



NORCAL

California Association of Flower Growers & Shippers
"Serving the Floral Industry Since 1941"

Norcal Box Standardization Study

June 2009

In June of 2008, industry logistics providers and the Norcal Transportation Committee met at the Logistics Summit in Oxnard. One of the outcomes of this meeting was the need to create box standardization. Additionally, in recent weeks, the GTIN meetings throughout the state have pointed out the critical need to create box standardization since GTIN is primarily an effort to create common standards.

The purpose of this study is to recommend flat and hamper standards that can be adopted by the California flower industry.

The intended result of standardization is cost containment and quicker transit times. It is envisioned that adoption of box dimension standards will create cost savings in both loading of trailers, which are giant jigsaw puzzles to load, and in inventory requirements by growers, shippers and box makers. Fewer sizes will allow larger runs when the boxes are made, resulting in cost containment. Trailer load yield will also be higher.

In the 1970's, there was much debate in the United States about the adoption of a metric or English standard of weights and measures used in commerce. While the metric system became more understood by the public and was adopted by the scientific community, by and large the English standard of weights and measures is the primary standard in the United States.

In the same manner, the California flower industry must decide on a common standard in the manufacture of shipping containers for its flowers and greens shipped throughout the United States. Since the most common method used to ship flowers is by truck, this study proposes using the PALLET as the STANDARD for all dimensions.

While all flower boxes may not be palletized in transit, it is now widely accepted by the logistics community that if boxes meet common dimensional relationships to the pallet, trailers are more easily loaded. The 40" x 48" pallet is universally used to transport goods worldwide. If boxes have a dimensional relationship to the pallet, meaning 48 or 40 inch lengths and hamper footprints which accommodate 40 and 48 inch dimensions, we have the basis of a standard. Richard Armellini of Armellini Express Lines stated in the June 2008 Logistics Summit that "in practice, they are

finding that pallet friendly boxes which they see used more and more each day, do translate into faster loading times with less difficulty.”

Additionally, since the vast majority of boxes are loaded into “bobtail” or “pup” trailers before they are consolidated on high cube 53 foot trailers, the average maximum height of a pallet is 92-93 inches. This allows 5 inches for the pallet and 87-88 inches for product. Considering cooling chutes in the ceilings of trailers, this height is practical. According to Fred Hooker with Sambrailo Packaging, the strawberry industry conforms to this same pallet height restriction as well.

In our study, we found that data of the boxes currently in use support boxes conforming to pallet dimensions. Over the last two years, large growers have adopted these pallet standards. The largest wholesaler in the U. S has also adopted these pallet standards as a requirement for supplying them with flowers.

The only major exception to this emerging standard is the 44 inch length used in about 22% of boxes shipped. It is our belief that 40 or 48 inch long boxes can accommodate all flowers shipped flat. We know this from the experience of many of the largest growers in the state. In an industry that pays for freight by the cube, 44 inches wastes space on every palletized trailer. Based on a 53 foot trailer, this can be 136 cubes per trailer. At \$4.00 per cube, that can mean \$544 dollars of wasted space on each load.

This study recommends the elimination of the 44 inch length box.

The study recommends the sizes listed below

48 inch boxes (all outside dimension)

48x20x06

48x20x08

48x10x06

48x10x08

48x20x12 is not recommended due to its extreme weight and difficulty to pre-cool. This box is usually packed very densely. It is usually the rejected hot box.

40 inch boxes (all outside dimension)

40x16x08

40x08x08

40x08x04

Hamper Footprints (all outside dimension)

10x12 (16 per layer) Procona
12x16 (10 per layer) Procona
12x13 (12 per layer)
13x20 (7 per layer)

Hamper Heights (layers usually limited by bobtail or pup door heights at 92-93 inches, all outside dimension heights)

22" (4 high)
28" (3 high)
34"
36"
44" (2 high)

There will be some exceptions until boxes can be designed or consolidated. This will be the next stage of our study. These are:

- **Gerbera Flats**
- **Glad Hampers**
- **Orchid plants and cuts flowers**
- **Plugs and plants**
- **Bales**
- **Northwest Greens and Florida Greens**

In the case of Florida Greens and Northwest Greens, we are working on a pallet friendly 24" x 20" outside dimension (od) box of various heights that could accommodate Florida and Northwest greens into common sizes. Even though these shippers typically use a few standardized boxes, they are not pallet friendly.

