NEW STUDIES IN THE TORRLÖSA ORGAN

Mads Kjersgaard 2021

Preliminary Edition September 2021 - may be corrected & added to later

T A B L E

Section I: Sources

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Section II: Survey of the Front Pipes

Preliminaries

In many ways the study and interpretation of the front pipes is the key to the understanding of the instruments history and its subsequent layers of development.

To make the presentation more instructive, I would prefer at first to summarize the conclusions of my earlier investigations, published in 2007 and based on my documentation from 21-III-2000 (the so far unpublished table sheets will be given as an appendix at the end).
A basic statement is that actually none of the front pipes are any longer standing in their proper places! This fact may never have occurred to earlier researchers, including those responsible for the most recent rebuild which led to the present instrument.

Pipe Materials

The front pipes are of 3 different materials and clearly produced at 3 different stages of the organs development:

1) Pure tin.
These pipes are obviously the oldest and now form a minority group in this front. Their clear similarity with the sole surviving front pipe from the 1586 'Swallows Nest' Brebosch organ at Næstved Sct. Peders - as well as the structural analogies between the older middle part of the Torrlösa Main Organ front and the Næstved organ case front - points to them as survivors from the original organ of the 1580s and that this has been built also by Brebosch.

There are 2 x 3 = 6 embossed pipes in the small intermediary flats, now nearest the Pedal departments, which have obviously always been dummies included just for decorative purposes. Further 7½ pipes of the same make - but not embossed - are now found irregularly intercalated among the other treble pipes in the larger Hauptwerk flats; their later ad hoc arrangement is indicated by soldered-on lengthenings of their feet and bodies, as well as by changed hooks on their backs. As their languids are positioned too elevated to allow the pipes to speak, it may be questionable if they also have been nothing but dummies from the outset.
They cannot be tested, however, since all of them are now leaking through small holes of tin lepra, mostly following the scribed lip lines. This severe drawback of the expensive tin material, in those days nearly exclusively applied in the making of display pipes, seems to be the true reason why the rest of these pipes have been discarded in earlier times as they ceased to be in speaking condition!

Pipes from the 16th century mostly do not have original engraved tone signatures, and in these cases there are also none, or they have been obliterated. Even later engraved numbers are in this case partly obliterated or obscure, which is an obstacle to any attempt at defining their intended original placements.

2) Lead
There are 5 large pipes of apparently simple natural lead without any deliberately added tin. This material is clearly different from that of all the other pipes. They have the unmistakable tone signatures C, D, E, F & G of a 4' stop, and moreover the numbers 28 - 32 which have transpired to be crucial for the understanding of the whole front scheme.
I have concluded that they signify an earlier, modest rebuild of this organ by Johan Lorentz, to be separated from his larger, later rebuild generally accepted as that of 1641 which resulted in the so called 'Buxtehude Organ'.

That the lead pipes differ in material from the main group of Lorentz pipes and do not display the lip form known from his organ fronts in Kristianstad and Helsingør may at first sight seem disturbing, but in this case - as also applying to the rest of the Lorentz pipes here - the lip form is obviously chosen due to the wish to imitate the Brebosch pipes of the original front. The lead material is in accordance with the Rückpositiv front pipes in Helsingør and may - as Henrik Nørfelt has pointed out *(Nørfelt 2019, p.119)* - simply be due to material restrictions during some periods of the reign of Christian IV, not valid, though, when the Kristianstad organ was built or the 1641 transformation of this organ was carried out.
As a tentative dating of the 5 lead pipes I would suggest the year 1628, mentioned in the Hülphers notice and hitherto dismissed as erroneous, but seen in the organ historic framework of the two twin towns concerned (v. Section 5) it makes good sense, however.

