ISO/IEC JTC1/SC2/WG2 N5037
L2/19-076
2019-03-22

Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

Doc Type: **Working Group Document**
Title: **Proposal to encode three cross symbols in the UCS**
Source: **Michael Everson**
Status: **Individual Contribution**
Action: **For consideration by JTC1/SC2/WG2 and UTC**
Date: **2019-03-22**

A character named MALTESE CROSS has long been encoded in the Dingbats range at U+2720 (✠). It is not, however, actually a Maltese cross, but rather a *cross patty*, also known as a *cross pattée, cross formy*, *cross formée*, or *croix pattée*. (The name derives from French *patte* 'a foot or paw', and refers to the shape of the foot of a chalice or candelabrum.) A Maltese cross consists of four arrowhead shaped concave quadrilaterals converging at a central vertex at right angles, the two tips pointing outward symmetrically. This is very distinct from the cross patty. (The Maltese cross itself derives from a *different* source than the cross patty, namely the *cross moline*, whose ends resemble a millrind, the iron clamp of the upper millstone.) The existing character's name cannot be changed, and its glyph is too well-established to be changed either. Here is the current entry, informative note, and cross reference:

✠ 2720 MALTESE CROSS

• historically, the Maltese cross took many forms; the shape shown in the Zapf Dingbats is similar to one known as the Cross Formée

x 1F902 circled cross formee

This informative note is not really accurate. The Maltese cross had various forms, but none of them was the cross patty. In order to remedy this error, the UCS should encode a genuine Maltese cross, since the character name of U+2720 has doubtless led users to expect to be able to use one. The reason glyph variation should not continue to be permitted is outlined below.

A full cross patty ✠ and two half crosses patty 🜞 and 🜟 have been discovered as characters used inline in an important Middle Scots translation of John Purvey's 1388 revision of Wycliffe's Middle English New Testament, made by Murdoch Nisbet c. 1520 and published by the Scottish Text Society in three volumes in 1901, 1903, and 1905. The original manuscript for this is held in the British Library, Egerton MS 2880. In this manuscript the three kinds of crosses are carefully drawn throughout the work, along with U+204C ⁌ BLACK LEFTWARDS BULLET; all of these are represented in type in Law's 1901–05 edition of Nisbet's translation. This New Testament is a historically interesting Middle Scots textual source—in that the pre-Reformation translation was illegal at the time—and it is linguistically interesting in that there are very few texts offering direct comparison between Middle English and Middle Scots. Because of this Nisbet's textual apparatus must be representable in the UCS, and this suggests a proper disunification of U+2720 into two distinct characters.

Currently, either the shape ✠ or the shape ✠ can be used for U+2720, though it appears that very few fonts use the latter shape. The two crosses should be disunified and encoded separately because (firstly) the unification is simply the result of a mistaken character name, not of a principled decision to unify the cross patty and the Maltese cross, and because (secondly), the half crosses do not (and should not) have Maltese-cross shapes. The following three additions are proposed here:

✠ 2E50 CROSS OF MALTA

• this is the genuine maltese cross

x 2720 maltese cross

x 1F902 circled cross formee

✠ 2E51 CROSS PATTY WITH RIGHT CROSSBAR

x 2720 maltese cross

✠ 2E52 CROSS FORMY WITH LEFT CROSSBAR

I have not encountered these half-crosses in other texts, but it seems unlikely that Nisbet invented them. In general the ✠ tends to begin a section or subsection of text and the ✠ form tends to end one; ✠ seems to be used at the beginning of more major sections.

The original misnomer should be rectified with the following annotations:

✠ 2720 MALTESE CROSS

• cross patty, cross pattée, cross formy, cross formée

• character name is a misnomer

x 2E50 cross of malta

x 2E51 cross patty with right crossbar

x 2E52 cross patty with left crossbar

x 1F902 circled cross formee

1. Discussion.

The characters in the U-2700 block are all dingbats, encoded because Zapf Dingbats were built into early laser-printers. It isn't all that easy to find any of these characters used "inline in text", either before or after their encoding in the UCS. Many users have used U+2720 with its cross patty shape as a Maltese cross; of all the fonts on my own machine which have this character (most of which are CJK or Korean fonts), only the Code 2000 by James Kass (dated 2003) has an actual Maltese-cross shape. Figures 9 and 10 below show instances of dissatisfaction on the part of TEX users due to the unification of the cross patty with the Maltese cross and Figure 11 shows some general discussion about Maltese crosses as found in Malta, noting that its salient feature is its eight points.

2. Character Names.

The Norman forms *cross patty* and *cross pattée* are the most common terms in English heraldry, and the former has been used for these characters because the accent cannot be represented in UCS character

names in English. The UCS does already contain U+1F902 CIRCLED CROSS FORMEE, unfortunately misspelt without the acute accent on *formée*. I have preferred the anglicized form CROSS PATTY here, though CROSS FORMEE could be used if consistency in this matter were considered to be desirable.

