

**Commonality and Postponed Differentiation**  
for

**Loader/Backhoe ROPS**

**CASE Corporation**  
**PRODUCT OFFERING GROUP**

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by

**Hernan Moraga**

**(with the collaboration of Jack Frost, Bob Peterson, Harold Hill, and Anne Fancher)**

## **Executive Summary**

"Case said net sales in the latest second quarter were \$1.4 billion, compared with \$1.38 billion a year earlier. Net sales comparisons were impacted by the divestiture of company-owned retail stores, lower exchange rates, and a **reduction of dealer inventories** as a result of Case's supply chain management **initiative that, in the short-term,** reduces sales to dealers."

*3/DJBN, July 18, 1996 [emphasis added]*

**This document shows the strategic convenience of implementing a modular two-piece ROPS approach for the Loader/Backhoes Series.**

In the past CASE had a two-piece Canopy that was abandoned because a combination of poor implementation and because of a cost reduction initiative.

The pressure of providing a more flexible product line suggests that CASE may want to reconsider that approach and improve it to provide a common ROPS base structure that could be used for both Canopies or Cab furnishings worldwide.

**Such an opportunity is technically feasible, and has the potential of providing a "postponed differentiation" implementation. This flexible approach will create a differentiation at marketplace improving the level of serviceability and reducing the order to delivery average time with a minimum increase in total manufacturing cost.** The exact cost is not available at this time, but a previous well performed estimation set it within the range of US\$30 to US\$70 per unit.

The biggest measurable impact for CASE consists of the reduction of up to about one half the security inventories in finished goods carried today in the regional warehouses—for instance, only LAO carries 50 units as security stock that could be reduced to 25 if the ROPS is modified in a way that allows easy interchange of Cab/Canopy ROPS between units. Similar benefits would be perceived at the dealer level. Also shipment cost would be reduced because standard containers could be used to ship Loader/Backhoes without the upper ROPS; and ROPS—either Canopies or cab—could be shipped in standard containers, stacked, allowing to ship up to twelve units in a small container.

This will be possible because a Canopy unit will be able to be turned into a Cab unit within a couple of hours, unbolting a few joints, disconnecting a few electrical connections, removing the Canopy upper structure, and then mounting the Cab upper structure, and performing the reverse sequence. All this process would take a few hours, in contrast with the situation today that requires from one to several days.

Also important are the benefits that end-users will receive for such a modification in the ROPS structure: they will be able to dismount and mount a Cab attached to a broken machine, and mount it on an operational unit equipped with a Canopy ROPS. Certainly this should be a major marketing differentiation that will increase sales.

Furthermore, the proposed implementation will provide a means of local content fabrication in those key markets where adding local content is a must (i.e., Mexico, China, Brazil).

This proposal aims towards the “flexible manufacturing” world. In this arena CASE would set the game rules easily, just because it has already a common lower ROPS structure design across its Industrial Wheel family. This is an unique opportunity available to CASE Corporation today ...

Best of all, if the modular ROPS approach is implemented, those buyers who prefer "Made in USA", those who prefer "Made in Malaysia", and even all those who prefer "Made in X country" will be **satisfied with one core product.**

**That will give to CASE a competitive advantage.**

The following pages analyzes the two-piece ROPS proposal.

## **Abstract**

Let's imagine for a moment that CASE has the modified ROPS. The common lower structure (floor-mat, fire wall, operators seat, etc.) is separated from the upper structure in a modular design. Also suppose that the Factory adds the upper structure and ships the finished unit as it does today. Therefore the USA and CANADA markets don't notice the difference respect the current one-piece ROPS approach.

Also imagine that the upper and lower pieces are BOLTED IN THE BASE OF THE FLOOR, not in the middle of the B posts like the Malaysian version does today ... Imagine that pressurization won't be lost because the usage of sealing silicones, etc. In summary, imagine that the difference is NOT NOTICEABLE compared to the current Cab.

Yes, imagine that CASE has a two piece cab that looks and performs the same as the current beautiful cab, but that it is DIFFERENT only in the sense that it has more FLEXIBILITY. More flexibility because with unbolting a couple of joints and disconnecting a couple of electrical plugs the whole Cab can be removed and mounted onto other machine on a short period of time, yes, maybe in a couple hours.