When I was involved in the Torrlösa investigation in 2000, the organ was undergoing a regular overhaul by the Mårtensson Company and was partly dismantled. In that connection I was also called upon to repair two severe corrosion damages at the feet of the lead pipes C and E (original signatures); they transpired to be simply an effect of the manner in which new toe points had been soldered on during the 1960 rebuild - obviously to remedy defects due to the critically insufficient metal thickness (down to 0,6 mm!) which Lorentz casually had applied to the long, pointed feet having to bear the full weight of these large lead pipes (the problem had nothing to do with the 'lead corrosion'-topic otherwise much discussed in recent times).
In general, the conditions of these feet also brought to mind that some foot lengths of these front pipes may have been misinterpreted during the most recent rebuild, in addition to have been manipulated previously..

3) High tin alloy (so far to be estimated at c. 60 - 70% without analyze done).

This applies to the majority group of the organ front, roughly comprising 43 pipes. Apart from the material, their make is in accordance with the 5 lead pipes. It is rather obvious that they are made by Lorentz in connection with his great transformation of the instrument, the date of which is generally accepted to be 1641.
According to old photos 4 front pipes were missing prior to 1960. In the present state of the front these are replaced by new pipes made of old sheet metal and/or a few of which only the body or the foot is old.
Besides this, 3 old decorated pipes were preserved - one tapered (!) of c. 2´-length and two normal, straight pipes. These are now placed as decorative dummies down in the

middle of the present Rückpositive front - as a paradox of the history, those now happens to be the sole ones which are at present standing in approximately their proper places!

The best analyze of the preserved material prior to 1960 is given by Rosenquist in 1957, who also comments on the decorated pipes, at that time found inside the organ, and he correctly records their tone signatures, viz. H, B and G, the latter numbered 14 and with a tapered body. It is not surprising that he was unable to understand that its body has simply later been recut in tapering form as an easy way of procuring a new bottom C pipe to adjust the choir pitch Spitzfleut 2´ to modern pitch - he thus discusses the possibility (unlikely, though) of the Rückpositiv originally holding parts of a Nasat 3´ among its front pipes.
At that time solely those recycled pipes inside the organ displayed decoration, whereas the front pipes were painted over. Only during the 1960 rebuild the surfaces of the front pipes were treated by the restorer and as far as possible had their decoration restituted, now again displaying some of their lips and ornaments in leaf gold and dark paint, on a ground of leaf silver now only seen very fragmentary.

It is obvious that during the 1641 transformation of the organ, the three different front pipe materials - tin, lead and metal - were disguised and brought to uniformity through leaf silver overall! The leaf silver, however, is apt to turn black after a relatively short period, and some sort of treatment has to be repeated again and again - in many cases leading to the pipes being at last painted over with just aluminum bronze, which may be what the old photos display. Today the traces of the leaf silver are mainly perceptible through the bright transversal strokes where the individual leaves are overlapping at c. 10 cm distances.

The main result of the present analyze of the front pipes is, however, the fact that a special group of this majority group can be identified as being 23 out of the original 25 Rückpositiv front pipes! This is thanks to the original Lorentz tone signatures (F - f" inclusive two dummy duplicates c and c#) and his numbering, running unambiguously from 1 to 25 and in most cases also marked discretely by a small additional letter **r**.

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The historical conclusions of my earlier research:

- The inclusion of the former Rückpositive front pipes in the Hauptwerk front was only possible as a consequence of the Rückpositiv being scrapped.

- The reason for the replacement of a number of Hauptwerk front pipes must have been that they were up to then remaining Brebosch tin pipes from the original organ, and that they had come out of reliably speaking condition through punctures by tin lepra as still displayed in the few surviving tin dummies of that category.

- The organ as re-erected in Torrlösa by Fogelberg was conceptually wholly different from the organ as it was developed in Helsingborg by Brebosch-Lorentz-Frietzsch: only one manual and pedal, with large windchests at ground level, running transversely from front to back much deeper than the depth of the original casework would have allowed for. The speaking pipework

had no connection whatsoever to the old pipe front much higher up, and - as seen in historic photos - now with nothing but an empty space behind them. From this follows that at that stage there was no need for any speaking pipes in the front any more, and that the exchange or including of former Rückpositive pipes cannot have occurred at that occasion!

