

## Biblical Weights and Measures—Metric Version

The EHV usually translates ancient measurements into modern measurements, except when it is necessary to retain the ancient measurement in order to preserve the symbolism of the numbers in the text. For example, when a city measures 12,000 x 12,000 stadia, or when one ancient measurement is explained in terms of another ancient measurement (an omer is ten ephahs), the ancient unit of measurement is retained in the translation. When a modern measurement is used in the text of the translation, footnotes usually supply the ancient measurement, and vice versa.

The base edition of the EHV uses the American system of weights and measures, such as feet, pounds, gallons, etc., with occasional reference to metric measurements. The American system (US Customary Units) is similar to the Imperial system, which was widely used in the British Empire. This international edition of the EHV converts ancient measurements into the metric system of meters, liters, kilos, etc., which is used in almost every country of the world. (There has been no effort to convert American usage of words into British or international usage. Publishers can obtain licenses to do that if they wish.)

Ancient measurements were not based on a universal official standard stored by a governing body, as modern measurements are. They varied depending on the body size of the measurer or on the size of the container used to make the measurement. Since there was no universal standard for ancient measurements, all measurements used in the EHV are only approximate.

The use of ad hoc standards, which was the basis for much of the ancient Middle Eastern system, was also the original basis of much of the old English system. The old English *foot* was the length of a man's foot, and the *yard* which was the distance from the tip of the nose to the end of fingers. This obviously led to minor inconsistencies in the measurement systems because of the different body size of different individuals and ethnic groups. An ancient *cubit* was the distance from the fingertip to the elbow. Scholars use a standard cubit of 18 inches (46 cm), but the cubit of a typical 6-foot-tall man is 19½ inches. An ancient *span* was the distance from the tip of the little finger to the tip of the thumb with the hand spread out. Scholars use a span of 9 inches (23 cm) but the span of a typical 6-foot-tall man is 10 inches.

The value of ancient units of measurement was also inconsistent over time. In the case of some New Testament terms, we sometimes are not sure if they are correlating to Old Testament Hebrew terms or to contemporary Greek standards.

There is also considerable disagreement about the value of some ancient units of measurement such as the talent, cor, and bath. Estimates for the talent vary from 20 to 50 kilos. Estimates for the cor vary from 130 to 225 liters. The estimates for the bath vary from 19 to 27 liters. This obviously will produce some large discrepancies in the figures provided in various translations and commentaries.

Each specific temple, palace, administrative unit, or building project probably had its own standard, which was recorded on a set of measuring sticks or cords. What was important was not that the same standard was used everywhere, but that individuals used the same standard when buying and when selling commodities.

For this and other reasons, the precise value of nearly all of the ancient units of measurement is uncertain, so all figures used in any translation are approximations. Calculations in the EHV are usually rounded off to the nearest full unit to avoid giving values like 8.765 liters, which would give a false impression about the precision of ancient measurements. In rounding off, an attempt is made to preserve the ratio of the two measurements that are being compared.

A further complication in assigning modern values to a commodity in the text is that the ancient Israelites sometimes used units of volume to measure commodities that we usually measure by weight, at least when dealing with large quantities. We would probably not refer to 15,000 liters of wheat.

## Table of Measurements

**Using the Table: The proposed values are not precise enough for calculating large quantities exactly. Various conversion tables and apps do not agree on the value of the individual units of measure. This table is for the most part based on the Oxford Set of Standards. The table uses precise estimates, but in practice the EHV will use rounded-off calculations. Other conversion tables would yield different results, sometimes significantly different.**

### Measurements of length in meters:

cubit=0.46 m, or a long cubit of 0.53 m (a cubit and a handbreadth), but the EHV for the most part uses the approximation, 0.5 meter per cubit in making calculations. Most measurements in the EHV text will be rounded off *after* the calculation has been made using the more precise standard.

span=23 cm

handbreadth=8 cm

thumb or finger=1.8 cm or 2 cm

reed or rod=2.7 m

fathom=1.8 m

stadium/stadion=183 m (but not all actual stadiums were the same length)

Roman mile (1000 paces)=1479.5 m

Sabbath day's journey=0.97 km

### Dry measure by volume:

cor/kor=homer=10 ephahs= about 230 liters or a bit less

ephah= 22.9 or 23 liters

one tenth of a ephah=2.3 liters

two tenths of a ephah=4.6 liters

three tenths of an ephah=6.9 liters

letheq=115 liters 114.9

seah=saton=1/3 ephah=7.7 liters (some estimate as much as 11 liters)

modios=8.5 liters

omer=1/10 ephah=2.3 liters

choenix=quart=1.1 liter

### Liquid measure by volume:

cor=10 baths=230 liters or 220 liters

bath=ephah=6 hins= about 23 liters or 22

hin=3.9 liters

kab=4 logs=1.3 liters

log=0.32 liters

xestes=0.53 liters

Greek metretes/measure=39 liters

### Weights:

kikkar=talent=34.3 or 35 kg (estimates vary greatly)

mina=0.57 kg (estimates vary greatly)

shekel=11.3 g

pim=9.5 g

beka=5.7 g

gerah=0.57 g

daric=8.5 g

Roman pound/litra=0.34 kg

denarius=this coin did not have a standard weight, in part, because of currency debasement

REMEMBER ALL MEASUREMENTS ARE APPROXIMATE. ATTEMPTS TO CALCULATE RESULTS TO SEVERAL DECIMAL POINTS ARE NOT MEANINGFUL. FREQUENT FOOTNOTES WILL COMMENT ON THE MEASUREMENTS.