

MASSIMO PERNA

THE ROUNDEL IN LINEAR A FROM ZAKRO Wc 2 (HM 84)*

The only known roundel in Linear A from Zakro was discovered by D. G. Hogarth in May 1901 in Room no. 8 of House A.¹

The roundel came from an approximately circular area (about 1.50 m. in diameter) where a tablet in Linear A, plus about five hundred clay sealings and, in particular, three sealings with seal impressions in hieroglyphic script were found.

These documents were mixed with some bronze utensils and an abundance of ceramics. The fact that the sealings, the tablet and the roundel were found at a certain height above the floor and on the same spot, suggests that they were all stored together on the upper floor.

The destruction layer in which they were found is dated between LM I A and LM I B.²

In 1901 Hogarth announced the discovery of these documents and with regard to the roundel with an inscription in Linear A, stated: "... a roughly circular tablet (28 mill. diam.) of fine baked red clay, bearing on one face an inscription ... traced with a fine point, and on its rim two 'countersigns' impressed faintly with a signet-gem (type two wild goats). On another part of its rim appears also the impress of some textile material."³

The following year, Hogarth, at the end of his publication of the sealings from Zakro, produced but a very approximate drawing of the inscription, without an adequate comment.⁴

* I am most grateful to the Director of the Heraklion Museum, Dr. Ch. Kritzas, for facilitating my studies in the Museum, and to T. Iacono for the translation of the text.

¹ D. G. Hogarth, "Excavation at Zakro, Crete", BSA 7, 121-149.

² For the destruction date of House A in Zakro, vid. J. Weingarten, *The Zakro Master and his Place in Prehistory*, Göteborg 1983, 3-6.

³ D. G. Hogarth, *op. cit.* (supra n. 1), 133.

⁴ D. G. Hogarth, "The Zakro Sealings", JHS 22, 76-93.

Finally, in 1979 L. Godart and J.-P. Olivier published the inscription on the roundel in GORILA 2.⁵

There is not, as yet, a complete publication of the document which includes the inscription itself, the seal impressions, the incisions on its rim and the physical characteristics of the document (colour, quality and baking of the clay), and which might enable us to understand its relationship with the sealings and the tablet in Linear A. For it must not be forgotten that the contemporary presence in Zakro of documents in both hieroglyphic and Linear A raises a series of questions, concerning not so much the coexistence of both scripts as the persistence of hieroglyphs into LM I B.

Until recently, the discovery of seal impressions in hieroglyphs from House A has found its logical explanation in that some seals of MM III could possibly have been used as late as LM I B, but the recent discoveries by M. Tsipopoulou at Petras in the Gulf of Sitia have radically changed the chronological context of the Cretan hieroglyphic inscriptions.

In Petras, apart from a seal impression in hieroglyphs on the handle of an amphora coming from Gournia dated to MM II B, M. Tsipopoulou found a 'medallion' with an inscription in hieroglyphs on both sides and some loom weights impressed with sign no. 20 in hieroglyphic, documents dating with certainty to LM I B.⁶ These documents in hieroglyphic, about 150 years more recent than the hieroglyphic script of Mallia Palace, leave no doubt that at least in the east of Crete hieroglyphs were still used in 1450, and thus coexisted with Linear A till the destruction of the Second Palaces.

Description

Dimensions: 3.00 x 2.80 x 1.20 cm. Completely preserved roundel. Clay brick reddish (Munsell Code HUE 2.5YR 4/6 red), well baked, gritted with minuscule whitish inclusions. Fingerprints clear only on the edge.

⁵ L. Godart – J.-P. Olivier, GORILA 2, 98.

⁶ These documents were discovered during the campaigns of 1991 and 1992 and are to date unpublished. I would like to express my gratitude to Dr. M. Tsipopoulou, who has allowed me to examine the documents preserved in the Sitia Museum and to discuss them in this article.

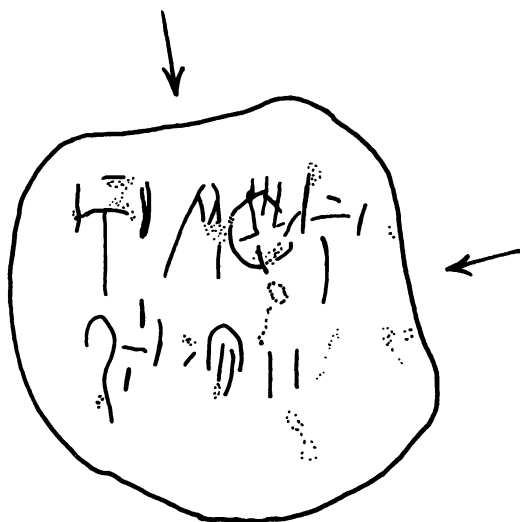


Fig. 1. ZA Wc 2, obverse (drawing M. Perna)

The obverse (Fig. 1 and Pl. 1) shows a surface which is very concave, irregular and unpolished, from which minuscule whitish inclusions emerge mixed with the clay. It carries an inscription of six signs in Linear A arranged in two lines. Some of the signs are quite deeply impressed while others appear to be damaged. The inscription seems to have been inscribed in palimpsest (*vid. infra*).