- Consequently the abandonment of the Rückpositiv must have taken place already in Helsingborg prior to 1850! According to available documents only the 1829 'reparation' by Carl Grönwall will fit into this chronological framework (provided no further, unrecorded interference may have taken place) - and may in fact have been a thorough reshaping, transforming the organ from an outdated 2-manual baroque organ into a humble one-manual 'rural' organ, serviceable for the modest church music requirements of those days.

- Of all still surviving Lorentz pipes - in Helsingør, Kristianstad and Torrlösa - the former Rückpositive front pipes are actually in the best musical state - lips, languids and flues being virtually still in mint condition, only the pitch slightly changed through recently cut tuning coils (thereby slightly modifying the original pitch-scale relation, which could of course easily be restored). The potential authentic Lorentz sound in the central keyboard compass F - f" might easily be recovered here!

- It is a sad fact that no pipes from the Frietzsch rebuild of the organ in 1662 can be traced in Torrlösa today, (Frietzsch pipes are well defined by examples in e.g. Malmö-Petri-Genarp and Altenbruch). The reason may be the disastrous theft of lead pipes in 1693 (only recorded by Torsten Mårtensson, in a PM - without signature or date - on the latest rebuild, quoted by Hultkvist 1995).
Of the different old pipes now included in the present organs inner work, a coherent group forms the Gedact 8′ and Gedact 4′. Their distinctive lip form most likely identify them as being made by Johann Georg Amdor, seeing the obvious similarity with the original pipework in his 1707 organ at Östra Ljungby (a thorough documentation of all these pipes might elucidate this question properly, being of only secondary importance in the present connection, though). This may, however, not imply that Amdor (not recorded prior to 1707) would have been employed in Helsingborg; it is more likely that Fogelberg will have had access to them in his supposedly rich stock of scrapped or recycled pipes he could make use of at discretion in a situation where he was appointed 'to set up a second-hand organ'. The same may apply to the so far not identified pipes of the present Spitzflöte 2′ (the supposed Fogelberg stock of scrapped stops may have included products of a number of second-rate organ builders in the Malmö region of which hardly more than just their names can be now identified).

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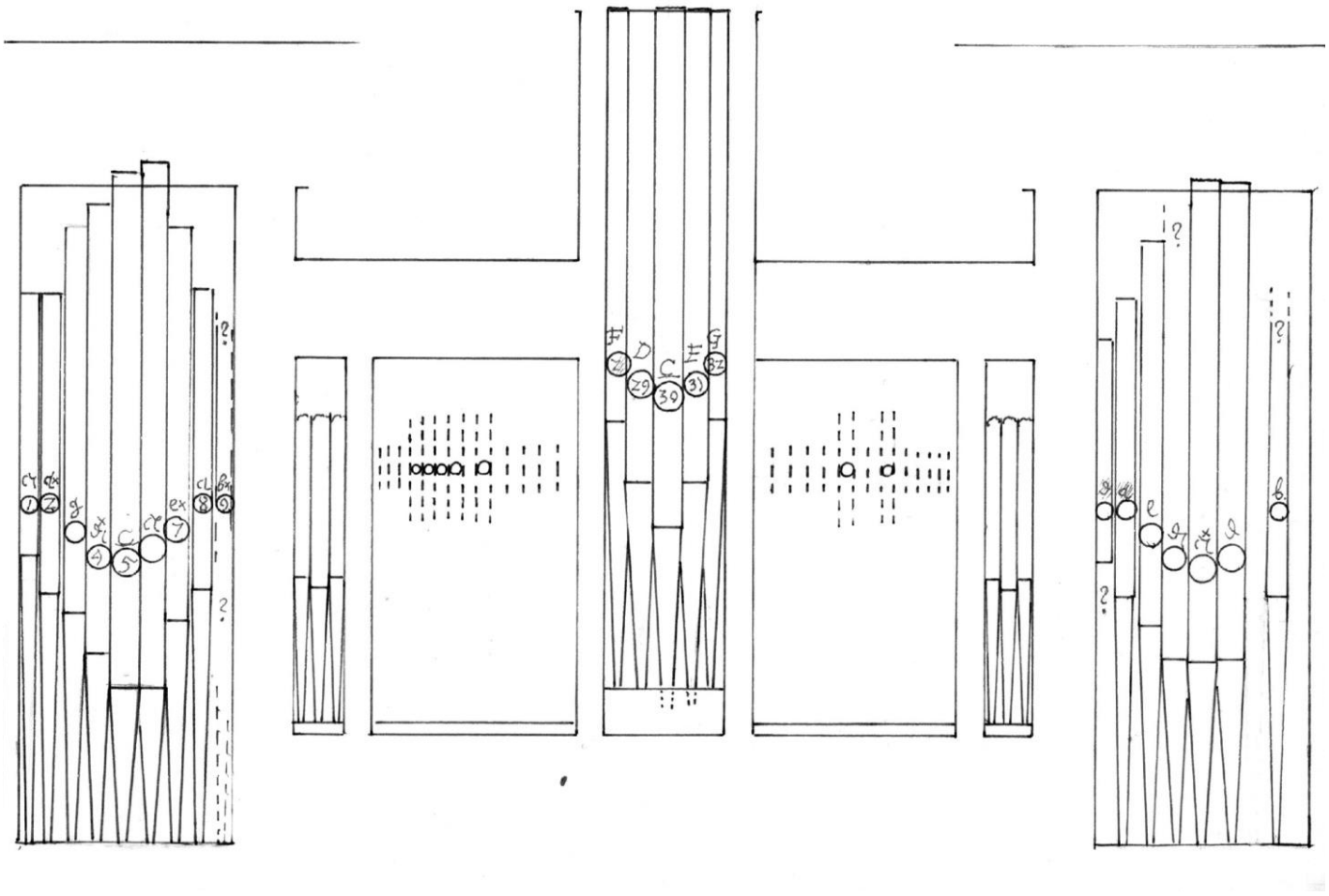
A critical view on the arrangement of pipes in the preserved organ front.

