

# Anomalies in the lateral tympanum, west portals of Chartres cathedral

Adapted from *Gesta*, xxv 1986, 101-108.

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The Royal Portal on the west façade of Chartres Cathedral has been studied with more care than any other assembly of medieval sculpture.<sup>1</sup> Since some of the carvings had been altered before installation, it has been thought that the sculpture was originally erected further to the east, then dismantled and moved to its present position.<sup>2</sup> Fels's excavations showed this was not possible,<sup>3</sup> but a detailed and consistent explanation of the many anomalies in the portal has, so far, not been offered. The general opinion might be summed up in Katzenellenbogen's words, that they "are far too drastic to be explained by original miscalculations about the dimensions of the present site. It seems likely, therefore, that the façade was first planned for ... another location with different dimensions."<sup>4</sup> In 1979 I outlined the story that follows,<sup>5</sup> and in ch. 13 of *The Contractors of Chartres* discussed the relationship between the erection of the portal sculpture and the two adjacent towers.

Because the sculpture of the portal had been recently cleaned,<sup>7</sup> every stone and junction can now be examined with precision. Analysis shows that the shape of certain stones was skilfully adjusted to compensate for earlier discrepancies, and that these same stones were subsequently reworked to suit later changes in construction and design. The sequence of adaptations shows that the architectural design was altered a number of times while the portal was being erected. The changes are truly "drastic" and suggest that, rather than being the work of one team which could not make up its collective mind on the design, the portal was erected in a series of small campaigns by independent workshops working towards one iconographic scheme, but implementing their own ideas on detailing and dimensions. The evidence for this is complex, based as it is on six specific observations of construction anomalies on the Incarnation portal, and ten on the Ascension portal. They show that the adjustments were not made at one time during erection, but were made at different times in response to layout changes that were occurring during the process of erection. The design of the layout was therefore not finalized before erection began, and many stones were not carved until the erection was well advanced.

## ***The Incarnation Portal***

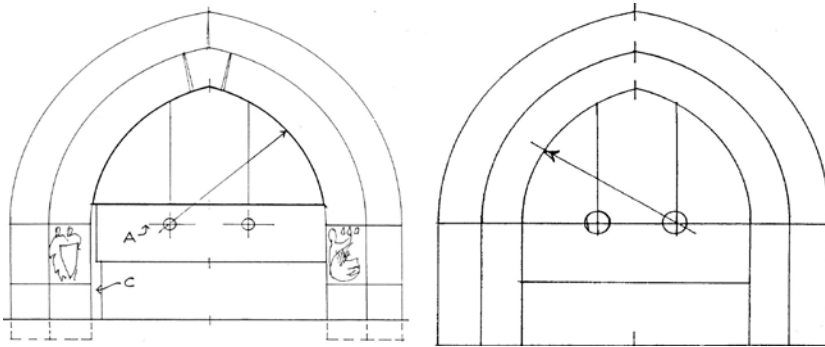
The junctions between the south tower and the right doorway show that the two were erected at the same time. The masonry of the wall behind the sculpture is bonded integrally into that of the tower [r1]. This shows that the jambs of the doorway are contemporary with this level of the tower. In addition, the bases of the wall statues are repeated on the south side of the tower, which suggests that they were carved by the same crew, the corner sundial is protected by a canopy matching some in the doorways, and the internal columns behind the doorways relate geometrically to the columns on the north side of the south tower.

On the southern portal with the Incarnation tympanum, the centres which establish the radius of the outer arcs of the tympanum do not coincide with the base, but are placed somewhat below the base. They are level with the tops



of the lower archivolt course, over Gemini and Music [b2]. This condition is unique in Gothic portals of France. Normally the radii of the curves of the upper archivolts and the sides of the tympanum on which they rest are struck from centres which line up with the top of the lintel and the base of the tympanum [b3].<sup>8</sup> The foliate frame around the sides and along the bottom, especially in the lower corners, make it very clear that the centres of the arcs had been placed below the top of the lintel when the tympanum was carved.