## ***What are the expected benefits of a two piece ROPS approach?***

### **Reduced CASE and Dealer's Inventories**

Improving the "Malaysian Special" two-piece ROPS approach could be used to reduce Region and Dealer inventories, not only for the "export" markets, but also for NA operations, and all the markets serviced by Burlington today.

**Just imagine the possibility of removing a cab from a 580SL 4WD stored in the Miami warehouse and replacing it with a Canopy for filling an unexpected opportunity in Central America.** Under the current conditions LAO management needs to carry security stock to cover such unexpected orders. LAO personnel estimates a 45% inventory reduction in finished goods if the modular ROPS approach is in place.

The very same benefits are transferable to other regions, and to dealers, too.

### **Additional Revenue Source**

**A more flexible value chain would likely impact positively the marketplace, just because CASE dealers will be able to react in less time than competition.**

Selling upgrade kits to those Canopy owners that would like to upgrade to cabs is another source of revenue. The same happens with those fleet companies that want to preserve their investments by replacing damaged cabs or canopies at a lower cost than the current implementation.

### **A Glance to the Future: Foundation for Localization**

In the near future—more close for some regions than for others—CASE will need to develop more strategic alliances for manufacturing local content. A good example is the China joint venture. In this regard, **the upper structure for Canopies or Cabs is a good candidate to consider for the localization program, offering low risk of losing proprietary know how.**

### **More Throughput**

The implementation of the two-piece ROPS approach will transfer some processes from the fabrication area to the assembly line. This would take CASE back to only one type of machine instead of "local" and "Malaysian Special" models. In other words, with only **one core product** all different country requirements will be satisfied.

Today one of the most scarce resources is the fabrication area. Then, moving some manufacturing from this bottle neck and using the idle capacity from the assembly line will increase plant throughput.

The previous considerations plus the fact that the resources allocated to build the “Malaysian Special” will be realigned to **only one** improved version, will drive into larger **Economies of Scale**.

### **Reduced order-to-delivery period**

**The improved Malaysian special approach would reduce the order-to-delivery period at a minimum cost.** Even if the dealer doesn't have at hand the Canopy or Cab upper structure, the lead time to order it from the plant should be considerably shorter than ordering a whole “**one piece**” ROPS, because there would be less fabrication process involved with this kit than with the current ROPS.

### **The Field Impact: Decreased Down time**

Total downtime for replacing a damaged cab would be reduced substantially **from days to hours**.

### ***How much would this approach cost?***

Certainly the flexibility proposed is NOT FREE. The cost of this will be directly related to the parts utilization of bolts and nuts versus weld. No marginal cost increase in a common electrical circuitry will be necessary, because both Cab and Canopy versions share the same wiring harness design.

A well done financial study of the cost of manufacturing the old two piece Canopy ROPS computed an extra manufacturing cost of US\$50 per unit—materials and labor—considering that the structure is split close to the middle of the B posts. A similar manufacturing cost should be required to implement this proposal.

**Owners, dealers, or CASE may be willing to pay up to twenty times more for having a finished unit in a shorter order-to-delivery period.**

For instance, assume that a dealer faces today the situation of having a "finished" 580SL with Cab as part of his security stock, but a customer requires one 580SL with Canopy. The customer would be forced to wait an average of 4 to 6 months to receive the machine. This means that the owner, the dealer, Case, or some stockholder is paying close to \$1,000 as a cost of opportunity for those frozen funds (i.e.  $US\$50,000 * 5\% / 12 \text{ months} * 5 \text{ months}$ .)<sup>1</sup>

### ***Conclusion***

**Analyzing this opportunity from the classic financial “allocation cost” perspective the initiative proposed is not viable. But the strategic value (i.e., the non measurable value) of this approach is by far more relevant than the extra dollars required to implement this approach.**

This proposal aims towards the “flexible manufacturing” world. In this arena CASE would set the game rules easily, just because it has a big opportunity having a common lower ROPS structure design across its Industrial Wheel family.

Best of all, if the modular ROPS approach is implemented, those buyers who prefer "Made in USA", those who prefer "Made in Malaysia", and even all those who prefer "Made in X country" will be **satisfied with one core product Made in USA**.

**That will give to CASE a competitive advantage.**

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<sup>1</sup> US\$50,000 investment required for ordering the machine, is deposited per five months yielding 5%