In the following schematic representation of the organ front the surviving pipes are relocated to their supposedly former positions, based mainly on the Lorentz numbering system.



The crucial basis for this reconstruction is the numbering of the 5 lead pipes (originally 4´ CDEFG) at present erroneously placed in the northern Pedal tower. Not only do the numbers 2*(8)* - 32 indicate their intended position - with C as No. 30 - but they also disclose that the present number of pipes in the treble flats is incorrect: instead of the present 14 pipes in each of them, the original arrangement would have held 15 (consequently No.s 13 to 27 in the southern flat).

The flats at present mainly hold former Rückpositiv front pipes, irregularly intercalated with 7 old Brebosch tin pipes as dummies.

Supposedly the original Brebosch layout in the treble flats encompassed the notes B - d" and H - d#" respectively. But the Lorentz Rückpositiv only possessed speaking pipes up to the note f' (the rest of this treble being standard pipes inside the case) so instead of 10 speaking pipes f#' - d#" 7 somewhat thicker Brebosch tin pipes were introduced as dummies - the inscribed numbers of which are more or less erased and thus ambiguous.

Establishing the original numbers of pipes in the flats also enables a rather precise assumption of the Brebosch scaling.

As for the Pedal towers, the pipe layout of the southern is rather obvious. As for the northern tower, the arrangement would have been quite similar (the absence of higher numbers, supposedly 51 - 59, at least in my documentation tables from 2000, will have to be rechecked further before closing these ongoing new studies, to clarify this better).

The apparent inconsequence, that at present the middle tower holds 7 pipes, but according to this reconstruction only 5, is easily clarified: the lead C pipe is of the larger Lorentz scale (68,4 mm) but the present middle pipe is a Pedal tenor c# of the narrower Lorentz scale (only 62.7mm) which consequently allows for more pipes in this tower.