The lowest stones in the archivolts have two registers [b1]. The bottom ones were reduced in height after they were carved.<sup>9</sup> Unless the original design for the lateral sculpture were to be unique in France, we must conclude that the top of the upper registers was intended to be level with the top of the lintels. Only then could the perimeter arc of the tympanum have been set out in the normal way. Since the tympanum was carved with the centres of the arcs placed below the top of the lintel, it must have been designed at the time the archivolts were truncated, or just before. Therefore, the two lowest archivolts were carved before the tympanum and for a taller design.



Had the curved upper archivolts been carved with the tympanum, their lengths could have been adjusted for the height of the tympanum so that the height of the bottom registers would not have had to be reduced. Therefore, they, too, must have been carved before the tympanum on which they rest.

The lintels of the Incarnation door, as has often been recognized, are narrower than the tympanum. Yet if the half figure on the right of the lower lintel had occupied its full width, that lintel would have been wider than the tympanum by several centimetres [r2].<sup>10</sup> Therefore, the lower lintel was carved before the tympanum.

Both lintels are set against the side of the archivolt on the right, while there is a gap on the left, C [above]. The misplacement may have been the fault of the erection gang, due to one side of this portal being more advanced than the other. There is evidence for this in a stepped joint in the coursing over this door. The whole of this side of the portal from the bases to the archivolts was erected with the southern tower.<sup>11</sup> The ashlar to the left has been rebated over the stones to the right, showing that the former was laid after the latter. The centre of the portal was therefore, at that time, a little less advanced than the adjacent tower on the right.

The reduction to the right figure of the lower lintel is so beautifully executed that it was probably done in the workshop before erection, the stone being delivered to the erecting gang already reduced. If the right side of the portal was a little further advanced than the left even by one course the erecting gang would have first installed the two right hand archivolt figures, Music and Grammar, and then, assuming that the lintel was the correct size, have butted it against those archivolts. Only when the time came to lay those on the left side would the error have been realized. Part of the tympanum may have been



placed by then, and the erecting gang may have decided that a gap on one side was better than pulling it all down and starting again.

As the cut back lower lintel is narrower than the tympanum, it was truncated before the tympanum was carved. It must have been carved in an even earlier design phase for a wider tympanum, perhaps at the same time as the lower archivolts were carved, or before, but not after.

In the joints between the upper stones of the outer row of archivolts, Geometry and Arithmetic, and on either side of the keystone to the inner row, the adjacent faces of each joint are not parallel to one another but are slightly further apart from the bottom. This shows that the width of the arch as erected is larger than was originally intended and confirms that the archivolts were carved for a narrower tympanum. It looks as if the truncated lintel could have been the right width for these archivolts, suggesting that the archivolts were carved at the time that the lintels were truncated.

Normally, lintels have an extension at each end which passes behind the lowest stones of the archivolts, presumably so that they may rest more securely on the imposts. One such extension may be seen exposed on the left of the upper lintel of the Incarnation door. But the right ends of these lintels do not pass behind the archivolts because the extensions were removed when the lintels were cut back. Instead of the archivolts having a recess at the back to receive the end of the lintels, they extend back into the wall B past the lintels to encase them [b1]. This confirms that these archivolts were carved after the lintels had been cut back.

### *The Ascension Portal*

The misalignments between the walling of the north tower and the adjacent doorway jamb show that the doors were butted up to the tower after this level had been finished. The fact that there are no jambs to the openings on the south side of the north tower should have alerted historians to their intention to have the portal built where it now is, as open and unprotected access would never be allowed into the interior of a tower.

On the northern Ascension portal [b2], the arcs of the tympanum are also struck from points below the top of the lintel, demonstrating the same conclusions as in the first two points concerning the Incarnation portal. However, above this tympanum, the joints between the uppermost outer archivolts, Virgo and Sagittarius, are not splayed, but parallel. They were, therefore, probably carved with the tympanum. This may confirm the right to left progression of the work.

