Understanding Alcega's Tailor's Patterns

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A common unit of measurement in the middle ages for lengths of cloth was the ell. Though commonly used, there is no set length to for an ell. In England, an ell now equals 45 inches(1). The world ell comes from the Latin *ulna,* which originally meant elbow. It is thought that it comes from the tradition of measuring lengths of cloth with two forearms, with the hands touching or overlapping(2). Another explanation of the origins of the ell is the distance from your shoulder to your wrist or finger tips(3). A Flemish ell is 27 inches and a Scottish ell is 32.7 inches(4).

Understanding the ell is important for reproducing Alcega;s patterns from his Tailor's Pattern Book of 1589. In it he goes on to explain to his readers that he is using the ell from Castile, also known as a bara. Alcega states that the ell,

"Had it's source and origin in another measure called the dedo, or finger's breadth."

he goes on to later to add that the,

"Dedo which is the space occupied by four grain of barley placed side by side. And since there are many different sizes of barley, and one person might take the broadest, and another the narrowest you will notice that the measure of the ancient Roman foot, which the Romans used, and from which the longer measures are derived, is 16 times 11/16th of an inch and the length of this is called one dedo. And thus we have the proper size of the grain of barley, which is original of the Roman measures, and how many make one dedo, and how many dedos make one Roman foot, which is equivalent to a third of a Castilian ell."

From this information we can see that 1 dedo is 16 times 11/16th of an inch which comes to 11 inches. Also he states that it takes 3 dedos to equal one Castilan ell, so we now know that fore Alcega 1 ell is equal to 33inchs.

Alcega goes on to explain how the ell can be subdivided into smaller measurements.

"The Castilian ell is divided into a twelfth, an eighth, a sixth, a quarter, a third, and a half: and all these divisions of the ell are prefect fractions relative to the ell itself, since each divisions constitutes one half or an exact third, or in some cases one half and an exact quarter part. It is not divided into a fifth, nor a seventh nor a ninth, since those are uneven numbers and do not have an exact half."

All of his patterns are based on this. He even mentions when converting from the amount of cloth given to a shorter width. That when you calculate the new length that you should reduce to the nearest fraction, so that a fifth becomes a quarter and a seventh becomes a sixth and so on.

Alcega and others did not write the numbers directly on their pattern pieces but instead used symbols, b = 1 ell, m = ½, t = 1/3, Q = ¼, S = 1/6, o = 1/8 and d = 1/12. The symbols comes from the Spanish name for each, b = Bara, m = medio (half), t = Tercio (Third), Q = Quarto (Quarter), S = Sesto(sixth), d = dozuao(twelfth), o = octavo(eighth). Now these symbols then can be combined to represent any number that you need. There are a couple of simple rules to follow, any similar symbols back to back you add together, so bb equals 2 ells, QQQ equals ¾, tt equals 2/3, etc. If a symbol that is followed by a lesser symbol you also add. So

Symbol	number
b	1
m	1/2
t	1/3
Q	1/4
S	1/6
o	1/8
d	1/12
bij	1 1/24

bm = 1 ½ ells, mo equals 5/8, etc. Now if a lesser symbol proceeds a great symbol you subtract. So db equals 11/12, ob equals 7/8, sb equals 5/6. If we wanted to show we have two and eighth ells of cloth, that would be bbo, where two and five sixths ells would be represented by bbsb. Alcega also use V for five, so six ells would be Vb but four ells he still represents with bbbb, for ten he uses x and again 11 would be xb but unlike with four, nine is represented by bx.

Alcega patterns are done in the customs of the trade during 1580's and gives us details how to read them.

"Note at the top of each pattern is the name of the garment followed by a cross. After that comes the amount of cloth in ells required for the garment and then, between two lines, th width of the cloth, silk or other fabric."

