably arrive in April which will put the test car on the track in May. One question about this car and its testing. Do you feel that adequate tires will be available in Australia? If there is any doubt in your mind, Goodyear could easily supply U.S. tires for the test car.

The immediate area of concern is adequately preparing the 245 engine for racing in 1970. Since it is a new engine with its short history highlighted with mechanical problems, it is imperative that preparations be thorough and commence as soon as possible. The development should encompass both extensive dynamometer and car tests.

The car tests will be necessary to develop an oil pan that will assure oil pressure during hard cornering and other gymnastics. Other areas of concern are the cooling system, carburetion, and whether an oil cooler is necessary.

Because of the sizable power increase over the 225 engine, there is reason to expect durability problems, under racing conditions, with the clutch, transmission, axle, and possibly brakes.

I would expect the dynamometer tests to require the full services of one test cell for the next two years. The first area of concern is the durability characteristic of this engine under racing conditions. Fortunately this characteristic will make itself painfully obvious during the performance development of the "Super Pacer" engine. The logical approach to this development is to attempt rather moderate power gains rather than jump from the "stock" engine to full race. Besides giving an orderly, staged improvement, one gets a much better picture of what the engine wants. It also prevents the possibility of getting into a mechanical problem with a half dozen major parts all at once. To my knowledge you have no way of measuring the cylinder to cylinder fuel/air mixture ratio or variation. This situation of course will make intake manifold development impossible.

Certainly "reading spark plugs" or measuring exhaust temperature with thermocouples gives a clue, but neither is reliable enough for manifold development. The performance development of this engine should include investigations into the camshaft, valve gear, intake manifold, exhaust system, and crankcase windage. Intake port and valve size evaluations should be delayed until the engine is reasonably well developed when small power gains are welcome. The improved performance camshafts that will be evaluated early in the program should have at least 6000 RPM capability but power runs would be limited to 5600 RPM. 6000 RPM power runs would not be attempted until the power peak had reached 5600 RPM and a high level of confidence is established in the engine's durability.

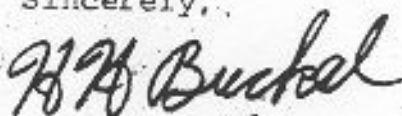
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In view of the experience with the truck engine there can be no doubt that the valve gear will cause the first few hundred headaches. I honestly don't think the minor modifications made on the truck engine will begin to take care of the racing requirements. Preparations should be made early in the program to adapt racing quality components. Several parts used on Chevrolet racing engines may be modified for the D245.

I have lived through similar programs with the 273, 340 and 440 engines, and certainly appreciate the problems that will be encountered. We stand ready to assist in all possible ways.

Your letter #430 called for transporting the test car and parts for two vehicle sets. The special parts for the V-8 test car are about to be shipped and procurement can start on the pieces for two additional cars. I assume these cars would be equipped with 6 cylinder engines. Please confirm this assumption so that I may supplement the original CWO and begin rounding up parts.

Sincerely,



D. G. EHR *FOR*
Mgr. - Int'l. Engrg.
Far East & Africa

HHB/sn