

I Submerged Fuel Pumps.

The fuel pump operated properly but trouble was experienced with the trap door on the pickup box and the pump check valves were still allowing the fuel to bypass. This will be corrected by using a three way manual valve and omitting the check valves.

VII LAP TIME COMPARISON OF MARK II VS. MARK IV.

Mark II (Firestone 15")			Mark IV (Goodyear 16")		
Infield	Oval	Total	Infield	Oval	Total
61.7	53.7	1:55.4	61.0	52.9	1:53.9
61.1	53.8	1:54.9	60.2	53.	1:53.2
63.0	53.8	1:56.8	60.7	53.2	1:53.9
60.9	-	-	61.0	54.0	1:55
			61.6	-	-
(Avg) 61.7 53.8 1:55.7			60.9 53.3 1:54.		

VIII FAILURES:

Vehicle #1012 crashed coming off of the #4 turn. The car was totally demolished. The vehicle was inspected and no failures were found that did not stem from the accident itself.

The following is a report of our inspection of R.F. Suspension:

1. Damaged wheel nut.
2. Slight damage to wheel.
3. Spring mounts intact.
4. Upright intact.
5. Upper A-Frame bent.
6. Upper Ball-joint okay.
7. Lower Ball-joint loose.
8. Lower A-Frame intact.
9. Front hub okay, and bearings free.
10. Caliper still retained.
11. Brake disc distorted.

(continued)

March 20-25, 1967

VIII Failures (continued)

The following is a report of our inspection of L.F. Suspension:

1. Wheel nut tight.
2. Wheel damaged heavily at rim area.
3. Spring mount intact.
4. Upright broken at lower ball.
5. Upper A-Frame intact.
6. Upper ball joint okay.
7. Lower ball joint okay.
8. Lower A-Frame bent.
9. Front hub okay, and bearings free.
10. Caliper still retained.
11. Brake disc broken.

The following is a report of our inspection of R.R. Suspension:

This corner was torn completely off of the car.

1. Wing nut still tight on wheel. Wheel was heavily damaged.
2. Hub still free.
3. Upright casting shattered.
4. Lower A-Frame torn loose at upright.
5. Radius rods and upper links were broken.
6. Stabilizer and torsion bar link broken.
7. Lower shock eye broken.
8. Half shaft pulled apart.

The following is a report of our inspection of L.R. Suspension:

1. Heavy damage to wheel at rim area. Wheel still tight on hub.
2. Hub bearings free.
3. Upright broken at lower mount.
4. Lower A-Frame bent, inner mount torn out of frame.
5. Radius rods bent.
6. Stabilizer link intact.
7. Lower shock mount broken on shock.

(continued)

VII Failures (continued)

General Chassis Conditions:

The chassis held up exceptionally well, and the driver's compartment was relatively undamaged. There was major distortion at the fuel cell compartments ahead of the rear tires. There were no fuel leaks, and the car had 30 gallons of fuel on board. There was little distortion to the roll bars, but they were pushed down two inches into the top of the L.H. fuel cell cavity. The seat belt and shoulder harness remained intact. The steering gear was inspected and was found to be free and operative. Firestone inspected the tires and valve cores and could find no irregularities.

Revson reported that the car was unstable. The only thing that could cause this would be a flat tire. Skip Scott had just driven the car for 25 laps at a consistent 1.58 lap, and reported that everything was fine and that the car handled well. Lloyd Ruby - who watched the car the lap prior to the crash and when he crashed - said that it appeared that Revson was in the wrong groove of the race track for that type of driving.

VEHICLE #1012

Failed stabilizer arms. 7075-TG Aluminum distorted.
Defective shocks were found.
Sticking master cylinder on rear brakes.
Rear trap door on fuel pickup box stuck.
Fuel pump check valves stuck open.