The lintels of the Ascension door are not on the same plane. The upper lintel is parallel to the wall of the portal, and to the plane of the archivolts, J and K [b3], but the lower lintel is set back on the northern end, M and N. Yet



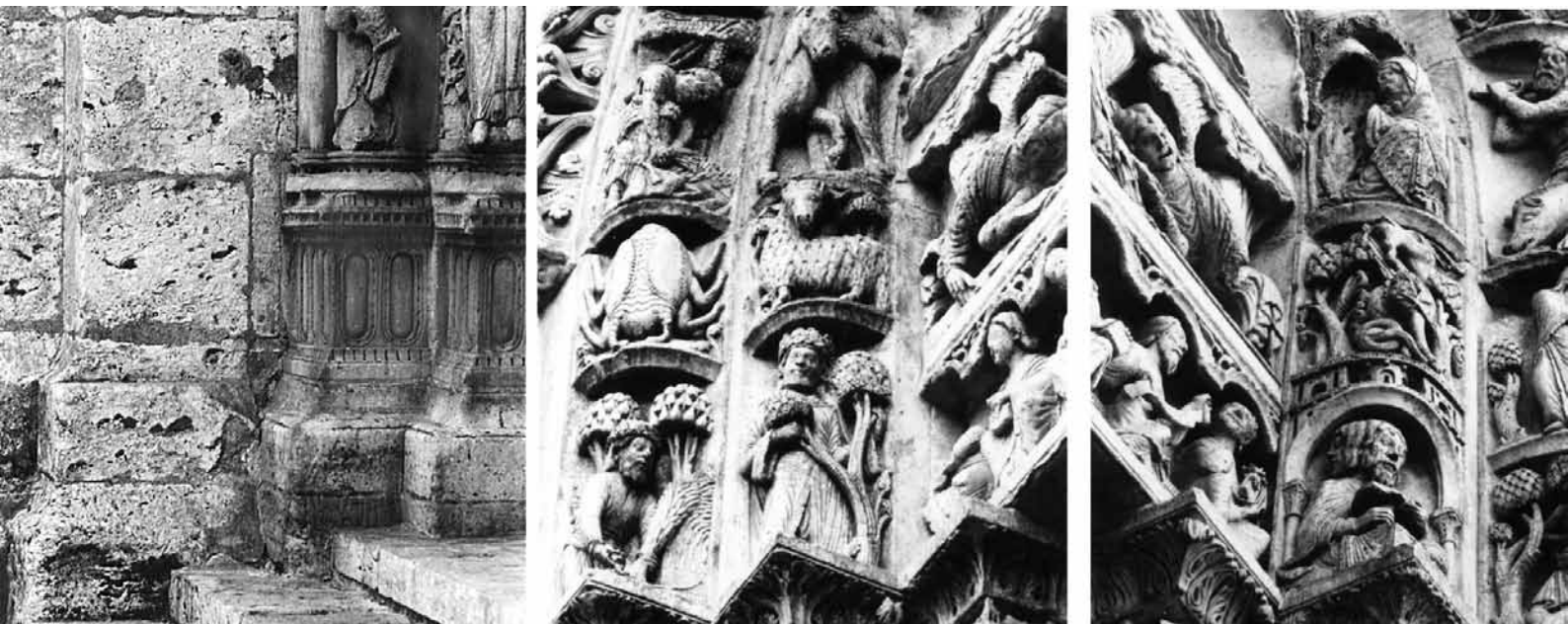
the distance between the lower lintel and the outer edges of the impost over the historiated capitals is the same on both sides. This means that the imposts are also out of line, and so are the jambs and embrasure figures under them. Once again, the erection gangs may have been responsible, for when they placed the lintel, they may have set it evenly over the imposts without checking their placement against the other doors of the portal.

The reason for the misalignment of the jambs may be deduced from the junction of the lowest courses with the north tower. This tower was started before the portal. It had a buttress on the corner that projected into the space now occupied by the jamb. This buttress was cut back and the jambs inserted into it. At floor level, there is a 5mm. infill between the western face of the portal bases and the wall of the tower. As this infill is made from the fine grained *grossière* used in the portal, rather than the *berchère* used in the tower, it must have been inserted with the portal. If the portal bases could have been inserted against the cut back buttress without this infill, the misalignment above the impost would not have occurred. If the error had been picked up at this stage, the erection crews had not been told when they came to lay the lower lintel.

As is visible in [b1], the portal plinth projects slightly to the west of the portal bases and the rest of the jamb, yet when the tower was cut back to receive it, the lower course was not given that additional trimming needed for the plinth, but was just cut in line with the edge of the jamb higher up, with the result that it was misplaced to the east by the amount of this projection.