3. Unicode Character Properties.

```
2E50;CROSS OF MALTA;So;0;ON;;;;;N;;;;;
2E51;CROSS PATTY WITH RIGHT CROSSBAR;So;0;ON;;;;;N;;;;;
2E52;CROSS PATTY WITH LEFT CROSSBAR;So;0;ON;;;;;N;;;;;
```

4. Bibliography.

Boutell, Charles. 1889. *English Heraldry*. London: Reeves and Turner.

Brooke-Little, J. P. (Norroy and Ulster King of Arms). 1985. *An Heraldic Alphabet*. London: Robson Books. P. 77. ISBN 0-86051-338-6

Friar, Stephen. 1987. *A Dictionary of Heraldry*. New York: Harmony Books. P. 121. ISBN 0-517-56665-6

Law, Thomas Graves. 1901. *The New Testament in Scots, being Purvey's Revision of Wycliffe's Version turned into Scots by Murdoch Nisbet, c. 1520*. Volume I. (Scottish Text Society) Edinburgh and London: William Blackwood and Sons.

Law, Thomas Graves. 1903. *The New Testament in Scots, being Purvey's Revision of Wycliffe's Version turned into Scots by Murdoch Nisbet, c. 1520*. Volume II. (Scottish Text Society) Edinburgh and London: William Blackwood and Sons.

Law, Thomas Graves. 1905. *The New Testament in Scots, being Purvey's Revision of Wycliffe's Version turned into Scots by Murdoch Nisbet, c. 1520*. Volume III. (Scottish Text Society) Edinburgh and London: William Blackwood and Sons.

Lee, Frederick George. 1875. *The Other World; or, Glimpses of the Supernatural*. 2 vols. London: Henry S. King and Co.

5. Figures

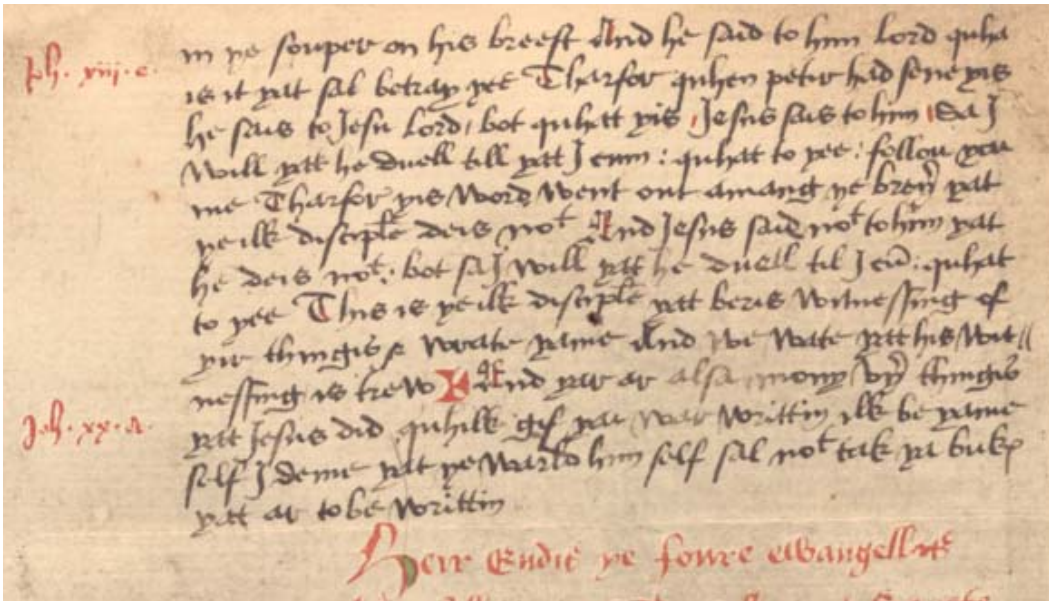
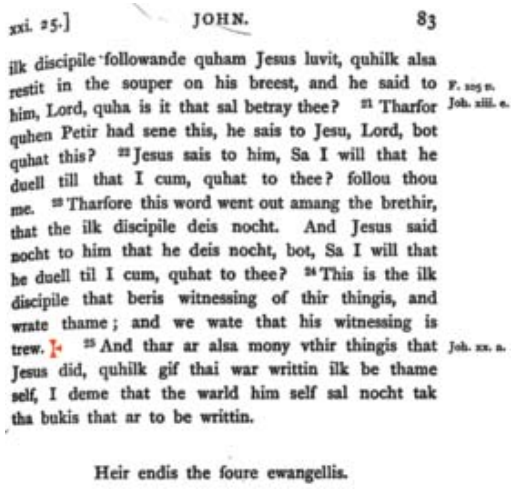


Figure 1. Facsimile of Egerton MS 2880 *f*. 105 *v*., showing the CROSS PATTY WITH RIGHT CROSSBAR in line 10 following the text "[Wit]neſſing is trew" and preceding the text "And þar ar alſa mony vþ thingis" (Law 1901:frontispiece).