IX -

FAILURES:

Compression check made:

<u>Cylinder</u>	<u>Pressure</u>	<u>Cylinder</u>	<u>Pressure</u>
1	185 170	5	175 170
2	190 170	6	175 170
3	190 170	7	160 160
4	130 125	8	75 105

The cylinder heads were not changed. Fuel pressure gauge failed.

new power

0-25, 1000

yellow ring around
white heat bulb



March 27, 1967

HOLMAN & MOODY TEST REPORT:

Daytona 24 Hour Durability Run
March 20 - 25, 1967

I VEHICLES: Mark II Serial Numbers 1012; 1016; 1048

II DRIVERS: Lloyd Ruby
Skip Scott
Peter Revson

III PURPOSE:

1. #1012 for 24 hour durability.
2. #1046 for 24 hour durability.
3. #1016 for component evaluation.
 - a. Evaluate new brake ducts.
 - b. Evaluate new brake discs (Grey Iron).
 - c. Evaluate new brake pad material (Marshall-Eclipse D7119)
 - d. Evaluate new 2" diameter headers.
 - e. Evaluate new electrical components.
 - f. Evaluate new light weight battery.
 - g. Evaluate new light weight stabilizers.
 - h. Evaluate 5" radiator core.
 - i. Evaluation of Carburetor and Manifold.
 - j. Evaluation of submerged fuel pump.

IV PERSONNEL:

John Holman
John Wanderer
John Gager

Richie Barsz
 Grev Hesketh
 Gerd Wunderlich
 Larry Jenkins
 Norman Lockwood
 Robert Halveren
 Ian Johnstone
 Al Gordon

V VEHICLE SPECIFICATIONS:

CAR #1012	CAR #1016	CAR #1046
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ENGINE:

AX-316-2-88
8V Tunnel Port
Alum. Heads 11.1 comp.
SK cam
Holley 652 CFM Carbs.
Carb Jets:

#70 primary
.076 sec.
.026 top well
.040 sec. idle
.025 accel. nozzle
Accelerator nozzles in 4 venturi

AX-316-2-89
8V Tunnel Port
C.I. Heads
SK cam
652 CFM Carbs.

AX-316-2-86
8V Tunnel Port
C.I. Heads
SK cam
652 CFM Carbs.

TRANSMISSION:

KKL 738

1st: 2.32
2nd: 1.69
3rd: 1.29
4th: 1-1
Final drive: 2.77

KKL 740

1st: 2.32
2nd: 1.69
3rd: 1.29
4th: 1-1
Final drive: 2.87

KKL 739

1st: 2.32
2nd: 1.69
3rd: 1.29
4th: 1-1
Final drive: 2.77

CHASSIS:

Same chassis as Daytona Race Cars:

Chassis Weights:

L.F. 5.22
L.R. 864
R.F. 542
R.R. 815

L.F. 534
L.R. 887
R.F. 532
R.R. 811

TIRES:

28.2 Diameter Firestone
Rear: 12.00-15
Front: 9.20 - 15

RESULTS:

Total Laps: 159
Fast Lap: 1:54.9
Hours run: 5hrs.18min.

Total Laps: 130

Fast Lap: 1:55.84

Hours run: 4hrs. 20 min.

Total Laps: 160

Fast Lap: 1:54.7

Hours run: 5 hrs. 20 min.

Holman & Moody Test Report
Daytona 24 Hour Durability Run

March 20-25, 1967

VI RESULTS:	Car #1012	Car #1016	Car #1046
Total Laps:	159	130	160
Fast Lap:	1:54.9	1:55.84	1:54.7
Hours Run:	5 hrs. 18 min.	4 hrs. 20 min.	5 hrs. 20 min.

A. New brake duct configuration

Pressure 8 1/2" water in front duct.
146° brake duct temperature
9" Water in rear duct.
228° L.H. duct temperature (rear)
177° R.H. rear duct temperature.

The front brake cooling is adequate with this type duct, but the rear was inconclusive.

