GUIDO DA VIGEVANO

by John H. Lienhard

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Today, we meet a medieval inventor. The University of Houston's College of Engineering presents this series about the machines that make our civilization run, and the people whose ingenuity created them.

The glorious High Middle Ages were dying out when the Hundred Years' War began in 1337. For over two centuries Europe had directed remarkable energy into new technology that was both liberating and civilizing. But she'd also directed this energy into a set of eight crusades. At first the crusades reopened pilgrim travel to Jerusalem. They also opened up East-West commerce of goods and ideas. Both Moslems and Europeans had the strength of religious tolerance and open-mindedness at the outset.

The crusades led both sides to trade all that for the most self-destructive sort of prejudice and hatred. Fragmentary crusades still went on during the Hundred Years' War, as the Moslems finally drove the Europeans out. But now a dyspeptic Europe, engulfed in religious persecution and internal war, was turning its bile on itself.

In 1335, as the High Medieval Period was ending, a physician and engineer named Guido da Vigevano attached himself to Philip VI of France, whom he expected to go on an obligatory crusade. To strengthen his position with Philip, Guido wrote a sort of crusade handbook for him. Nine folios of the book advise the king on how to look after his health on the journey, and the other 14 folios advise him in military technology.

Historian Rupert Hall points out muddy inconsistencies between the text and sketches of military apparatus. But in broad outline, Guido's devices are clear enough; and they're a kind of last breath of the soaring medieval imagination.

Guido recognizes that wood is hard to find in the Holy Land, so he advises breaking siege equipment into prefabricated elements that can be carried on horses. He says a lot about joints and assembly. He includes folding attack boats and pontoon bridges. He's designed two self-propelled battle wagons. One's crank-driven, and the other's powered by a very sophisticated windmill. He proposes innovative body armor and siege equipment.

King Philip never got to the Holy Land, and no one ever tried to build Guido's wonderful machinery. Two years after Guido presented his book, Philip started the Hundred Years' War by seizing an English-held duchy in what is now southwestern France.

Today I look at Guido's marvelous Picaso-like sketches -- without perspective or three-dimensionality -- ideas tumbling one over the other -- a kind of fantasy armory for

beating back a fantasy enemy, while the practical world outside was bent on a far more straightforward kind of self-destruction.

I'm John Lienhard, at the University of Houston, where we're interested in the way inventive minds work.

(Theme music)

Hall, R., [title unknown]. Humana Civilitas: Sources and Studies Relating to the Middle Ages and the Renaissance. Vol. I, *On PreModern Technology and Science*. (B.S. Hall, D.C. West, eds.) Malibu: Undena Publications, 1976.

I am grateful to Pat Bozeman, Head of Special Collections, UH Library, who drew my attention to this source and made her uncatalogued copy available to me.

This episode has been greatly revised as Episode 1562.