To test the earlier layout of the treble flats, I have tried out a 15-pipe sequence according to the larger Lorentz scale (as found in the 5 lead pipes as well as in the Rückpositiv front pipes) with templates. This is perfectly feasible as seen in the following figure **a**. Now it cannot be taken for granted that Lorentz did adhere to the existing Brebosch scale when enlarging the organ. So the next step must be to check again the same 15-pipe layout, now with a supposed Brebosch scale I have recently experimentally arrived at when working out the project for the reconstruction of the Næstved 'Svallows Nest Organ' - taking into account the only surviving front pipe from that organ, which turned out to give a convincing result for the surviving main organ case.
When tested in the available space in the Torrlösa flats, this scale turned out to be more or less identical to the Lorentz scale - only a few templates had to be replaced by very similar ones, owing to the assumed difference in the semitone partition (the Lorentz scales obviously based on a 'logarithmic' or 'equal temperament' geometric diagram, which Brebosch hardly would have known) - this is shown in the following figure **b** (replaced Lorentz templates above).

a

b

For the Pedal Principal 8' (only possible from tenor c owing to the space restrictions in the Helsingborg St. Marys' - the bottom octave will have been accommodated inside the casework) Lorentz chose his 'narrower' scale, well known from Kristianstad and Helsingør. That he chose the 'wider' scale (shifted one or two semitones, the exact size of the difference a bit blurred owing to the different material thickness in lead or high tin alloy pipes, respectively) may reflect his attempt to 'imitate' the Brebosch front pipes, which to some extent was to be retained in the reshaped instrument.
There is an obvious possibility that the original Brebosch organ front had the 4´ bottom D as the central pipe in the middle tower (which has transpired to have been the case with the Principal 8´ in the Næstved main organ case, the bottom C pipe instead placed inside the case).

I believe the real reason for the Lorentz reshaping of the central tower in the middle of the otherwise largely retained Brebosch organ front was a wish to heighten that tower as much as was necessary to place a full length Trumpet 8´ inside the case, which this organ formerly did not possess!
To remedy the problem, he not only had to have the top mouldings and vertical posts remodeled, but also had to replace the original Brebosch pipes in the middle tower - DEFGA - with new pipes, not only of the c-compass - CDEFG - but also with excessive foot heights (now partly manipulated and not quite according to the exact Lorentz lengths any more).
In order to retain the following Brebosch notes from B upwards, he had to introduce one new supplementary pipe - bottom A - inside the tower, a pipe which luckily enough happens to be still in existence (today, probably as a solution by Fogelberg, recycled as the present bottom C of the Octava 2´) and thus giving us a valuable sample of an inner Lorentz pipe, of which none of the other existing Lorentz caseworks could provide any.

As for the former speaking Brebosch pipes of the treble flats, only 7(½) are still preserved, reduced to dummies when later included in the re-arrangement. Neither their body-lengths nor

their foot-lengths are unchanged - all of them have been added to in order that they should fit the new 14-note arrangement. The absence of tone signatures and the mostly obliterated or ambiguous numbers does not facilitate a precise establishment of their original positions. Inasmuch as my tentative reconstruction of the Brebosch Principal scale (which seems to have been confirmed in Næstved and also fits well the original 15-note arrangement of these flats) is applied, they can be reasonably identified by their diameters, plus / minus one semitone, and are by this means indicated in the above schematic representation of the reconstructed front pipe arrangement of the 1641 version of the organ.

The front pipe layout of the pedal towers deserve some comments.

Apparently the restricted space circumstances in the Helsingborg church presented trouble for Lorentz. The height would not allow for any pipes of the 8´-octave, which must have been accommodated within the case. The Principal 8´ could only stand in the front from tenor c, and although this octave was not a short 8-note octave but a full chromatic 12-note octave, those pipes would not be sufficient to fill out the necessary minimum width which the pedal chests and the inner pipework at least would demand, and moreover for this stop only the narrower scale was chosen. Lorentz regularly solved similar problems by filling out the width of his semi-cylindrical towers by adding one or two smaller dummy pipes at the outer flanks.
In this instance this was also not sufficient - the total of 2 x 9 pipes in these departments would still have had too small pipes at the outer flanks, and to remedy this Lorentz also incorporated dummy doublets of some of the largest pipes, such as c# and d#, marked with the X indicating a dummy.
The troubles encountered in adding those pedal departments to an already existing organ did not come to an end with this solution - the need to accommodate even the large 8´-pipes inside may have demanded a very low position of the chests near the floor. The somewhat enigmatic remark about the pedal stops in the published specification of Hülphers "Pedalen 7 st. alla ½ver." can be interpreted thus: in the published specifications stopnames and some standard remarks are given as abbreviations - ½ver. means normally "divided /halved/ in bass and treble". But as the pedal compass does not include any 'treble', the meaning in this particular case must be that there were drawstops both to the right and to the left for every one of the stops! This was of course something inconvenient for the player who had to use both hands to register any stop, but apparently Lorentz was not able to establish connections for the sliders on both sides carried across the inner mechanism of the existing organ!