Under the plinth, there is a threshold which has upstands at each end to support the bases. The plinth was laid exactly over these upstands, showing that the real origins of this misplacement lay in the threshold. This crude installation suggests that once again the erecting gangs were at fault. Once the threshold was installed, the next courses were set out from it, without checking, and the errors were left for those who came later to resolve as best they could.

Because the lower lintel was erected out of line, all the adjacent stones had to be adjusted as they were carved to realign the arches with the plane of the wall. The upper lintel with the four heralding angels [b2, 3], has one projection along the top edge and another along the bottom. To compensate for the different inclinations, the outer faces of these two projections are not on the same plane.





On the left the bottom is set in from the top N [b], so it is flush with the face of the lower lintel J [r1]. The set back of the lower projection from the edge of the archivolt with the personification of April is clearly shown. On the right there is no set back between the upper projection and the lower, both of which line up with the lower lintel M-K [r].

The upper lintel was therefore adjusted to disguise the misplacement of the lower lintel while being correctly positioned to support the tympanum. The lower projection of the upper lintel has not been remade, as the edges of the angels' wings hang over the face of the projection. The whole upper lintel was therefore carved after the lower lintel.

The right archivolt of Janus was rebated so it would lie over the face of the lintel in the normal way I [b]. But the carved portion of the lower lintel can be seen continuing a little behind Janus [r2]. This shows that the lower lintel is a little long for the doorway.

As Janus covers part of the carving of the lower lintel, the recess on the back which receives the end of the lintel is deeper than required [r2]. Thus, the archivolt was carved after the lintel.

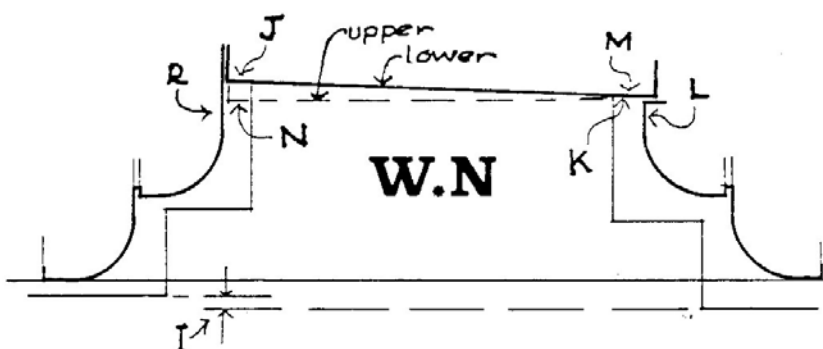
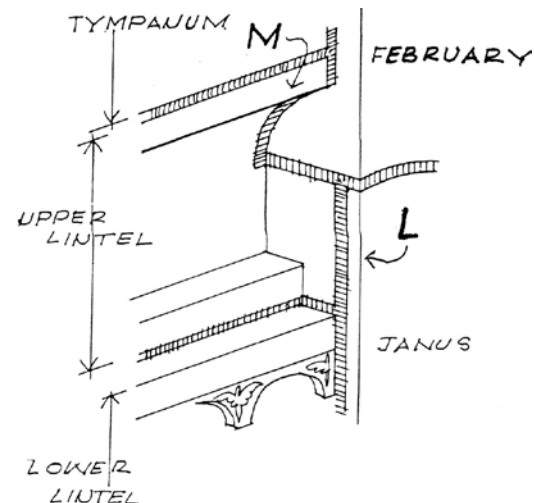
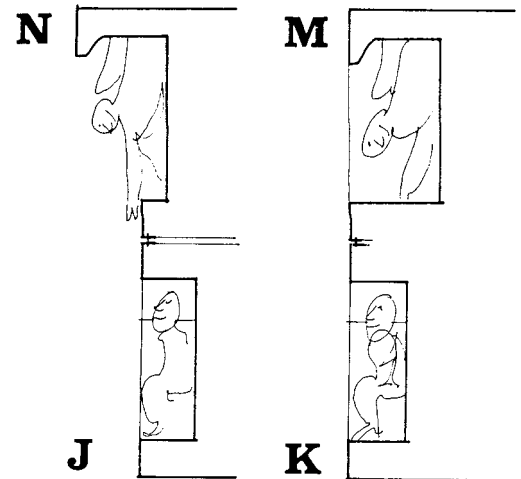
The carving sequence is confirmed in the side face of the left-hand archivolt of April R [b]. The thickness of the archivolt is about 4 cm. deeper than the return in Janus L [r2]. As the additional depth was an adjustment for the misplacement of the lintel, April would also have been carved after the lower lintel.