xxi. 25.] JOHN. 83

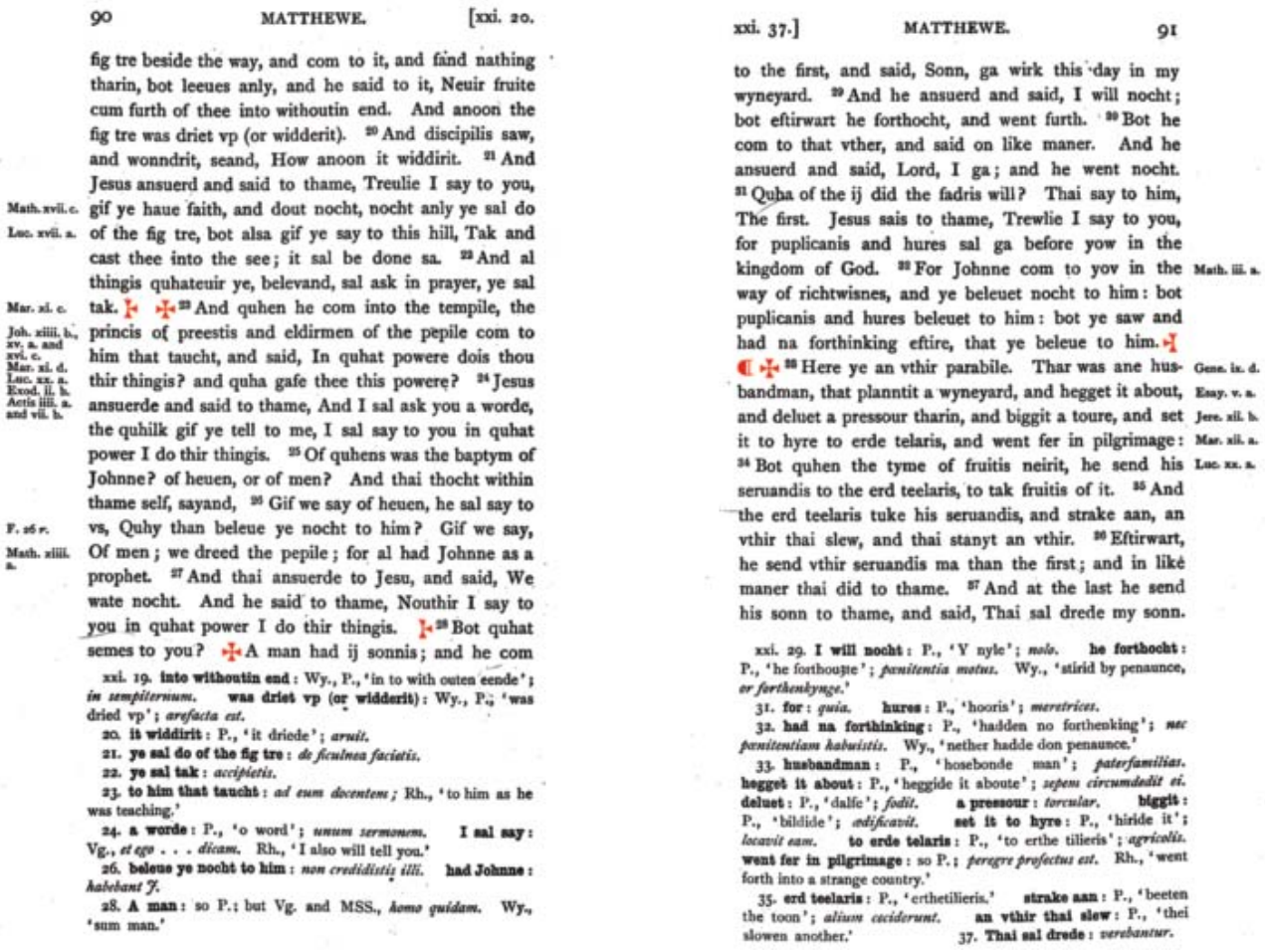
ilk discipile followande quham Jesus luvit, quhilk alsa restit in the souper on his breest, and he said to him, Lord, quha is it that sal betray thee? [21] Tharfor quhen Petir had sene this, he sais to Jesu, Lord, bot quhat this? [22] Jesus sais to him, Sa I will that he duell till that I cum, quhat to thee? follou thou me. [23] Tharfore this word went out amang the brethir, that the ilk discipile deis nocht. And Jesus said nocht to him that he deis nocht, bot, Sa I will that he duell til I cum, quhat to thee? [24] This is the ilk discipile that beris witnessing of thir thingis, and wrate thame; and we wate that his witnessing is trew. [25] And thar ar alsa mony vthir thingis that Jesus did, quhilk gif thai war writtin ilk be thame self, I deme that the warld him self sal nocht tak tha bukis that ar to be writtin.

F. 105 v. Joh. xiii. c.

Joh. xx. a.

Heir endis the foure ewangellis.

Figure 2. Transcription of Egerton MS 2880 *f*. 105 *v*., John 21:20–25, showing the CROSS PATTY WITH RIGHT CROSSBAR at the end of verse 24 (Law 1903:83). It has been coloured red here and in Figure 3 for clarity, though in the printed book it is shown in black.



