TEAM COOPER

Cooper TIRES

January 10, 1998

TO:	Tom Griffith	John Pecoraro	Larry Wilch
	Bill Jones	Jim Piper	Reuben DeBolt
	Jeff Schumaker	Bill Hession	Steve Cramer
	Ron Sawyer	John Luchini	

FROM: Dick Stephens

SUBJECT: Technical and Manufacturing Assessment

Reference:
1. Meeting on same subject, January 9, 1998.
2. Telephone conversation, DRS with Dave Wood, Keith McKenna and Ned Connelly of General Motors, January 9, 1998.

I have tried to summarize the results of our January 9, 1998 meeting and incorporate the results of a telephone conversation with GM after our meeting. I strongly suggest you read this note and assure I have properly represented the results of our discussions.

As a result of our meeting on January 9, 1998, the following action items were agreed upon:

1. Tom Griffith and John Pecoraro will provide a document that responds to "Cooper's overall business plan related to the original equipment market and to General Motors NAO original equipment business."

2. Tom Griffith will provide a document that responds to "Cooper's view of future tire industry opportunities and challenges" from a business and market perspective. Dick Stephens will respond from a tire technology perspective.

3. Tom Griffith will provide a document that responds to "Cooper's views of it strengths and weaknesses in North America."

4. Tom Griffith will provide a document that responds to "Cooper's view of any advantages to General Motors North American Operations for original equipment fitment of Cooper Tire (i.e., why should GM use Cooper tires?)

5. Dick Stephens will provide a "review of Cooper's organizational structure and reporting relationships (including an overall organization diagram and approximate number of employees)."

6. Dick Stephens will provide documentation of the "decision-making processes within Cooper" regarding technical issues and R&D funding and resource issues.

7. Jim Piper will provide documentation on "Cooper's supplier selection, development and performance evaluation processes." This should focus on raw materials with a brief review on tire mold qualification. Reuben DeBolt will provide Jim the needed information on molds.

8. Bill Hession and Steve Cramer will provide documentation of our customer satisfaction data and our "service and warranty policy and procedures (including review of dealer organization)." The primary focus is to provide GM with the ways we collect data and information to know how our products perform, how we determine customer satisfaction and what we do with the data and information to continuously monitor and improve our performance and customer satisfaction.

9. Dick Stephens will provide documentation related to the tire R&D budget as it relates to sales, technical personnel education and experience profile and a technical organization chart.

10. Larry Wilch will provide documentation describing "the tire development process and how it is coordinated with manufacturing."

11. Bill Jones and Ron Sawyer will provide documentation that describes "Cooper's modeling capability, CAD, FEA, modal modeling and other analysis techniques used for tire design." The issue of availability to General Motors relates to our willingness to share tire models for their use in vehicle design.

12. Jeff Schumaker will provide a comprehensive document that describes our testing resources, owned and contracted, and their application to meeting GM tire performance requirements.

13. Bill Jones, John Luchini, and Larry Wilch will provide a listing and description of "any other relevant technical resources used or tire research and development (e.g., other corporate division groups, outside contractors, joint ventures, technical agreements, university agreements, etc.)."

14. Larry Wilch will be prepared to provide the necessary information regarding "understanding of requirements", "areas of technical difficulty in specifications", and "discussion of current Cooper tire performance levels vs. GM specs." This information should be for discussion. We could prepare a short presentation to show the results of our testing versus their specifications on the IX Gen. and a comparison to other product lines.

15. Larry Wilch should contact Keith McKenna to determine clarification regarding "technical communication and interaction with General Motors during the tire development process."

16. Dick Stephens will provide a list of tire design, development, test, or manufacturing innovations that would offer benefit to General Motors NAO.

17. Jim Piper will provide a document that provides our compounding philosophy. We should be prepared to make a short presentation regarding our rolling resistance technology and what we are doing to keep our material technology up to date and competitive.

18. Bill Jones will have the Traction/Wear/Handling Team make a presentation on our work on ride and handling. This needs to include the topics listed by GM; design, construction, and compound tuning for optimization; evaluation methods; modeling methods.

