

**Executive
Communication**

February 12, 1964

To: Members of the Product Planning Committee

Subject: 1966 Utility Vehicle (Bronco) Program

The four-wheel drive market and possible Ford product actions were reviewed with the Product Planning Committee on October 23, 1963. At this time interim expenditures of \$0.3 million were authorized for further development prior to program approval of a Ford utility vehicle (code-named Bronco). The purpose of this communication is to request approval of the 1966 Bronco Program.

Utility Vehicle Usage

Since the introduction of the Scout by International Harvester in 1961, the Division has conducted several surveys and group interviews with both Scout and Jeep owners to determine utility vehicle usage and buyer motivation. These surveys indicate that Scout and Jeep owners do not consider their vehicles to be either cars or trucks, rather these units are felt to be especially designed vehicles that can carry nominal loads over all types of terrain. The combination of a high degree of maneuverability and a four-wheel drive feature provides an ideal vehicle for use by campers, service station operators, loggers, rangers, and others desiring transportation under adverse circumstances.

The Scout appeals to a wider range of domestic owners than does the Jeep, primarily because it has more power and provides a more comfortable, roomier interior. A hard core of Jeep oriented owners remains. These tend to be sportsmen who require maximum maneuverability and ruggedness for use in the mountains, service station and sidewalk snow removal operators requiring narrow width with maximum maneuverability, and those who feel that the name "Jeep" is synonymous with 4x4's.

Almost all Scout and Jeep owners interviewed indicated that a conventional 4x4 truck was not suitable for their needs.

Market research surveys have revealed strong interest in a new and improved utility vehicle. In varying degrees, the majority of Scout and Jeep owners have indicated dissatisfaction with their current vehicles and have requested improvements to provide:

- . Better on and off-road performance.
- . Improved comfort in terms of seating package and pedal location.
- . Better ride and handling.
- . Quieter operation.
- . Improved styling.

Market Data

The domestic Scout and Jeep market is 35,000 units per year of which 85 per cent are four-wheel drive models.

Prior to 1961 the Kaiser Jeep, which was the only domestic utility vehicle, had an annual sales volume of about 11,000 units. The introduction of the Scout in late January, 1961 expanded the utility market and at the same time Jeep sales increased. Historical volume data detailed on Exhibit I are summarized below:

Utility Vehicle Sales (Calendar Year Registrations)

	Average 1959-60 (000)	1961 (000)	1962 (000)	1963 (000)
<u>Domestic</u>				
Scout	-	19.0	25.1	22.3
Jeep	<u>11.0</u>	<u>13.4</u>	<u>11.5</u>	<u>12.4</u>
Total	<u>11.0</u>	<u>32.4</u>	<u>36.6</u>	<u>34.7</u>

Scout sales increased from 19,000 in 1961 to 25,100 in 1962 and have decreased to 22,300 in 1963. The Division believes the decrease in 1963 is due to a decrease to a more normal sales level after introduction of a new product line, and the relatively poor design and quality level of Scout vehicles.

Current Product Offerings

The basic Scout model is a pickup with a bolted-on steel roof. This unit, available in both two- and four-wheel drive models, has a 100 inch wheelbase and is powered with a four-cylinder 152 CID engine derived from the 304 CID V-8 medium truck engine. A full length steel top and an open body with no roof or door glass are also available as optional body styles.

The basic and most popular Jeep model is the CJ-5, an open body unit which has an 81 inch wheelbase and is powered with a four-cylinder 134 CID engine. An optional wheelbase of 101 inches is available and enclosed cabs can be furnished with fiberglass roof and steel doors as well as with various soft tops (Exhibit II).

Both the Scout and Jeep have a conventional body-frame design, leaf spring suspensions, and two-speed transfer cases. In both units the engine is positioned to the rear of the Dana driving front axle. The Scout, a longer and wider vehicle, provides more load space but with an undesirable reduction in maneuverability. Because of the engine location, which protrudes into the front passenger compartment, neither vehicle provides comfortable seating or pedal locations.