90 MATTHEWE. [xxi. 20.

fig tre beside the way, and com to it, and fand nathing tharin, bot leeues anly, and he said to it, Neuir fruite cum furth of thee into withoutin end. And anoon the fig tre was driet vp (or widderit). [20] And discipilis saw, and wonndrit, seand, How anoon it widdirit. [21] And Jesus ansuerd and said to thame, Treulie I say to you,
Math. xvii. c. gif ye haue faith, and dout nocht, nocht anly ye sal do
Luc. xvii. a. of the fig tre, bot alsa gif ye say to this hill, Tak and cast thee into the see; it sal be done sa. [22] And al thingis quhateuir ye, belevand, sal ask in prayer, ye sal
Mar. xi. c. tak. [23] And quhen he com into the tempile, the
Joh. xiiii. b., xv. a. and xvi. c. princis of preestis and eldirmen of the pepile com to
Mar. xi. d. Luc. xx. a. him that taucht, and said, In quhat powere dois thou
Exod. ii. b. Actis iiii. a. and vii. b. thir thingis? and quha gafe thee this powere? [24] Jesus ansuerde and said to thame, And I sal ask you a worde, the quhilk gif ye tell to me, I sal say to you in quhat power I do thir thingis. [25] Of quhens was the baptym of Johnne? of heuen, or of men? And thai thocht within thame self, sayand, [26] Gif we say of heuen, he sal say to
F. 26 r. vs, Quhy than beleue ye nocht to him? Gif we say,
Math. xiiii. a. Of men; we dreed the pepile; for al had Johnne as a prophet. [27] And thai ansuerde to Jesu, and said, We wate nocht. And he said to thame, Nouthir I say to you in quhat power I do thir thingis. [28] Bot quhat semes to you? A man had ij sonnis; and he com

xxi. 19. **into withoutin end**: Wy., P., 'in to with outen eende'; *in sempiternum.* **was driet vp (or widderit)**: Wy., P., 'was dried vp'; *arefacta est.*
20. **it widdirit**: P., 'it driede'; *aruit.*
21. **ye sal do of the fig tre**: *de ficulnea facietis.*
22. **ye sal tak**: *accipietis.*
23. **to him that taucht**: *ad eum docentem;* Rh., 'to him as he was teaching.'
24. **a worde**: P., 'o word'; *unum sermonem.* **I sal say**: Vg., *et ego . . . dicam.* Rh., 'I also will tell you.'
26. **beleue ye nocht to him**: *non credidistis illi.* **had Johnne**: *habebant J.*
28. **A man**: so P.; but Vg. and MSS., *homo quidam.* Wy., 'sum man.'

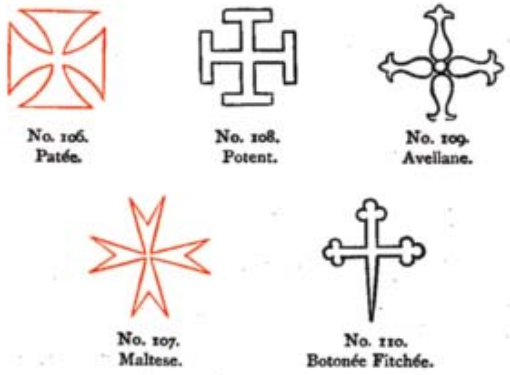
xxi. 37.] MATTHEWE. 91

to the first, and said, Sonn, ga wirk this day in my wyneyard. [29] And he ansuerd and said, I will nocht; bot eftirwart he forthocht, and went furth. [30] Bot he com to that vther, and said on like maner. And he ansuerd and said, Lord, I ga; and he went nocht. [31] Quha of the ij did the fadris will? Thai say to him, The first. Jesus sais to thame, Trewlie I say to you, for puplicanis and hures sal ga before yow in the kingdom of God. [32] For Johnne com to yov in the Math. iii. a. way of richtwisnes, and ye beleuet nocht to him: bot puplicanis and hures beleuet to him: bot ye saw and had na forthinking eftire, that ye beleue to him. [33] Here ye an vthir parabile. Thar was ane hus- Gene. ix. d. bandman, that planntit a wyneyard, and hegget it about, Esay. v. a. and deluet a pressour tharin, and biggit a toure, and set Jere. xii. b. it to hyre to erde telaris, and went fer in pilgrimage: Mar. xii. a. [34] Bot quhen the tyme of fruitis neirit, he send his Luc. xx. a. seruandis to the erd teelaris, to tak fruitis of it. [35] And the erd teelaris tuke his seruandis, and strake aan, an vthir thai slew, and thai stanyt an vthir. [36] Eftirwart, he send vthir seruandis ma than the first; and in like maner thai did to thame. [37] And at the last he send his sonn to thame, and said, Thai sal drede my sonn.

xxi. 29. **I will nocht**: P., 'Y nyle'; *nolo.* **he forthocht**: P., 'he forthoujte'; *penitentia motus.* Wy., 'stirid by penaunce, *or forthenkynge.*'
31. **for**: *quia.* **hures**: P., 'hooris'; *meretrices.*
32. **had na forthinking**: P., 'hadden no forthenking'; *nec penitentiam habuistis.* Wy., 'nether hadde don penaunce.'
33. **husbandman**: P., 'hosebonde man'; *paterfamilias.* **hegget it about**: P., 'heggide it aboute'; *sepem circumdedit ei.* **deluet**: P., 'dalfe'; *fodit.* **a pressour**: *torcular.* **biggit**: P., 'bildide'; *edificavit.* **set it to hyre**: P., 'hiride it'; *locavit eam.* **to erde telaris**: P., 'to erthe tilieris'; *agricolis.* **went fer in pilgrimage**: so P.; *peregre profectus est.* Rh., 'went forth into a strange country.'
35. **erd teelaris**: P., 'erthetilieris.' **strake aan**: P., 'beeten the toon'; *alium ceciderunt.* **an vthir thai slew**: P., 'thei slowen another.' 37. **Thai sal drede**: *verebantur.*