also another statement that helps us understand the patterns themselves,

"Unbroken lines show where to cut with scissors, and that dotted lines show where there are to be extra-pieces (piecas), piecings (camas) or godets (cuchillos). Inside these dotted lines here will be capital letters corresponding to letters in other pattern pieces and thees must be placed together with the nap running in the same direction (a pelo)."
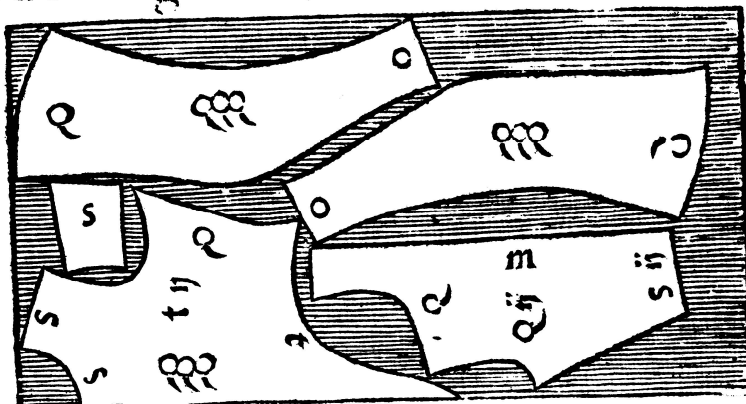
Lookingat Alcegapattern on f.23 we see at the top of the page "Capa, y ropilla de raxa. + bbbbQ |btt|" this would translate to cloak and cassock of cloth rash. (cloth rash would be cloth with no nap, the direction of the pattern pieces does not matter.) 4 1/4 ells by 1 2/3 ells. Now to convert that into modern cloth. We know that 1 ell is 33 inches. So the 4 ¼ ells would be 140 ¼ inches or just over 3 yrds 32 ¼ inches by 55inches wide. Cloth that was available to Alcega ranged from silks being 2/3's of an ell and fine cloths from Segovia and elsewhere are usually 2 ells also there were many woolen and rash cloths available of different widths. Modern cloth is available 45 inches or 50-60 inches. So for Alcega's patterns we must go with either a 1 1/3 ell or 1 2/3 ell in width. So 4 yards at 60 inch wide fabric would be more then enough for the cloak and cassock pattern. But if we wanted to do a Balandran cloak of cloth (f.53) which requires 5 ¾ ells by 2 ells. Two ells is 66 inches which is wider the the cloth we have avaiable. We have to look at Alcega's tables to convert that to 1 2/3 ells in width. Looking at the chart we can see that ½ ell at 2 ells wide is equal to 5/8 ell at 1 2/3 ells, from this we can calculate that 5 ¾ ells at 2 ells width would be equivalent to 6 7/8 ells at 1 2/3 ells. So width 60 inch wide cloth we would need 6 1/3 yards.

Now that we looked at the theory and practical use, let's look at the math. In converting the numbers, I don't know anyone that goes to the fabric store and asks for 5.213432333 yards of fabric. So we are going to round the amounts up, I usually by fabric in the whole yards, I may only need 2 and 3/8 yrds but hey you never know what you might use that other 5/8's of a yard for. But of course there are people on a budget and that extra 5/8's of a yard is noticeable when buying expensive fabric. So we are going to use an eighth as our lowest amount, also in doing the math all decimals will be truncated to the third place holder. We know that 1 ell = 33 inches 36 inches = 1 yrd. That means if we multiple the given ells by .917, then round the answer to the nearest eighth of a yard. So 3 and ¼ ells equals 2.98 yards so you would buy 3 yards of material, 2 and ½ ells would be 2.293 yards or 2 and 3/8 yards.

ell	0	1	2	3	4	5	6	7	8	9	10
0	0yrds	1yrd	1 7/8yrds	2 7/8yrds	3 3/4yrds	4 5/8yrds	5 5/8yrds	6 1/2yrds	7 3/8yrds	8 3/8yrds	9 1/4yrds
1/16	1/8yrds	1yrd	2yrds	2 7/8yrds	3 3/4yrds	4 3/4yrds	5 5/8yrds	6 1/2yrds	7 1/2yrds	8 3/8yrds	9 1/4yrds
1/8	1/8yrds	1 1/8yrds	2yrds	2 7/8yrds	3 7/8yrds	4 3/4yrds	5 5/8yrds	6 5/8yrds	7 1/2yrds	8 3/8yrds	9 3/8yrds
3/16	1/4yrds	1 1/8yrds	2 1/8yrds	3yrds	3 7/8yrds	4 7/8yrds	5 3/4yrds	6 5/8yrds	7 5/8yrds	8 1/2yrds	9 3/8yrds
1/4	1/4yrds	1 1/4yrds	2 1/8yrds	3yrds	4yrds	4 7/8yrds	5 3/4yrds	6 3/4yrds	7 5/8yrds	8 1/2yrds	9 1/2yrds
5/16	3/8yrds	1 1/4yrds	2 1/8yrds	3 1/8yrds	4yrds	4 7/8yrds	5 7/8yrds	6 3/4yrds	7 5/8yrds	8 5/8yrds	9 1/2yrds
3/8	3/8yrds	1 3/8yrds	2 1/4yrds	3 1/8yrds	4 1/8yrds	5yrds	5 7/8yrds	6 7/8yrds	7 3/4yrds	8 5/8yrds	9 5/8yrds
7/16	1/2yrds	1 3/8yrds	2 1/4yrds	3 1/4yrds	4 1/8yrds	5yrds	6yrds	6 7/8yrds	7 3/4yrds	8 3/4yrds	9 5/8yrds
1/2	1/2yrds	1 1/2yrds	2 3/8yrds	3 1/4yrds	4 1/4yrds	5 1/8yrds	6yrds	7yrds	7 7/8yrds	8 3/4yrds	9 3/4yrds
9/16	5/8yrds	1 1/2yrds	2 3/8yrds	3 3/8yrds	4 1/4yrds	5 1/8yrds	6 1/8yrds	7yrds	7 7/8yrds	8 7/8yrds	9 3/4yrds
5/8	5/8yrds	1 1/2yrds	2 1/2yrds	3 3/8yrds	4 1/4yrds	5 1/4yrds	6 1/8yrds	7yrds	8yrds	8 7/8yrds	9 3/4yrds
11/16	3/4yrds	1 5/8yrds	2 1/2yrds	3 1/2yrds	4 3/8yrds	5 1/4yrds	6 1/4yrds	7 1/8yrds	8yrds	9yrds	9 7/8yrds
3/4	3/4yrds	1 5/8yrds	2 5/8yrds	3 1/2yrds	4 3/8yrds	5 3/8yrds	6 1/4yrds	7 1/8yrds	8 1/8yrds	9yrds	9 7/8yrds
13/16	3/4yrds	1 3/4yrds	2 5/8yrds	3 1/2yrds	4 1/2yrds	5 3/8yrds	6 1/4yrds	7 1/4yrds	8 1/8yrds	9yrds	10yrds
7/8	7/8yrds	1 3/4yrds	2 3/4yrds	3 5/8yrds	4 1/2yrds	5 1/2yrds	6 3/8yrds	7 1/4yrds	8 1/4yrds	9 1/8yrds	10yrds
15/16	7/8yrds	1 7/8yrds	2 3/4yrds	3 5/8yrds	4 5/8yrds	5 1/2yrds	6 3/8yrds	7 3/8yrds	8 1/4yrds	9 1/8yrds	10 1/8yrds