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Section III: A new Clue to the Scaling of lost Lorentz Stops

Preliminaries

Strictly speaking the only surviving pipework of Lorentz consists in front pipes in the Torrlösa, Kristianstad and Helsingør organs. Of the former inner organ works with their multitude of stops virtually nothing is preserved, making reconstruction projects highly conjectural in that respect.
Still there may be some possibilities to squeeze out more information in that field, not just restricted to the vague but still extremely valuable verbal statements in the Andreas Reuter technical description of the Frederiksborg Castle organ in 1836 *(transcript by Kristian Olesen in: H. F. Nørfelt 2019, p.196 ff.)*
At least in Torrlösa one pipe - former HW Principal 4′ bottom A (recycled as Oct.2′ bottom C) illustrates the difference in material and style between front pipes and ordinary pipes of inner works. This A-pipe (of an alloy with a very high lead content and lips formed by straight scribed lines) is fully conforming to a number of other early 17th. century ordinary pipework of related origin (Eijsenmenger-Herman in Bälinge, Övertorneå and Hietaniemi as well as anonymous examples in Malmö/Genarp, Visby etc.).
During my research in Torrlösa in 2000, among the surplus pipes stored in the church attic - and later disposed of (!) - were still 6 small pipes of this category found. I have documented them in my pipe inventory tables with basic measurements and description, but unfortunately no photos of them were taken. They were apparently prepared for restoration by Frobenius but eventually discarded. The two smallest were (are) really crucial, being well one octave smaller than any of the other preserved (front) pipes of Lorentz, hinting at the continuation towards the treble of the principal scaling known so far.

During the Danish ’Organ Revival Movement’ the Lorentz principal stops were much admired and stated as being of ’narrow Netherlandish scale’, albeit hardly thoroughly studied in-depth at that time.
As an update of these statements I would say generally: Yes, broadly speaking the pipes are narrow, but this must be qualified in detail to the effect that bass pipes are nearly unequalled ’narrow’ but in the treble range (e.g. body-lengths 3′ - 2′ or smaller) they are of more average dimensions.
In the style of their making - front pipe lips and the decorations - they are of the ’Baltic’ type, apparently fully in accordance with the Eijsemenger-Herman parallels - as is to be expected from builders who have had their training in the neighboring regions Stralsund and Rostock, respectively.

A close study of the scaling procedures of those - at face value comparable - builders displays, however, basically different scaling methods *(Kjersgaard 2016, ISO-Journal No. 54, p.23 ff.)*

The Eijsenmenger-Herman stops are unambiguously based on the traditional 1:2 ’monochord’ scale chart. On the other side, the Lorentz stops are clearly designed according to a surprisingly ’modern’ scale chart based on the octave ratio 5:3 running straight without breaking points. The consequence is that the semitone division could not be carried out through the traditional geometric method but had to be subdivided by some pragmatic means resulting in a ’logarithmic’ scale.

/I must object firmly to the Cor Edskes statement (... Festskrift 1999, p.22 ff.) that logarithmic subdivision would be out of the question here. By cutting the scaling in 3 separate parts in a mere 13-ordinates chart (p.27) the true curved line this pipe scale would produce in a full-compass chart is totally blurred. Moreover the study material in this particular Helsingør case - a little less than two octaves and relatively small dimensions overall - weakens the possibility to make clear statements/.

The ’logarithmic’ scaling should not be that unthinkable, however, seeing that already in the 16th Century artists found similar solutions to draw e.g. chequered stone pavements in perspective and musicians needed similar procedures to place the frets on their lutes and theorbes.