There is some evidence of wider acceptance of a 40 inch standard in the South American market. We have seen 40 inch tobaccos used by Sunburst Farms, one of the larger South American growers.

Corey Doel with Prime Inc. pointed out that the 40 inch standard is not just a California initiative He pointed out that it has some traction in the Florida import market as evidenced by Sunburst Farms and others. He suggested exploring this 40 inch concept in a broader way with Florida shippers. Norcal has been in contact with Christine Boldt with AFIF, The Association of Flower Importers of Florida, who confirmed a desire to see more box standardization in flowers imported and shipped from Florida and recognized the 40" box length as a viable standard.

It must also be noted that the Procona hampers are designed to fit the footprint of the pallet exactly. The Procona footprints are 10x12 and 12x16 and are in the

recommended footprint list. The Procona sleeves need to conform to the heights recommended in this study.

Additionally, palletizing is required by most mass marketers and if we adopt hubs for the distribution of California flowers and greens, palletizing will become more important.

Both Fred Hooker with Sambrailo Packaging and Bob Wilkins with Delaware Valley Wholesale Florist, spoke to the cube efficiency of loads, particularly with pallets. Fred commented that through proper standardized container design, the strawberry industry has seen up to 20% more efficient space utilization on trailers. Bob spoke to 100 percent space yield with 40 and 48 lengths while mixed pallets can yield only 70-80 percent of available space. He says “what are we going to do with the extra 300 cubes we cannot get on the truck, (when the yield is so low)?” It is interesting that in both cases it is clear trailers can be more dense with product with much less air. This can only translate into greater cost containment and revenue generation.

It is our belief that as these standards are accepted, there will be a time of critical mass in which boxes that are exceptions will be negatively incented.

How the study was conducted

The primary committee members working on this study were Robert Kitayama (Greenleaf Wholesale Florists, Chair), Chris Johnson (Norcal Director of Transportation), Andrew Muller (Armellini Express Lines) and Mike Crosby (Sun Valley Floral Farms).

We gathered box data from Andrew Muller and Richard Armellini of Armellini Express Lines, Ronen Koubi of Florida Beauty, and Corey Doel of Prime Floral. We also received the input from Fred Hooker of Sambrailo Packaging and Steve Clark of Robert Mann Packaging.

Additional input for this study was given by Bob Wilkins of Delaware Valley Wholesale Florists, Lane DeVries of Sun Valley Floral Farms and Jerome Everett of Continental Floral Greens.

Below is the data, organized into flats and hamper types by dimension. The data demonstrate clear evidence to make judgment about standardization.

The combined data of boxes shipped broke down as follows:

48 inch length boxes	31.8%
44 inch length boxes	22.1%
40 inch length boxes	13.2%
Other lengths	3.5%

Cube boxes	1.6%
Procona Hampers & Procona dimension hampers	8.3%
Hampers	10.6%
Miscellaneous sizes	<u>8.9%</u>
	100%

Of the 18.9% of boxes shipped that were hampers or proconas:

10 x 12 footprint	21.3%
12 x 16 footprint	23.9%
12 x 13 footprint	7.8%
13 x 20 footprint	30.1%
13 x 13 glad footprint	8.2%
Other footprints	<u>8.7%</u>
	100%

While 13" is not a perfectly pallet friendly dimension, 47% of hampers currently shipped use this dimensional factor. 3 times 13 equals 39 inches. They palletize in practice on the 40" side of the pallet.

Height percentages were as follows:

20, 21, 22, 23, 24, 25, 26, 27" combined	3%
28"	17%
29, 30, 31, 32, 33" combined	6%
34"	10%
35"	2%
36"	8%
40, 41, 42, 43"	8%
44" (with 45" the total is 35%)	31%
45, 46, 47, 48" (85% of this group are 45", 44" will suffice)	7%
49"	8%

We are recommending:

- 22" 4 High on a pallet
- 28" 3 High on a pallet
- 34"
- 36"
- 44" 2 High on a pallet

We will see if 48 inches can be an acceptable glad height. This is desired by the logistics carriers.

Implementation

Since this is a joint effort by NORCAL, logistics carriers, box manufacturers and growers, we feel that armed with common information, a common standard in the pallet, and common interests to promote our industry, we can soon reach a common standard used by the entire California floral industry.