19. Reuben DeBolt will be prepared to provide information in presentation and discussion form on Cooper's "tire uniformity performance, uniformity measurement, and predictive capabilities." GM is interested in our ability to resolve ride problems for sensitive vehicles through predictive tools rather than trial and error. Dave Wood will be sending me a copy of the "Level E Drawing 9591354" as they are not sure if any changes have been made since we received our copy mid-97.

20. Larry Wilch, Bill Jones and Jim Piper will provide documentation of our benchmarking work. It is also important to note how we use the results.

21. Bill Hession will provide a summary of our DOT compliance methods and a listing of our UTQG ratings.

Note that none of the information to be provided to GM should be considered "Confidential" of "Proprietary". According to Dave Wood of GM, they cannot accept any material that is marked "Confidential" or "Proprietary". Apparently, their legal department made this policy due to the large size of GM and as a result cannot guarantee confidentiality. However, Dave indicates they will do their best to keep this material internally.

Based on my conversation with GM after our meeting, I think we are on the right track. GM expects to take a fair amount of documentation with them as reference material. They also expect us to provide information that we may not want them to take with them, such as presentations on tire performance, tire technology, etc. They will tour our laboratories and testing facility.

GM will be here on Monday, January 26, 1998 at 8:15 a.m. to start the Technical Assessment. They plan to travel to Albany on Tuesday evening. The Manufacturing Assessment will begin on Wednesday and conclude on Thursday. I will be receiving an itinerary on Tuesday, January 13, 1998. GM will have at least seven people in Findlay, including Dave Wood, Keith McKenna, Ned Connelly, Ken Oblizjach, Dave Cowger, Ron Osborne, and one or two from Purchasing. All will be going to Albany with the exception of Ken Oblizjach.

We have a lot of information to prepare. As we discussed at our meeting on January 9, 1998, we need to present the facts in a professional way. I am sure we can and will make a very positive impression with the information and the manner in which we present it. However, I am also sure we will not meet all of the requirements of GM but I am sure we can over the next two years assuming Cooper really enters the OE market.

As we agreed, we will get together to review our progress on January 20, 1998 at 8:15 a.m. in the Engineering Conference Room – 1st Floor. Susan will be sending out a note on format for all paper documents to be included in the book. Susan and I will be responsible for assembling the book.

Thanks for your help in this effort. I think it will be very worthwhile to get a totally independent and objective assessment of our technical and manufacturing capabilities. It should be very helpful as we set plans for the future.

D. R. Stephens

cc: Phil Caris
Bill Klein
John Fahl

North American Operations
Engineering Center

Date: 18 February, 1998

Subject: Potential Supplier Assessment of Cooper Tire & Rubber Co.

From: Tire-Wheel System Assessment Team

To: R.E. Socia - World Wide Purchasing

A team including Tire-Wheel Systems and World Wide Purchasing representatives traveled to Cooper Tire and Rubber Company's Findlay, OH headquarters and their Albany, GA tire production facility the week of January 26, to perform a potential supplier assessment. Cooper was advised in December, 1997 of the areas that the team would cover - Leadership, Technology, Manufacturing, and Quality.

The following points summarize the Team's overall assessment.

- Research and Development has a few capabilities that are contemporary with the rest of the tire industry; however, overall technical capability is very limited. Significant testing, analysis, and modeling capability would have to be installed to meet current OE tire performance requirements and competitive performance levels.
- Cooper's manufacturing capability, while contemporary, lags the current OE industry level of automation, control, precision and efficiency.
- Cooper's quality philosophy is dated significantly, relying on repeated inspections and repair much more heavily than root cause analysis, corrective action and continuous improvement.

Cooper's declared current position is to be a "fast follower" in the aftermarket. This has resulted in the need for minimal investment in technology in the areas of design, modeling, test and analysis. Therefore they lack both the tools and the personnel to compete in the OE market. Their manufacturing and process technology has been similarly structured, and thus needs similar upgrades to produce original equipment tires with the quality and uniformity levels required by General Motors.

We conservatively estimate that with full commitment of resources, Cooper will require 5 years plus to develop and supply properly optimized and tuned original equipment tires to General Motors.

N.T. Connolly
Director
Tire-Wheel Systems Center

cc: KJM, KLO, [redacted], RDO, DLW, T. Ossman, L. Flerens

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