On the left, the projections of the upper lintel butt onto April and the huntsman archivolts, and the angels are exactly the right width for the space between the archivolts. This suggests that the upper lintel was carved either after or with either of them, but not before, when the lintel would have been carried behind the archivolts in the normal way.

On the right the upper lintel is carried behind the archivolt, but because the archivolts were cut down, the lower part of the upper lintel continues behind Capricorn, as we would expect, while the upper part has been cut away so that the next stone, February, passes behind it. This complex junction suggests that the upper lintel was carved after February. Thus, it could have been carved with the tympanum of the Ascension, or perhaps in a phase between the archivolts and the tympanum.

The April archivolt is also slightly narrower north to south than Janus. The archivolt above with the huntsman widens towards the top [b1], so that the rest of the archivolts could be the same width as Janus. These were conscious modifications. The reason may be that the normal rebate for the lintel seen in Janus, [L in r2] was omitted to permit the deeper return, concerning the sequence mentioned above.

These manifold minor changes to width and depth show up in the relationship between the edges of the archivolts and the jambs under the capitals. While all those in the Incarnation portal are identical, suggesting that



they were erected in one operation, on the right of the Ascension portal, Janus is placed closer to the door jamb, which may be why it overlaps the lintel. If April had also overlapped the lintel, it would have had the same relation to the jambs. The change in this relationship, combined with the different junction to the lintel, suggests that the design may have been changed just here.

### Conclusion

There are no anomalies similar to those on the side portals on the central door. Since the upper, lateral archivolts could not have been completed without some of the central archivolts being in place, the gangs working on the side doorways would have also been at work on the central doorway. Most of the southern anomalies come from adjustments made to lintels, while most in the north come from the misplacement of the northern jamb, and both were affected by changes to the tympana. None of these three factors would seem to have applied to the central doorway, which appears homogeneous.

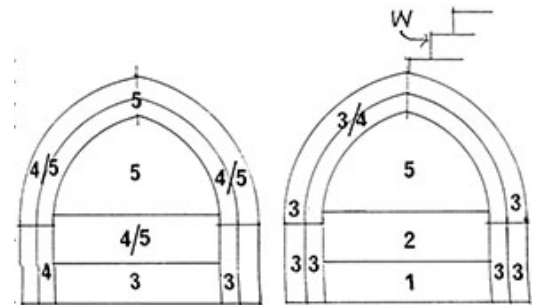
A sequential arrangement of these anomalies, with the Incarnation lintels being carved before those under the Ascension, the Incarnation archivolts before its tympanum, and Janus with the lower archivolts of the Ascension portal, produces only one logical ordering of these elements into five phases of construction [r]. *Note: This has been superseded by the investigation in the Portal series that shows that the north was ahead of the south at all levels.*

The evidence for this accumulates from the placement of the lower Incarnation lintel to the right, the stepped joint in the walling over this door W, the joints in the apex archivolts, the misplacement of the leftmost jamb of the Ascension portal, the order in which all four lateral lintels and archivolts were carved, and the relationship between the archivolts and the jambs. However, it is possible that the left portal was erected from left to right, just as the right portal had been erected right to left

At least three designs had been prepared for the Incarnation portal. The first is evident in the wide lintels which had to be cut down to fit the second scheme. The second design was for a narrower and taller tympanum, as revealed in the archivolts. In the third design, the tympanum was made shorter and wider than was intended in the archivolts, so it was wider than the lintels which had been cut down for the previous design. The upper archivolts were carved before the tympanum was changed, at the same time as the two lower registers of archivolts in phase 3, or in the one following. These lower registers were truncated, the lintels installed, and the joints between the uppermost archivolts opened up when the portal was erected and the tympanum carved in phase 5. This last phase, in which so much of the sculpture was erected, would have been contemporary with the adjacent stonework of the southern tower.

The erection of the Ascension portal began earlier, in phase 3, with the installation of the lower lintel on misaligned imposts. The left archivolt with the huntsman may have been carved in phase 4, if the error had been recognized part way through the campaign, or it was carved with the upper Ascension lintel in phase 5.