The reverse is uninscribed, its surface is very concave, unpolished and irregular.

The edge bears two seal impressions of identical kind and impressed in the same direction. Small missing fragment of clay between the two impressions with emergence of a large grey inclusion. Evident impression of textile material visible on the unimpressed part of the rim.

The edge, finally, shows two deep parallel strokes drawn obliquely to the major axis of the edge and a small arrow lightly engraved which ends at the longer stroke (Pl. 2).

The Inscription

- .1 AB 08-37-77 AB 08
- .2 AB 51 AB 70 2

The inscription poses a series of questions. Some signs appear to have been altered, as if flattened through accidental contact with the fingers; but fingerprints, however minimal, are nowhere to be found on the obverse.

The inscription consists of two lines of writing; four signs in the first line and two in the second.

The first sign in the first line, sign AB 08, appears here with two horizontal strokes, a variant documented on the tablets from both Zakro and Haghia Triada (ZA 10 a.2, HT 14.3). The sign does not seem to be damaged.

Sign AB 37 has two small convergent oblique strokes, a shape well documented at Zakro (ZA Zb 3.2). A small smear of clay on the right side of the sign is flattened, which suggests accidental contact with the fingers.

Sign AB 77 is of a common shape, with two internal crossing lines. The right part of the sign is damaged; the clay, in fact, seems to have been compressed, but without affecting readability. Beneath sign AB 77 can be distinguished faint traces of an erased sign, which might conceivably be sign AB 28. It could be the case that the scribe, after writing sign AB 77, realized that traces of the previous sign prevented a clear reading of the new one, and therefore tried to erase the remaining traces of sign AB 28, perhaps by using the flat part of the stylus.

The last sign in line 1 is, once more, sign AB 08, again with two horizontal strokes, perfectly legible.

The first sign in the second line is the least readable of all. L. Godart and J.-P. Olivier⁷ convincingly identify it as sign AB 51. They also underline the presence of a trace of a sign between AB 51 and AB 70.

The last sign in the second line, AB 70, has its usual shape and is not at all damaged. It is followed by 2 units.

The second of these units, together with a small scar in the clay, has been hypothetically identified by Godart and Olivier as sign AB 73, but the two scholars regard it as palimpsested and are of the opinion also that the first of the 2 units is but the trace of a badly erased sign.⁸

By means of a detailed analysis of the roundel and of greatly enlarged photographs, I have reached the conclusion that there is no

⁷ L. Godart – J.-P. Olivier, *op. cit.* (supra n. 5), 98.

⁸ *Loc. cit.* (supra n. 7).



Pl. 1. ZA Wc 2 obverse (scale 2 : 1).



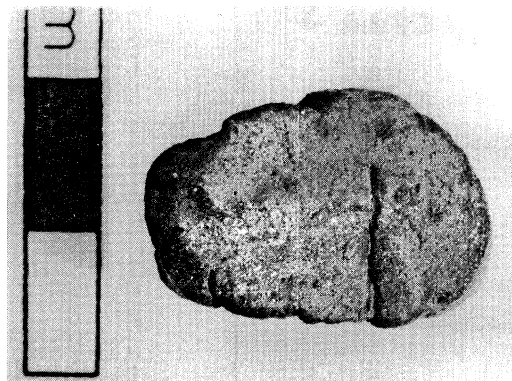
Pl. 2. ZA Wc 2, incision on the edge (scale 2 : 1).



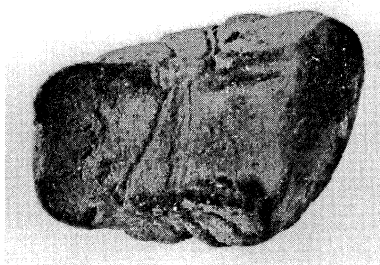
Pl. 3. ZA Wc 2, seal impression on the edge (scale 2 : 1).



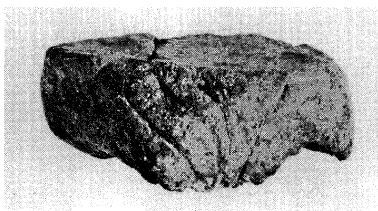
Pl. 4. ZA Wc 2, seal impression on the edge (scale 2 : 1).