B. Brake Discs - Grey Iron.

No cracks appeared at the end of 5 hours and 20 minutes.

C. Brake Pads: D-7119 Bendix-Marshall-Eclipse

Straight fade existed.
Extreme pedal effort.
Test was discontinued on this material.

D. Exhaust Headers - 2" diameter, 180° crossover

2" headers		2 1/4" headers	
Lap time - Infield		Lap time - Infield	
1.57.5	62.2	1.56.54	61.34
1.57.7	62.35	1.55.86	61.18
1.57.5	62.2	1.55.84	61.50
1.57.75	62.4	1.56.5	61.60
1.57.65	62.4	1.56.25	61.57
1.57.77	62.17	1.56.79	61.89
1.58.83	62.73	1.56.56	61.90
1.57.92	62.37	1.56.20	61.90

E. Electrical System:

No trouble was experienced with the new electrical components or the light weight battery. The battery seemed to have adequate starting capacity.

March 20-25, 1967

F. Front Stabilizer and Aluminum Arms.

The aluminum stabilizer arms deformed and were replaced with steel. The splined front stabilizer worked adequately.

G. New Radiator Core, 5 inch.

The water temperature was too low for any conclusive results.

H. Carburetor and Manifold evaluation.

An intake manifold with dividers was tried, but no conclusive findings were made due to changing track conditions. Different carburetors with altered metering passages were used. Though the vehicle did not go faster, it was possible to reduce the jet sizes without a loss of power. The driver preferred accelerator pump nozzles in the primary only.

The following is a comparison of infield, oval, and lap times of the Production 650 C.F.M. carbs with 4 nozzles accelerator pumps versus Carl Glese's revised metering system carburetors. The revised carburetors flowed 625 and 645 C.F.M. respectively.

The laps run with the revised carburetors were made later in the day when the infield was slowing down, and therefore, no definite conclusions can be drawn as to the performance of the carburetors.

The oval time is off, but this would be directly related to a lack of CFM capacity. Future tests of this type should be done with an instrumented car.

(625-645 CFM)		
Infield	Oval	Lap
61.9	55.4	1:57.3
61.3	55.2	1:56.5
61.9	54.7	1:56.6
62.2	55.1	1:57.25
61.75	55.3	1:57.1
61.87	55.0	1:56.87
62.55	55.1	1:57.56
61.55	54.9	1:56.4
62.1	In	

(650 CFM Prod.)		
Infield	Oval	Lap
64.51	54.69	1:59.20
62.23	54.35	1:56.58
62.03	54.53	1:56.56
63.13	54.59	1:57.72
62.21	54.74	1:56.95
62.60	54.38	1:56.98
62.38	54.63	1:57.01
62.20	54.68	1:56.88
62.58	54.42	1:57.00
63.17	54.78	1:57.95
62.38	54.68	1:57.06
62.18	54.76	1:56.94
62.81	54.80	1:57.61
62.28	54.60	1:56.88
62.38	54.63	1:57.01
62.21	54.73	1:56.94
64.40	54.83	1:59.23
62.66	55.24	1:57.90
62.92	In	

March 20-25, 1967

VIII Failures (continued)

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March 20-25, 1967

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<u>Cylinder</u>	<u>Pressure</u>
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The cylinder heads were not changed. Fuel pressure gauge failed.

Daytona 24 Hour Durability
Holman & Moody Test Report

**Holman & Moody Test Report
Daytona 24 Hour Durability Run**

March 20-25, 1967

IX Failures (continued)

VEHICLE #1046

No failures

VEHICLE #1016

Fuel pressure gauge failed.

Fuel pump check valves stuck.

Cylinder heads were changed due to low compression.

The cylinder heads had 5 intake valves on one exhaust valve that leaked badly when the port was filled with water.

One exhaust valve appeared to be sticking.