Steve Clark with Robert Mann Packaging expressed strong support and willingness to put these boxes in the hands of shippers to “test drive” these boxes in their operations. We feel confident, based on the experience of many of the largest growers in California, that other growers and shippers will find these standard boxes quite adequate for any packing requirement. Fred Hooker suggested statewide packing workshops to demonstrate the usefulness of these box sizes.

We know that the box manufacturers will recommend these sizes to many grower shippers who buy stock boxes and can adapt. Any time larger runs of boxes can be manufactured, there will be cost containment. Also, inventory space is costly. Reducing sizes will economize space and help contain cost.

Norcal can help in recommending these specific sizes in the box logo program, where grower shippers help fund association cost by contributing 5 cents per box purchased. Contact Norcal if you would like to help contain association costs by participating in this program.

An additional Standard

There is one other standard that needs to come out of this industry effort. That is the way in which we record boxes. We have all heard length times width times height our whole lives.

One of the reasons we have so many “box sizes” is the incorrect reporting of the dimensions. 48 x 20 x 6 can be reported as:

48x20x06
06x20x48
20x06x48

Also, fractions of inches are rounded up or down. This leaves us with Prime and Armellini reporting over 1000 sizes.

The rule would be that flats would be reported as L x W x H. In the case above 48x20x06. In the case of a hamper like 10x12x28, the smallest footprint measurement is the length and the largest is the width and the height is obvious at

28". Side loaders should be reported in their upright dimensions, not the flat dimensions in packing before they are stood upright.

If we adopt a set of standards, all boxes would be reported the same. In the case of the Procona, 10x12 rather than (9.45 x 11.81).

This point also brings up another issue in box size reporting on Way Bills. Over-packing results in bulging boxes. Like a baby boomer who still "fits in to those 32" waist jeans", the excess bulging over the edges must be accounted for. Accurate reporting of box sizes means rounding up and accounting for the space used, so trailers are not overloaded. Besides, the bulging is not healthy for the flowers or the boomer.

This effort will take time to develop acceptance and implementation. Old inventories will need to be used up.

One concern will be the desire for "my" box to be exempt from the standard. The reasons for this sentiment will be as follows:

- 1) I own plates and dies for boxes I currently ship that are not according to standard. For custom boxes, retooling can cost \$2500 to \$4000 per box size. Steve Clark with Robert Mann packaging spoke to this issue by pointing out that if a box is standardized, this cost can be cut almost in half as only the printing plate needs to be retooled since one large run of a common box can use multiple printing plates on the same run by the box manufacturer on a industry common die.
- 2) My flowers won't fit in these boxes. There may be exceptions but many growers and shippers that are adopting this standard have found their flowers fit in these dimensions.
- 3) Why don't we exempt the 44 inch boxes from the standard?
 - The point is they don't conform to the standard derived from the pallet.
 - Growers and shippers will be able to adapt to using the "new sizes".
 - Bob Wilkins of Delaware Valley makes the point from his experience that there is a definite "crush factor" that rules out the 44 inch length. "The other point that needs to be broadcast is the quality of the loaded pallet. In the past, with all kinds of mixed boxes on a pallet, there were many crushed boxes. Today, loading only 40 inch or 48 inch flat boxes, pallets are built perfectly and we have "0" issues with crushed boxes at this time." Since 44 inch boxes don't match the footprint of the pallet, overlapping boxes on top of the 44 inch box crush the end of the 44 inch box. We all know that the strongest part of the box is the corner and the edges. Placing them squarely on the edges of the pallets supports this strength.

There will be other concerns to address, but this study has articulated a path to standardization. This path has been elusive and much maligned as a collective failure. “We have been working on this for 30 years and no one has done anything about it” has been the common refrain.

Bob Wilkins summed it up by stating, “We all may be on a path to have California flowers shipped in a box standard matrix which will in the end, lower the cost per stem/bunch to the customer of California flowers. It is really the responsibility of the grower/ shippers to be part of the program. It is not enough to just “sell the flowers and pack the boxes” and let others worry about how to “lower the cost of goods” in regard to efficient logistic systems. We are all in the “Flower Business” and need to support each other.”

The path is clear and we can do something about it.

NORCAL Logistics Committee June, 2009