Pl. 5. Za Z 1132, obverse (scale 2 : 1).



Pl. 6. Za Z 1132, reverse (scale 2 : 1).



Pl. 7. Za Z 1132, “vue cavalière” (scale 2 : 1).

question of a palimpsest here. The hypothetical oblique stroke of AB 73 seems to be merely a superficial crack in the clay.

The reason that the palimpsest hypothesis does not strike me as convincing is that sign AB 70, together with the 2 units, is in fact the least damaged section of the text. Moreover, the clay between the second unit and the presumed oblique line of AB 70 is completely untouched. It does not show any traces, however minimal, of a sign, unlike the horizontal line of AB 51 which, despite being obliterated, nonetheless does show its original incision.⁹

If we assume a break after the third sign in line 1, the text inscribed on the roundel consists of two words separated by a punctuation mark, and a syllabogram with an ideographic or acrophonic function, followed by the numeral 2.

The first word, AB 08-37-77 [A-TI-KA], is a hapax, while the second, AB 08-51 [A-DU], is well known in Linear A texts (8 references: HT 85a.1, 86a.4, 88.1, 92.1, 95b.1, 99a.1, 133.1 and KH 23.1) as an introductory word which always appears at the beginning of a record and which is never followed by numerals. The word AB 08-51 [A-DU] also appears in combination with other syllabograms:

AB 08-51-27-17	[A-DU-RE-ZA]	KH 11.1
AB 08-51-17	[A-DU-ŽA]	PK 1.2
AB 08-51-27[[A-DU-RE[KH 4.1
AB 08-51-[. .]	[A-ĐÜ-. .]	TY 3a.3
AB 08-51-30-59-06	[A-DU-NI-TA-NA]	ARKH 5.1
AB 08-51-81-73-06	[A-DU-KU-MI-NA]	ZA 10a.3-4

In compounds also, the word [A-DU] appears almost always at the beginning of a record. Finally, it is worth pointing out that, alone or in combination, the word [A-DU] is used on six sites from the east to the west of Crete.

Therefore, [A-DU] must be a key word in the economic vocabulary of Linear A texts. The inscription closes with the syllabogram AB 70 [KO], used either with its ideographic or acrophonic value, and it probably refers to a product recorded on the roundel in the quantity of 2 units.

⁹ L. Godart, who has had the opportunity to re-check the roundel inscription, has confirmed the new reading of line 2 and my interpretation of the palimpsest.

The Seal Impression

Dimensions of the seal on Za Wc 2: 1.30 x 1.10 cm.

Dimensions of the seal on Z 1132: 1.85 x 1.30 cm.

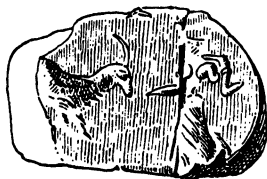


Fig. 2. The sealing of Zakro Z 1132 obverse (drawing E. Stefani)

The two shallow impressions belong to seal no. 191 of Levi, which also appears on the sealing of Zakro Z 1132. It portrays a female figure with a long dress which bends inwards between the legs (Pls. 3 and 4). Her waist is narrow, and her slim body becomes rounded at the bosom. The left forearm is curved upwards while the right arm, together with the trunk, is turned round in the act of grasping or pulling a goat (*agrimi?*) of which only a horn and the front part of the body with its curved profile can be distinguished (Fig. 2 and Pl. 5). But on the roundel only the right half of the motif is present. The seal impression on the sealing is very shallow, and, what is more, damaged. A crack runs right across the impression, damaging the right part of the female figure. Such a crack is an accident due to the manner of sealing. On examination of the reverse of the sealing, one realizes that it is very likely to have sealed a small roll of perishable material such as parchment. The ends of this small roll were folded back, one under the other, and the roll tied by very thin cord (Pl. 6). A clay disk was then placed on the folded roll and fastened by the pressure of fingers on the clay around the roll. Finally, in order further to secure the sealing, the ends of the cord were pushed into the clay from the obverse (Pl. 7). Later, the clay was polished and flattened so as to receive the impression of the seal but, as a consequence of the pressure exercised by the seal, one of the ends of the cord came out, thus producing that vertical crack which damages the motif of the impression.¹⁰

¹⁰ For the function and techniques of the Zakro sealings see J. Weingarten, *op. cit.* (supra n. 2), 38–42.

The roundel and the sealing were impressed with the same seal and it seems to follow that the administrative procedures underlying the two documents were performed by the same official.

Two other factors which also connect the two documents are the quality and colour of the clay. The clay, is, in fact, in both cases fine and pure, and the colour of the two documents differs only slightly (Munsell Roundel Code HUE 2.5 YR 4/6, red; Munsell Sealing Code HUE 2.5 YR 5.5/6, light red) probably through differential baking.