As a result of the different approaches to scaling, the treble ranges of the Lorentz and the Eijesenmenger-Herman front Principals are fairly comparable, whereas the bass range of the Lorentz’ scale is drastically narrower than those of his colleagues (at bottom F, 6 feet body length, the difference amounts to c. 3 semitones).

Even if I tend to postulate that the ’scaling’ does not at all have the generally presumed effect on the ’sound’, I think it can nonetheless broadly speaking be stated that the straight 5:3 scaling of Lorentz - which moreover has the same property as the very much later ’Töpfer Normal Scale’ in that it can arbitrarily be shifted so-and-so many semitones up and down thanks to the fully proportional semitone division (and in fact there can be found an astonishing wealth of similar examples from the following centuries by builders in quite different regions) - may be well suitable for chamber organs or positives, but in acoustically very large rooms it has a distinctively felt lack of foundational tone volume and ’Gravität’. This is unambiguously expressed less than one generation later, when Hans Christoph Frietzsch was clearly instructed to do the scaling of the new Trinitatis organ in Copenhagen to the effect that F-pipes should have the same diameters as the C-pipes in the Lorentz organs. At the end of the century the Botzen brothers in Vor Frelsers Kirke in Copenhagen used similar trebles but widened their basses even 5 - 7 semitones!

Studying the Lorentz front principals in Helsingør, Kristianstad and Torrlösa I have observed an obvious standardization. Taking the Kristianstad principal scale as a ’norm’, the same is used for the tenor octave of the Pedal Principal 8´ (with dummy doublets marked x) originally placed in the outer towers in the Torrlösa organ, made of an alloy rich in tin.
A scale which is 2 semitones wider is used for the 5 lead pipes of HW Principal 4´ (originally CDEFG in the middle tower) as well as for the still existing pipes from the now lost Rückpositiv, also of a high percentage tin-alloy. It is also found in the Helsingør Rückpositiv Principal 4´ made of relatively thick sheets of a leaden alloy (which together with the restricted

number of pipes, not exceeding 3′ body lengths, somewhat blurs the precise identification of the scaling).

But knowing this, it still does not enforce us to reconstruct a whole Lorentz organ! Even if it is more than thinkable that all principal chorus ranks were of the same scale, we do not possess any (front) pipes of this category smaller than 8′ f" (2/3′ body length). It is evident that the very small pipes for treble, mixtures and mutations hardly just were following this straight line in the 5:3 octave ratio chart to the end which would have resulted in critically undersized top note pipes.
And besides that, we so far have no clues at all to the nature of the stopped flutes. The stylistic affinity to the works of Eijsenmenger-Herman makes it probable that the stops of the flute category of their make - which are still surviving in convincing numbers - due to the basically different principles of scaling are not reliable as direct models for a Lorentz reconstruction.