Figure 3. Transcription of Egerton MS 2880, Matthew 21:19–37, showing the CROSS PATTY WITH RIGHT CROSSBAR at the end of verse 22 and at the beginning of verse 28, the already-encoded MALTESE CROSS at the beginning of verses 23 and 33, and in the middle of verse 28 (where it begins a parable), and the CROSS PATTY WITH LEFT CROSSBAR at the end of verse 32. (Law 1901:90–91).

The Cross *Patée* or *Formée* is represented in No. 106. No. 107 is the "*Cross of eight Points*," or the *Maltese* Cross: this example is drawn from the portrait of PHILLIPPE DE VILLIERS DE L'ISLE-ADAM, elected forty-third Grand Master of the Knights of St. John of Jerusalem, A.D. 1521; this



No. 106. Patée. No. 108. Potent. No. 109. Avellane. No. 107. Maltese. No. 110. Botonée Fitchée.

picture is in the possession of the Earl of Clarendon, K.G. The Cross *Potent*, No. 108. The Cross *Avellane*, No. 109. The *Crossed-Crosslet*, and the Crosses *Patée*, *Botonée*, and *Potent*, are also drawn having their shaft elongated and

Figure 4. Description of the MALTESE CROSS and the CROSS PATTY and some other heraldic crosses (Boutell 1889:57).

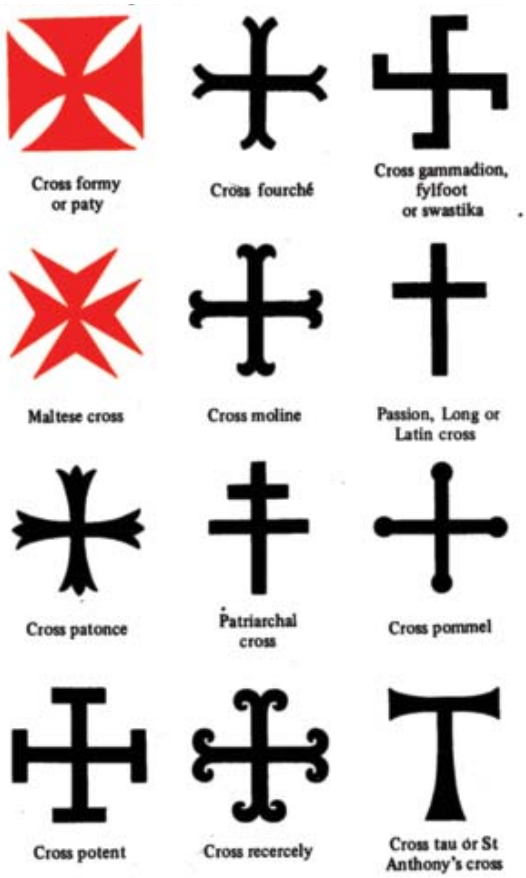
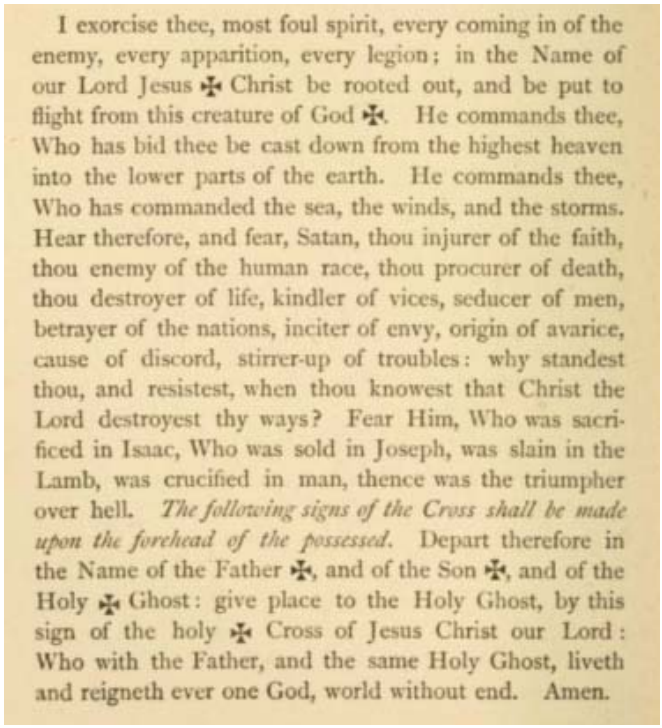


Figure 5. Description of the *Maltese cross* and the *cross patty* and some other heraldic crosses (Brooke-Little 1985:77). Note the *cross moline* to the left of the *Maltese cross*; this is the genuine precursor and ancestor of the Maltese cross.