The order in which some of these stones were carved seems extraordinary. One would expect the tympana to have been carved before the archivolts, as even in the workshop the prior definition of the outline for the tympanum would be useful in setting out the archivolts. This was the procedure in the transept doors sixty years later. Yet in the Incarnation portal at least, the order seems to have been reversed. Is it possible that other taller tympana had been carved in phase 3 and, while they were still lying in the workshop, rejected? Was there a dispute among the scholars of the Chapter on subject matter,



resulting in a radical change to the program after most of it had been carved, and before it had been erected? If so, were these tympana thrown out, or will we find them some day?

The problems left by the erection gangs suggest that they were not under the same control, and perhaps not even working at the same time, as the carvers. The complex coordination required to erect the portals was not unique to Chartres, so I would be more inclined to attribute some of these errors to changes in the personnel on site than to ignorance.

The carving and erection of the portal were certainly complex. Three errors in erection occurred in the right lintels, the left plinth and lower lintel. Most of the adjustments in the archivolts were to compensate for these errors, at no inconsiderable cost and inconvenience. One would expect the master in charge to have avoided them if he had known. But if the masters had been changed, there is no reason why the next one would have known. The presence of these errors is *prima facie* evidence for the changes in crews.

Excluding these erectional errors, there were three significant changes to the dimensions during the five phases. In some cases, sculpture was adjusted twice, once for an earlier anomaly, and then later altered again to adjust for later changes. These occurred in the course of construction and, all being major changes to the architectural layout, they suggest something more fundamental than erectional errors or adjustments to individual stones.

Every time the dimensions and templates change, it implies a change in the master who designed them and the team which used them. As it is not reasonable to presume that sculpture and architecture of this quality would be produced by men who understood so little of their trade that they were constantly changing their minds, we must infer from these changes a number of crews, possibly three in the upper sections of the portals, each led by a different master, working one after the other rather than at the same time. Each crew seems to have worked towards one iconographic scheme, but to have addressed it in its own individual way. While the control of subject matter and its arrangement was the responsibility of the clergy, the manner of execution was in the hands of the masters in charge.

It will be seen that if some sculpture was carved after others had been erected, then the portal could not have been intended for some other place, at least not from the campaign in which the north jamb was misplaced. From this moment onwards, all the sculpture was carved to occupy its present position, and all the anomalies stem from changes to the layout and from control on site, rather than from the portals having been planned for some other place.

1. Willibald Sauerländer, *Gothic sculpture in France 1140-1270*, London, 1972; *Das Königportal in Chartres*, Frankfurt-am-Main, 1984.
2. Eugène Lefèvre-Pontalis, "Les façades successives de la cathédrale de Chartres au XIe et XIIe siècle", *Congrès archéologique*, lxxvii 1900, 256-3; Marcel Aubert, "La portail royal et la façade occidentale de la cathédrale de Chartres", *Bulletin Monumental*, xcvi 1941, 177-218.
3. Etienne Fels, "La facade de la cathédrale de Chartres au XIIe", *Bulletin de la Société Nationale des Antiquaires de France*, 1967, 232-33
4. Adolf Katzenellenbogen, *The sculptural program of Chartres Cathedral*, New York, 1959, 5.
5. John James, *The contractors of Chartres*, Wyong, ii vols. 1979-81, 220.
6. John James, "13 Building the narthex", *In Search of the unknown in medieval architecture*, 2007, Pindar, London, 503-523.
7. Guy Niko, "Le Portail Royal restauré," *Notre-Dame de Chartres*, lix 1984, 5-15.
8. Willibald Sauerländer, "Zu den Westportalen von Chartres," *Kunstchronik*, ix 1956, 155.
9. This can only be seen from the level of the impost for the legs of the figures and their seats have been arbitrarily truncated - Etienne Houvet, *Cathédrale de Chartres, Portail Royal*, Chartres, 1950., fig. 61.
10. Both lintels were carved for a tympanum about 3 meters wide. They were then cut back to suit a tympanum about 2.75 meters wide. The Incarnation tympanum, which is about 2.87 wide, leaves the gap on the left of the lintels, while on the north, the Ascension lintel is about 2.9 meters wide. These measurements were estimated from underneath, as there was no scaffold.
11. James, *Contractors*, 220,