These elements – seal impression, quality and colour of the clay – seem to confirm what Hogarth hypothesized on the basis of the date of the find: that the sealings and the roundel originate from the same area.

The Function of Roundels

E. Hallager proved that there is a correspondence between the size of a roundel and the number of seal impressions on its edge. He reached the conclusion that, at the time of the roundel's production, the number of seal impressions it should bear was known in advance.

Furthermore, the Danish scholar, on the basis of his analysis of the roundels which simultaneously show both numerals and seal impressions, has posited that the number of seal impressions on the edge of the roundel corresponds to the number of units of the product recorded on the roundel itself.¹¹

Roundels bearing both numerals and seal impressions number only four.

1) GO Wc 1 which has the ideogram BOS followed by the numeral 5 incised on its reverse, and on the rim five seal impressions.

2) HT Wc 3024 shows on the obverse the ideogram AB 21 followed by 6 units and six seal impressions on its rim. This roundel constitutes a highly significant example, since not only is there a perfect correspondence between the numerals of the text and the number of seal impressions, but on the rim there are traces of a seventh impression which was deliberately obliterated.

3) MA Wc <5> is a document which is lost, but we have the publication of its discoverer F. Chapouthier, who states that the roundel bore a seal impression on its rim.¹² The text of the roundel, known

¹¹ E. Hallager, "The Use of Seals on the Minoan Roundels", in: CMS Beiheft 3, 1989, 55–78.

¹² F. Chapouthier, "Inscription minoenne sur une pastille d'argile", RA 29–30, 1948, 166–169.

from a photograph and a drawing, does not raise problems of interpretation. The reverse of the roundel shows the ideogram for wheat followed by 4 units and a fraction (A 704).

4) PH Wc 41 shows the ideogram for wine, followed by one unit and a fraction (A 707), while on the rim there are two seal impressions, contrary to what G. Pugliese Carratelli states in the first publication of the document.¹³

It seems obvious that only roundels GO 1 and HT 3024 display a precise correspondence between the numerals of the text and the number of seal impressions. J.-P. Olivier hypothesizes for MA <5> the existence of a second impression which Chapouthier might have overlooked. Observing a slight depression of the edge of the roundel in the photo and considering hypothetically that fraction A 707 has the value of $1/2$, Olivier multiplies the four units by $1/2$, thus obtaining the value 2, which would correspond with the two hypothetical impressions.¹⁴ This hypothesis, in my opinion, is not likely, since the depression of the profile of the roundel might well be due to the pressure of the finger of the person who impressed the seal, as Chapouthier testifies when he writes: “. . . l’index appuyé contre la bordure”.¹⁵

In order to explain the discrepancy between the numerals and the number of seal impressions in PH Wc 41, Hallager regards the quantity of wine equivalent to one unit plus the fraction A 707 as one entity, thus explaining the correspondence between the numerals of the text and the only seal impression mentioned by Pugliese Carratelli. In fact, as we have already emphasized, the seal impressions on the roundel PH Wc 41 are two in number, and therefore, the hypothesis is unconvincing also in this case.

From the analysis of these four documents, it would seem that in the case of indivisible items (viz. animals in GO Wc 1 and HT Wc 3024), Hallager’s hypothesis seems to be confirmed, but in the case of commodities in quantities less than unity, this seems not to apply.

¹³ G. Pugliese Carratelli, “Nuove epigrafi minoiche di Festo”, *ASAtene* 35–36, 1957–1959, 376.

¹⁴ E. Hallager – L. Godart – J.- P. Olivier, “La rondelle en linéaire A d’Haghia Triada Wc 3024 (HM 1110)”, *BCH* 113, 1989, 436.

¹⁵ F. Chapouthier, *op. cit.* (supra n. 12), 167.

As I have affirmed in a previous work¹⁶, this difficulty might possibly be overcome by considering that the number of seal impressions represents units not of the product but of rations.

For example, on roundel PH 41 there is the ideogram for wine followed by a unit and a fraction (A 707), while on the rim there are two seal impressions. This would mean that the document shows a transaction of two rations of wine, and the amount of each ration is indicated by the numeral which appears in the text; in this case one unit plus a fraction.

The new interpretation of the second line of the Zakro roundel brings up to five the number of roundels bearing numerals as well as seals, and provides, therefore, a further confirmation of the correspondence between the number of seal impressions and the number of units or rations relative to the items and commodities recorded on a roundel.

¹⁶ M. Perna, "A propos de la fonction des rondelles minoennes", *Kadmos* 30, 1991, 105–112.