Figure 6. Description of the *Maltese cross* and the *cross patty* and some other heraldic crosses (Friar 1987:121). Note the *cross moline proper* at the top of the image.

Figure 7. A St John Ambulance Maltese Cross, which was the first object to be transmitted as an image in early television experiments by John Logie Baird, in 1924. It belonged to John Logie Baird's doctor, Dr George Locke, who was based a short distance from the inventor's workshop. Baird initially used a cardboard cross to create shadowgraphs but he needed an object that would reflect the light. The shiny enamel surface and contrasting colours of this medal was ideal and it became the first object to be transmitted as an image. From http://www.bbc.co.uk/ahistoryoftheworld/objects/VbfAHSiBSbam_lloQvajCA.

It is not a cross patty. It is a major iconic cross in its own right.



I exorcise thee, most foul spirit, every coming in of the enemy, every apparition, every legion; in the Name of our Lord Jesus ✠ Christ be rooted out, and be put to flight from this creature of God ✠. He commands thee, Who has bid thee be cast down from the highest heaven into the lower parts of the earth. He commands thee, Who has commanded the sea, the winds, and the storms. Hear therefore, and fear, Satan, thou injurer of the faith, thou enemy of the human race, thou procurer of death, thou destroyer of life, kindler of vices, seducer of men, betrayer of the nations, inciter of envy, origin of avarice, cause of discord, stirrer-up of troubles: why standest thou, and resistest, when thou knowest that Christ the Lord destroyest thy ways? Fear Him, Who was sacrificed in Isaac, Who was sold in Joseph, was slain in the Lamb, was crucified in man, thence was the triumpher over hell. *The following signs of the Cross shall be made upon the forehead of the possessed.* Depart therefore in the Name of the Father ✠, and of the Son ✠, and of the Holy ✠ Ghost: give place to the Holy Ghost, by this sign of the holy ✠ Cross of Jesus Christ our Lord: Who with the Father, and the same Holy Ghost, liveth and reigneth ever one God, world without end. Amen.

Figure 8. Examples of the *cross patty* in use in text (Lee 1875:142).

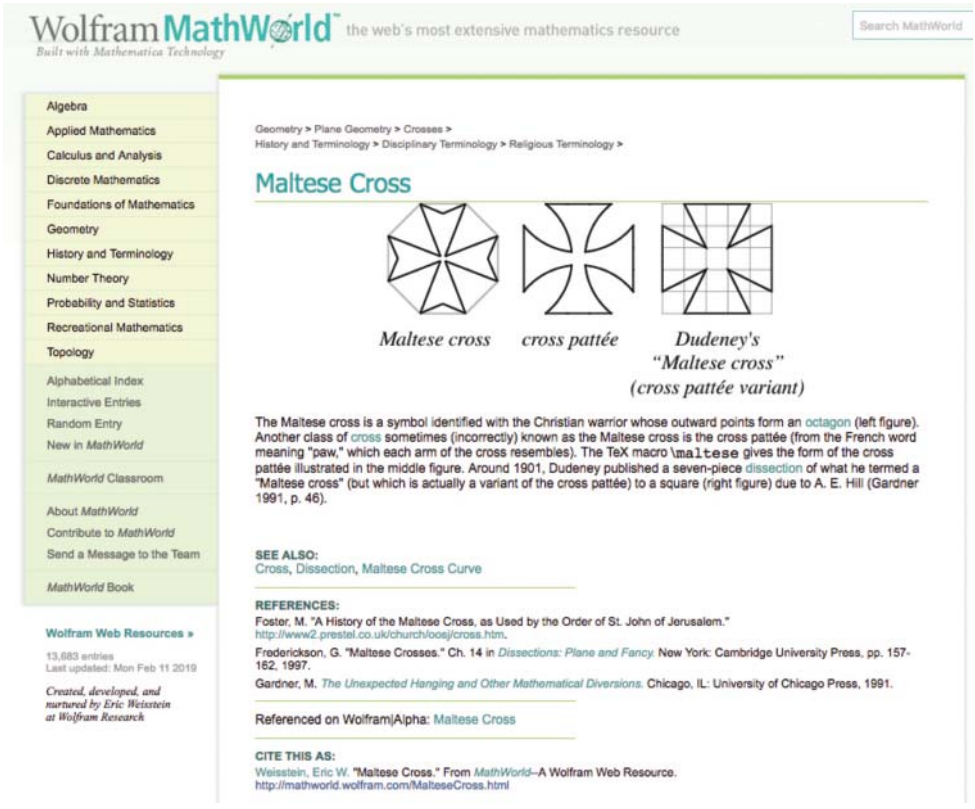


Figure 9. Description of the *Maltese cross* on a popular mathematics website. The text points out that the *cross pattée* is "incorrectly" called a Maltese cross. The unification is not satisfactory to users of a genuine Maltese cross.
From http://mathworld.wolfram.com/MalteseCross.html