1966 Bronco Proposal

The Bronco has been developed to provide a vehicle that combines the best features of both the Scout and Jeep plus important extras as indicated by customer desires.

Product Offering

The Bronco is planned to be a body-frame vehicle of approximately the same width and length as the Scout. It will be available in open body, long steel top, and short fiberglass top models in both two- and four-wheel drive versions with a 92 inch wheelbase. Superior performance will be provided by use of a Ford drive-train—170 CID Falcon engine, 3-speed fully synchronized transmission, and a modified F-100 rear axle. Four-wheel drive is provided by the use of a Dana driving front axle and a Dana transfer case with by-pass feature. Modified pickup box and front coil spring suspension components from the 1966 F-100 4x4 will be used. Vehicle specifications are detailed on Exhibit III.

Product Comparison

In the tables below the Bronco, Scout, and Jeep have been rated first, second, and third in important operating characteristics. These characteristics have been separated into two groups, those important for off-highway operation only and those important for general operation including both on- and off-highway conditions. While ratings of these characteristics have not been weighted for importance relative to each other, it is believed that the total rating (based on fewest points) in each group is a good indication of over-all operating characteristics for each type service.

Off-Highway Operating Characteristic Ratings

	<u>Bronco</u>	<u>Scout</u>	<u>Jeep</u>
Ground Clearance	2	3	1
Hill Climbing Ability	1	2	3
Maneuverability	2	3	1
Winch Location	3	2	1
Visibility over Hood	<u>2</u>	<u>3</u>	<u>1</u>
	<u>10</u>	<u>13</u>	<u>7</u>

In terms of off-highway operating characteristics, the Jeep rates as the leading vehicle with the single exception of its hill climbing ability. As can be seen from the table, the Bronco will be superior to both other vehicles in hill climbing ability and superior to Scout in ground clearance, maneuverability, and visibility over the hood. It will be inferior to the Scout only in winch location.

The Jeep is basically designed for and has excellent off-road operating characteristics.

General Operating Characteristic Ratings
(On- and Off-Highway)

	<u>Bronco</u>	<u>Scout</u>	<u>Jeep</u>
Performance	1	2	3
Ride	1	2	3
Seating Comfort	1	2	3
Handling	1	2	3
Noise, Vibration, & Harshness	1	3	2
Load Capacity	1	1	2
Entrance and Egress	<u>2</u>	<u>1</u>	<u>3</u>
	<u>8</u>	<u>13</u>	<u>19</u>

The Bronco will excel in all general operating characteristics which apply to both on- and off-highway operation except for a slight deficiency in entrance to the back seat on the long hardtop model and 5 inches less load length than Scout. The Scout is superior to the Jeep in all categories except for noise levels.

While the Jeep is the best vehicle for strictly off-highway operation, it is the worst in the above important general operating characteristics and, therefore, appeals only to a relatively small segment of the market. Inasmuch as Scout outsells Jeep by approximately two to one, it would appear that the general operating characteristics such as over-all size, performance, ride, handling and comfort, which apply to both on- and off-highway operation, are more important to a large group of owners. It is in these characteristics that the Ford Bronco will be outstanding (Exhibit IV).

In addition to its functional superiority, it is believed that the improved styling of the Bronco will appeal to a much wider group of owners than either the Scout or Jeep. It is expected that appearance will become more important as the use of specialized vehicles increases in the expanding recreation market.

Product Features

The primary engineering innovations in both vehicle package and product features that result in the Bronco having superior operating characteristics are:

- Incorporation of a new coil spring front suspension and a Dana driving front axle with 37 degree turning angle to provide superior turning diameter and ride characteristics.
- Adoption of a relatively high front floor to ground dimension and an intermediate wheelbase of 92 inches to provide a superior ramp breakover angle.
- Placement of engine over front axle to provide more front seat leg room.
- Use of 170 CID engine to provide superior performance and lower NVH levels.
- Incorporation of a Dana transfer case with "by-pass" feature when in two-wheel drive operation, thus assuring a quieter drive in conjunction with a superior Ford body design to aid in reducing the total NVH level.