Orginal

Iubon de muger a ſeda abierta. ✠ bbm | tt |

Listed in Ell's

Iubon de muger a ſeda abierta. ✠ 2 1/2 | 2/3 |

1/8
1/4   3/4   3/4   1/4
1/6   1/8
1/6   1/4
1/6   3/8   1/2   5/24
1/6   1/4   7/24
1/6
1/6   3/4
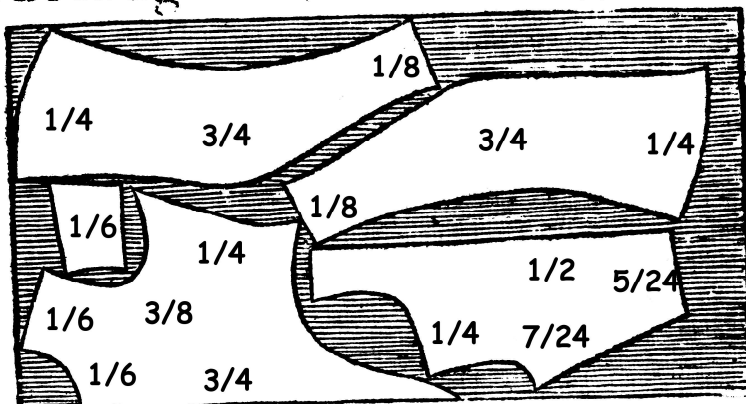
Listed in inches

Iubon de muger a ſeda abierta. ✠ 2 3/8yd | 22" |

8 1/4"   4 1/8"   8 1/4"
24 3/4"   24 3/4"
5 1/2"   4 1/8"
8 1/4"
16 1/2"   6 7/8"
5 1/2" 12 3/8" 11"   8 1/4" 9 5/8"
5 1/2" 24 3/4"
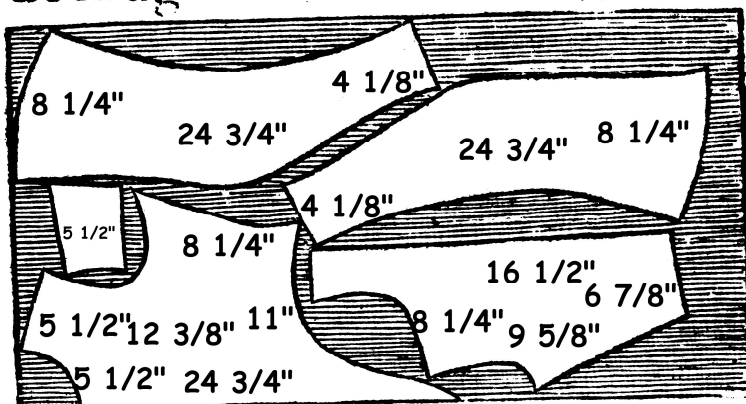
(1)Merrian-Webster dictionary

(2)A dictionary of measuring units (http://www.unc.edu/~rowlett/units/dictE.html)

(3)Measurements in the middleages (http://www.personal.utulsa.edu/~marc-carlson/history/measure.html)

(4)Usesful Odds and Ends complied by Ioseph of Locksley, OL, Pel, &c (http://www.locksley.com/locksley/append.htm)

(5)Tailor's Pattern Book 1589 Juan de Alcega
    ISBN 0-89676-234-3