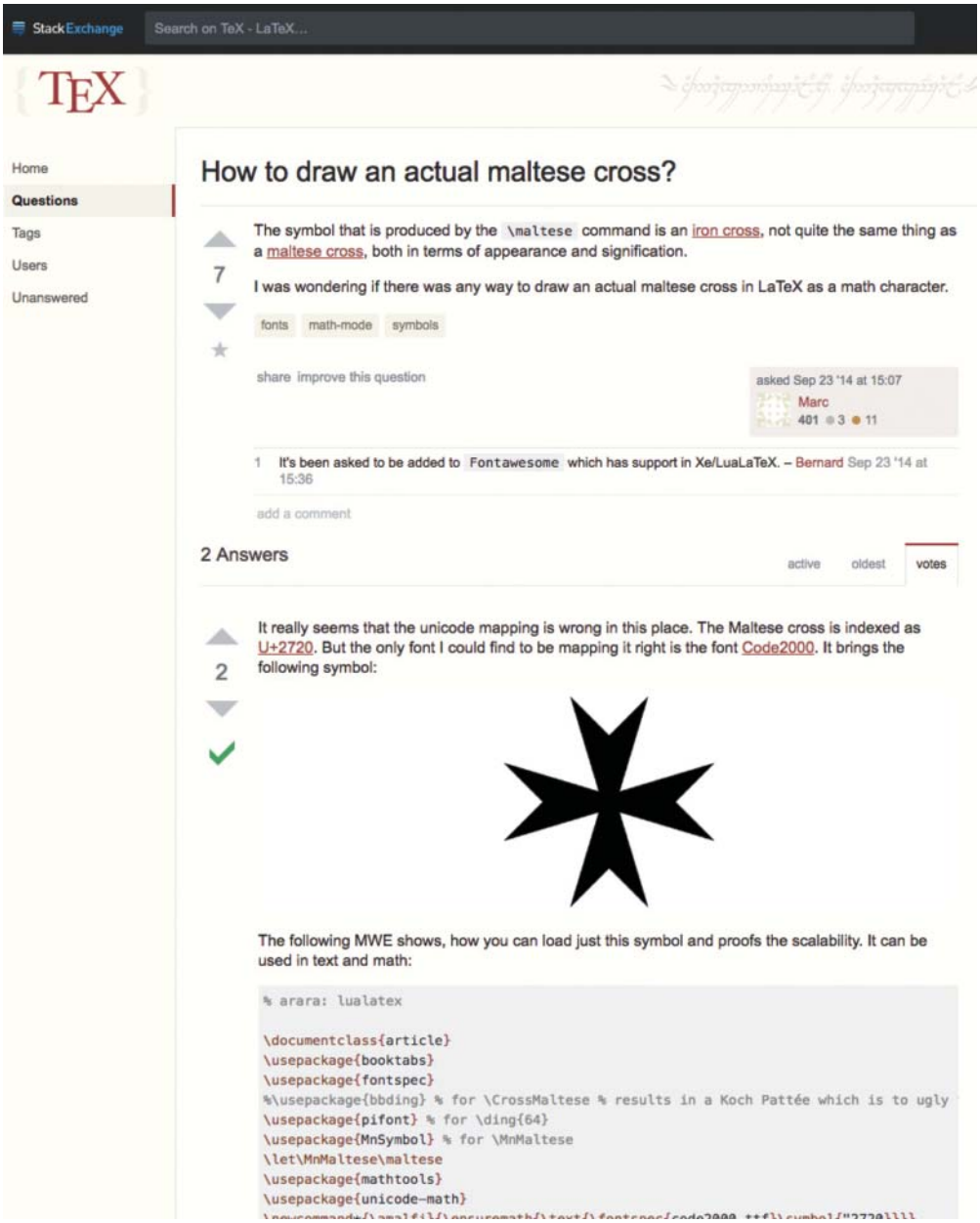


Figure 10. Discussion of the problem a TEX user had because of the mistaken unification of the *Maltese cross* and the *cross patty*. The text points out that the two differ "both in terms of appearance and signification".
From https://tex.stackexchange.com/questions/202746/how-to-draw-an-actual-maltese-cross