X COMMENTS:

Generally speaking, the test was not a success as for fulfilling the intended purpose of running 24 hours, but a lot of useful information was obtained which will greatly help future efforts.

Submitted by:

**John Wanderer
HOLMAN & MOODY, INC.
March 25, 1967**

of politicking, and he knows the people in charge of the Cougar team, who worked directly for the factory, were prepared to defy any instructions and go all out to win. It was academic; Mustang won the last race fair and square.

Meanwhile, in international racing, things had not gone well for Ford. Revson and Mark Donohue co-drove a Holman and Moody car at Daytona in the twenty-four-hour race, but it was another case of bad transmissions, only ten times worse than before. Ford knew about the problem and had brought truckloads of spare gearboxes with them for the race, and they went through almost all of them.

Two cars were sent to the next race at Sebring, and Ford won it with Mario Andretti and Bruce McLaren co-driving, but neither Revson nor Donohue was entered.

And then, in preparation for the twenty-four-hour at Le Mans, a race Henry Ford always considered the most important international event of them all, Revson was bounced off the first-string Ford team in the most dramatic way possible.

"We were having a private Ford test at Daytona for the Mk IIB and the Mk IV and I was coming off the banked fourth turn when the car started to get a little wormy. It was losing a little of its stability coming over the turn where there is a hump in the road. A tire was going soft and the car slid a little further than it should have. The tires started to lose adhesion when the whole car just sort of swept toward the wall. It scraped the wall very lightly, it didn't even hit the tail end, it was almost as though the whole car brushed the wall at once. What that did was to grind off the right rear tire. I was going maybe 185, and the whole car dipped down. The air got under the front and it took off like an airplane. I just put my head down and waited for the banging to stop. I thought I was up in the grandstands. As it turned out, I took out a light pole 25 feet in the air, but I didn't get in the grandstands and I didn't jump the fence. The car went bicycling down the track and it landed, according to the odometer on Lloyd Ruby's bicycle, a third of a mile from the point where it first made contact with the wall.

"Just previous to my accident Ford had put rollbars in the car. They hadn't been in when Ken Miles was killed in a Ford testing accident and they hadn't been in when Walt Hansgen was killed in his Ford practicing for Le Mans.

"I remember getting out of that thing, popping open the door and pulling myself up out of the car, and I've never seen so many shocked people in my life. They were all standing in a semicircle about 50 feet away from the car, kind of poised, waiting for something to happen and never in their lives expecting anyone to get out . . . much less uninjured."

Insisting it was a precaution, the Ford people put Revson in a hospital. But it is Revson's conviction that it was a matter of keeping word of the accident from leaking out. To Revson's surprise, since he had always considered the elegant life-style of Henry Ford to pervade his corporation, Ford did not arrange for a private room in the hospital. That was particularly disturbing when Mario Andretti came to visit and gave Revson, an avid cherootist, a cigar. Revson's roommate was dying of emphysema.

When the team got to Le Mans, Revson was demoted to backup. About noon, with a good part of the race still to run and a very clear obligation to stick around in case he was needed, Revson got bored and, figuring he had done his duty, asked Skip Scott to give him a lift to Paris. Scott had borrowed an Eldorado to drive down to the race, one of perhaps two Eldorados in all of France and no more visible than the Good-year Blimp. It's hard to sneak out of a French race track in an Eldorado, but Scott and Revson were managing it when Scott spied Henry Ford on his way in.

"Of course, Skip wanted to say hello mainly in order that Mr. Ford could acknowledge Skip's presence. But I said, 'For Christ's sake, Skip, if he sees us leaving now he's going to tell Passino and we won't get the 3Gs.' I needed the 3Gs but Skip wanted to say hello to Mr. Ford. So he deliberately rerouted himself to drive in the same path in the heavily crowded pits as Henry Ford, who was coming in the other direction.

"I took one look and saw that Skip was serious about saying hello to Mr. Ford and got down on the floor of the back seat.