Improved driver seating comfort and pedal location have been achieved at the expense of some sacrifice in load space and winch location. However, the Division believes that this increased driver comfort offsets the load length deficiency versus Scout and the reduction in approach angle when a winch is installed. Similarly, Bronco head room—although equal to the 1964 F-100 pickup—is two inches less than Scout as a result of adopting a lower roof to improve appearance and by increasing ground clearance in the center of the vehicle to preclude "hanging-up" in off-highway operation.

Expected Volume

Domestic industry utility vehicle sales currently forecast to be 35,000 units for Scout and Jeep are expected to increase if Ford or General Motors were to enter the market. Based on the market expansion that occurred when the Scout was introduced in 1961, the Division conservatively estimates that this market would increase another 20 per cent to 42,000 units. It is expected that, because of the broader coverage of the Ford dealer organization and the Bronco's superior product features, the Bronco priced at the Scout level will outsell Scout and Jeep and account for approximately 40-45 per cent of the market or 18,000 annual sales. This compares with a 33 per cent Ford penetration in total light trucks where Chevrolet is the major competitor. If General Motors were also to introduce a utility vehicle, it is expected that the market would be further expanded to about 50,000 units of which the Bronco would obtain a 30 per cent share or 15,000 units.

Since Ford presently has no entry in this market and Scout and Jeep buyers are generally not interested in conventional trucks, it is believed that a large percentage of Bronco sales would be incremental.

Financial Considerations

Based on an estimated annual domestic sales volume of 18,000 units, the table below shows the 1966-70 average annual profit effect at various levels of incremental and substitution sales with a price equal to Scout (Exhibit V) and an estimated investment of \$10.0 million required to introduce the Bronco (Exhibit VI):

<u>Incremental Sales</u>	<u>Substitution Sales^{a/}</u>	<u>Profit Effect At Actual Volume 1966-70 (Millions)</u>
5,000	13,000	\$(0.2)
7,000	11,000	0.8
9,000	9,000	1.8
11,000	7,000	2.8
13,000	5,000	3.8

^{a/} Assuming Bronco substitution for Ranchero, Econoline, and F-100 pickups.

The breakeven point for this program is approximately 5,300 incremental units per year. At 50 per cent or 9,000 incremental sales per year, which the Division believes is conservative, domestic Company profits are increased \$1.8 million per year (Exhibit VII). This is exclusive of estimated incremental export sales of 2,000 units (estimated Scout export sales are 1,500), which would improve annual profits an additional \$1.0 million.

At a financial planning volume of 9,000 units (assuming 100% substitution), this program would result in an average annual reduction in Company profits over the 1966-70 period of \$2.6 million. The 1966 truck model year profits including the effect of this program are projected at \$40.8 million. Both the fixed investment and profit effect of this program are consistent with the levels reported to the Committee in the 1966 Truck Program presentation of December 23, 1963 and the Four-Wheel Drive presentation of October 23, 1963 and are reflected in the current profit forecasts.

The following steps have been taken to minimize fixed investment for this proposal:

1. The side panel, tailgate, and floor pan assemblies of the F-100 pickup box are being utilized with minor modifications. Other existing shelf components are being used in a similar manner wherever possible.
2. Engineering design services for body-in-white, seats, trim, and body electrical are being provided by the Budd Company, Philadelphia, who will also tool and supply the majority of the body sheet metal components.
3. MSD Engineering has set up a self-contained three-man group to give technical direction to the Budd Company and to monitor, control, and release the program outside the normal MSD channels.
4. Engineering prototype bodies will utilize reworked 1964 Styleside rear end sheet metal. The front end sheet metal for initial prototypes will be made from low cost tooling produced from plaster casts of the clay model.
5. Assembly of the Bronco will be limited to a single plant (Michigan Truck).

Timing

The planned Job #1 date for the 1966 utility vehicle is August 23, 1965.

Summary

The proposed 1966 utility vehicle program will provide Ford with a superior entry in the utility vehicle market and an opportunity to increase market penetration and Company profits through incremental sales.

The concurrence of the Product Planning Committee in this program is requested.

/s/

L. A. Iacocca