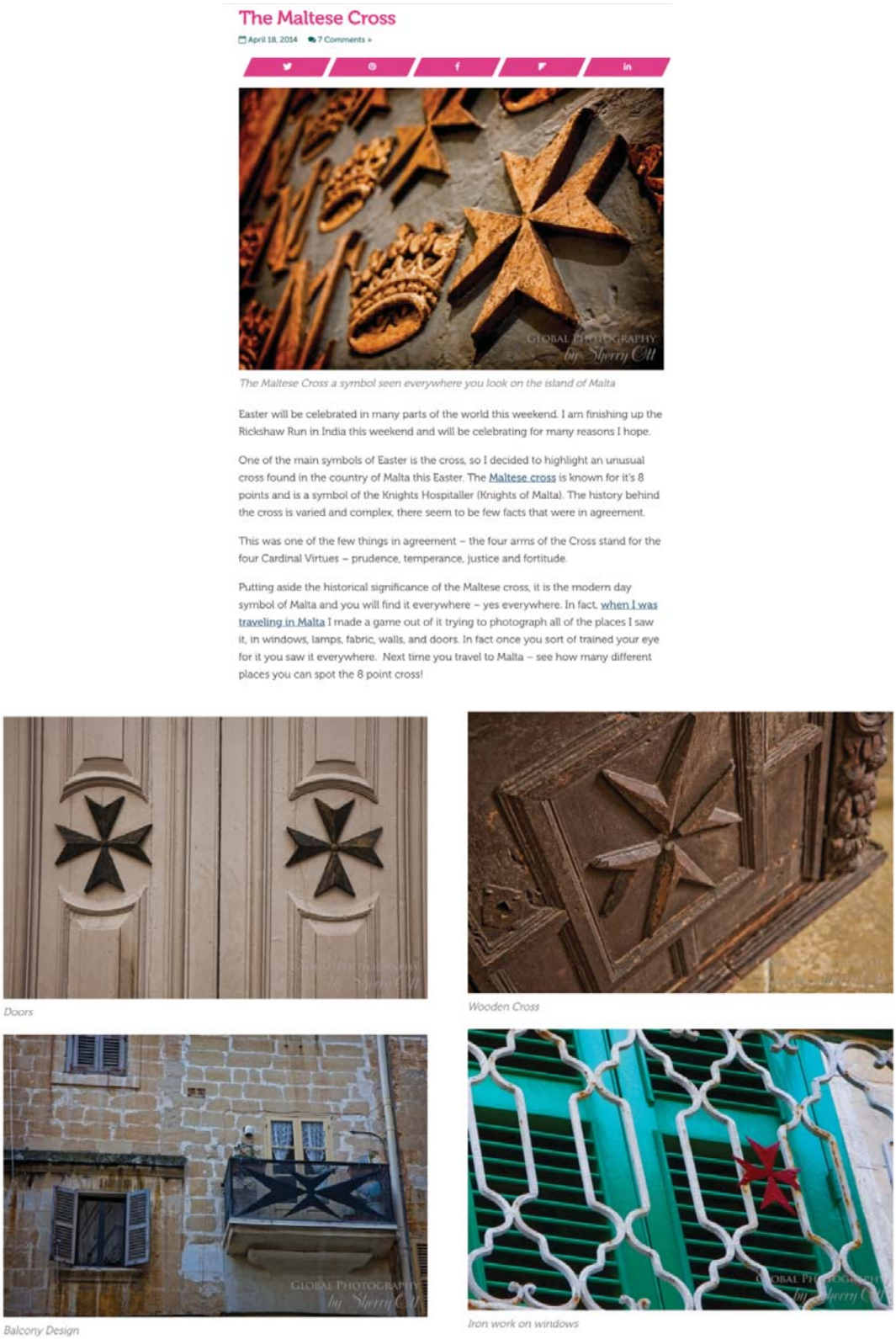


Figure 11. General descriptions of the *Maltese cross* with examples of its shape in Malta. From https://www.ottsworld.com/blogs/maltese-cross-pictures/

A. Administrative

1. Title

Proposal to encode three cross symbols in the UCS

2. Requester's name

Michael Everson

3. Requester type (Member body/Liaison/Individual contribution)

Individual contribution.

4. Submission date

2019-03-22

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

Yes.

6b. More information will be provided later

No.

B. Technical -- General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

No.

Proposed name of script

1b. The proposal is for addition of character(s) to an existing block

Yes.

1b. Name of the existing block

Supplementary punctuation.

2. Number of characters in proposal

3

3. Proposed category (see section II, Character Categories)

Category A.

4a. Is a repertoire including character names provided?

Yes.

4b. If YES, are the names in accordance with the character naming guidelines in Annex L of ISO/IEC 10646-1: 2000?

Yes.

4c. Are the character shapes attached in a legible form suitable for review?

Yes.

5a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Michael Everson.

5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer.

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes.

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

7. Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

No.

8. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database http://www.unicode.org/Public/UNIDATA/ UnicodeCharacterDatabase.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

The characters should have the same properties as other symbols.

C. Technical -- Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

No

2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?

Yes.

2b. If YES, with whom?

I am a user, preparing a parallel edition of Wycliffe and Nisbet.

2c. If YES, available relevant documents
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
Anyone.
4a. The context of use for the proposed characters (type of use; common or rare)
Not terribly common.
4b. Reference
5a. Are the proposed characters in current use by the user community?
Yes.
5b. If YES, where?
In printed publications.
6a. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP?
No.
6b. If YES, is a rationale provided?
6c. If YES, reference
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?
8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?
No.
8b. If YES, is a rationale for its inclusion provided?
8c. If YES, reference
9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?
No.
9b. If YES, is a rationale for its inclusion provided?
9c. If YES, reference
10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?
No.
10b. If YES, is a rationale for its inclusion provided?
10c. If YES, reference
11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?
No.
11b. If YES, is a rationale for such use provided?
11c. If YES, reference
12a. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
No.
12b. If YES, reference
13a. Does the proposal contain characters with any special properties such as control function or similar semantics?
No.
13b. If YES, describe in detail (include attachment if necessary)
14a. Does the proposal contain any Ideographic compatibility character(s)?
No.
14b. If YES, is the equivalent corresponding unified ideographic character(s) identified?