

## Maximizing Labor Savings with Radius Compound

By Bob Cottrell, CPIM

“We don’t need radius compound. We don’t have an air void problem.”

We have heard that often. And while preventing air voids is the number one reason most boat builders turn to Arjay’s Radius Compound, there is a second factor that may be much more important – even if air voids don’t pose problems.

The skin lamination is a very labor intensive step. Speeding it up represents a very real opportunity for a builder to save substantial amounts of money – perhaps double or triple that which can be realized in the more obvious savings in finish labor due to a reduction in voids. And what is most unfortunate, in our experience, is that few customers take full advantage of this potential.

Table 1

<b>ESTIMATING LABOR HOURS</b>		
Laminate Detail	Skin Step	Build Up Step
Simple	20	15
Moderate	40	30
Complex	60	45

Notes on this Matrix  
 Figures are “gross” labor hours, ie: includes breaks, setup, clean up, etc.  
 Based on Arjay laminating experience, 1974 to 1994

In an effort to quantify labor saving potential, Table 1 was developed during Arjay’s 20 boat building years. It represents a combination of actual labor hour data and common sense. As the complexity of a part increases in the form of multiple surfaces, tight radii, etc. so do the man hours required to laminate it. The numbers shown are expressed per thousand pounds of laminate, i.e. the total of resin and fiberglass. Since this discussion concerns radius compound the numbers in the “Skin” column are relevant.

The groupings of Simple, Moderate and Complex are an attempt to classify the parts in question by the relative intricacy of their design. Hulls would tend to be Simple while decks generally would fall under the Complex category. A liner may be Moderate or Complex based on its design. Different boat building companies will have different specific numbers depending on the exact processes employed and other factors. However, our experience suggests that the general concept is accurate enough to make some rough estimates of the potential labor savings involved in using radius compound in skin laminates.

Assume for a moment that it would be a reasonable objective to expect that the use of radius compound could move a Complex part to the Moderate category. From Table 1 it follows that doing so would save 20 man hours (60 minus 40)

per thousand pounds of laminate – a 33% reduction in labor! But what is the basis of even thinking that this is possible? There are a number of reasons to expect that these type savings are not unreasonable:

- Properly formulated radius compound contains mineral fibers that interlock with the glass fibers. This prevents the phenomenon generally referred to as “bounce back” where the glass fibers exhibit a tendency to return to their natural, straight configuration. Without radius compound this requires repetitive rolling of the same area to ensure even close to an air void free laminate. Radius compound makes it possible for the laminator to move much more quickly – kind of a “one and done” approach.
- Because radius compound fills up the space behind tight radii, it is possible to employ a larger air roller – bigger diameter and longer barrel – to roll out. This has the potential of speeding up the lamination process considerably. Laminators may be reluctant to give up their “detail” rollers and without some detailed coaching by the supervisor most likely won’t.

The above two factors allow radius compound to open the door to significant lamination labor savings. But they only make it possible to improve productivity. Managers must believe it can happen, set reasonable targets and follow through on the floor.

Take the Arjay Radius Compound Challenge. Put it to work for you. You will be surprised by the results.