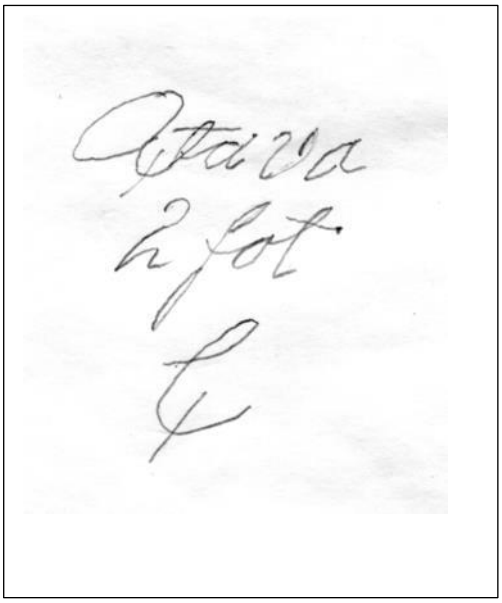
A new clue

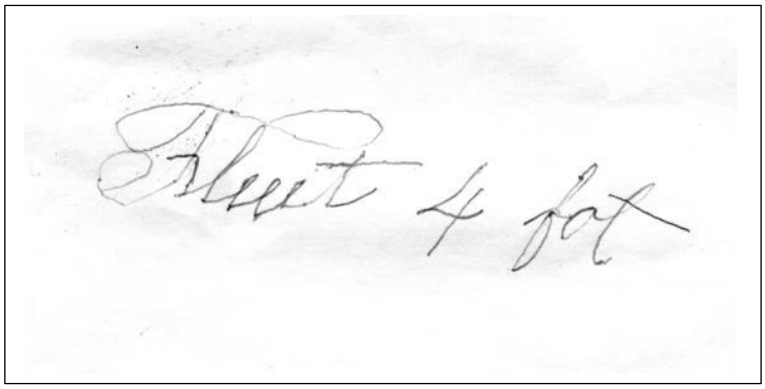
Unexpectedly in 2018 a lucky clue came to my notice. When Kenneth Gustavsson was commissioned to restore the F. H. Ramus mid-19.th chamber organ (one manual, 8′, 8′, 4′ and 2′ ranks) now donated to the Saxkøbing kirke, I was entrusted the task of restoring the metal pipes (as well as the revoicing of the instrument). The scaling of the Ramus stops is rather extreme on the narrow side. It struck me that the Principal 2′ is practically the same as the Torrlösa Rückpositiv scale, as far as the comparable pipes go, or the first one and a half octave of this 2′ rank.
A closer study of the Ramus scale disclosed a rather unusual pattern: not only is it so narrow as to be difficult to voice, but the semitone subdivision is an extremely rare variety, a so-called 'equidistant' partition: in the individual octaves every semitone interval is the same, then abruptly jumping to smaller intervals in the next octave! In my opinion this procedure (which is of course very easy to perform but theoretically totally erroneous) is based on a misinterpretation of the notion 'equal temperament'.

Apart from the range where the pipes can be directly compared to the Lorentz pipes (notwithstanding the difference in the internal semitone proportions, which for all practical purposes are, however, minimal) it is not easily seen which octave ratios are intended, since some upward 'break' apparently is introduced in the treble range to avoid too small, fragile top pipes.

Even the stopped ranks (8′ from tenor c, 4′ the first three octaves stopped with open tapered pipes in the top octave) are extremely narrow, and in fact exaggeratedly so, as to be actually difficult to voice properly (in contrast to stopped Gedact pipes normally being the very simplest to voice even for a newcomer...).

In searching for inscribed pipe markings, they were initially seemingly totally absent. Only by very careful observation under the most favourable lighting conditions can the nearly effaced, faint scribings be observed, looking like incised with a needle. Being extremely discretely scribed from the outset, they are either more or less rubbed out during the past times or they have been deliberately made invisible through polishing the metal surface. The note markings did not pose any surprises - but the first pipe of every rank (apart from the first, tenor octave of the Fugara 8′, now lost) is also marked with stop name and footage, thus:





Surprisingly much can be deduced from these scribblings. Ramus, being a modest, small-scale builder in Copenhagen (who nonetheless boasted the designation 'Organ Builder by Royal Appointment') - and besides this being a pioneer in running a professional photo studio in town - obviously did not produce those pipes in his own shop. He evidently had them commissioned from a subcontractor on the other side of Öresund!

The writing is unambiguously Swedish. The designation 'Fleut' is a Swedish 18th. / 19th. spelling.
The downward dash in the c-letters is Swedish palaeography (occurring 4 times - in the tone signature on Gedact coinciding with the upstroke in the d-letter, though).

Another 'fingerprint' of this so far unidentified builder / pipe maker is the extremely rare 'equidistant' semitone division of the scale chart. In Sweden this was - to my knowledge - exclusively applied by Per Zacharias Strand (the father of whom, Pehr Strand senior, a modest Stockholm builder of barrel organs and by degrees also of church organs, did not use anything else than 5:3 octave charts with 'logarithmic' semitone partition). P. Z. Strand apparently must have picked up this particular practice during his study years in Germany. *(For the difference between the scale charts of Strand senior viz. junior see: Kjersgaard 2017, ISO-Journal No. 55, p.66 ff.).*

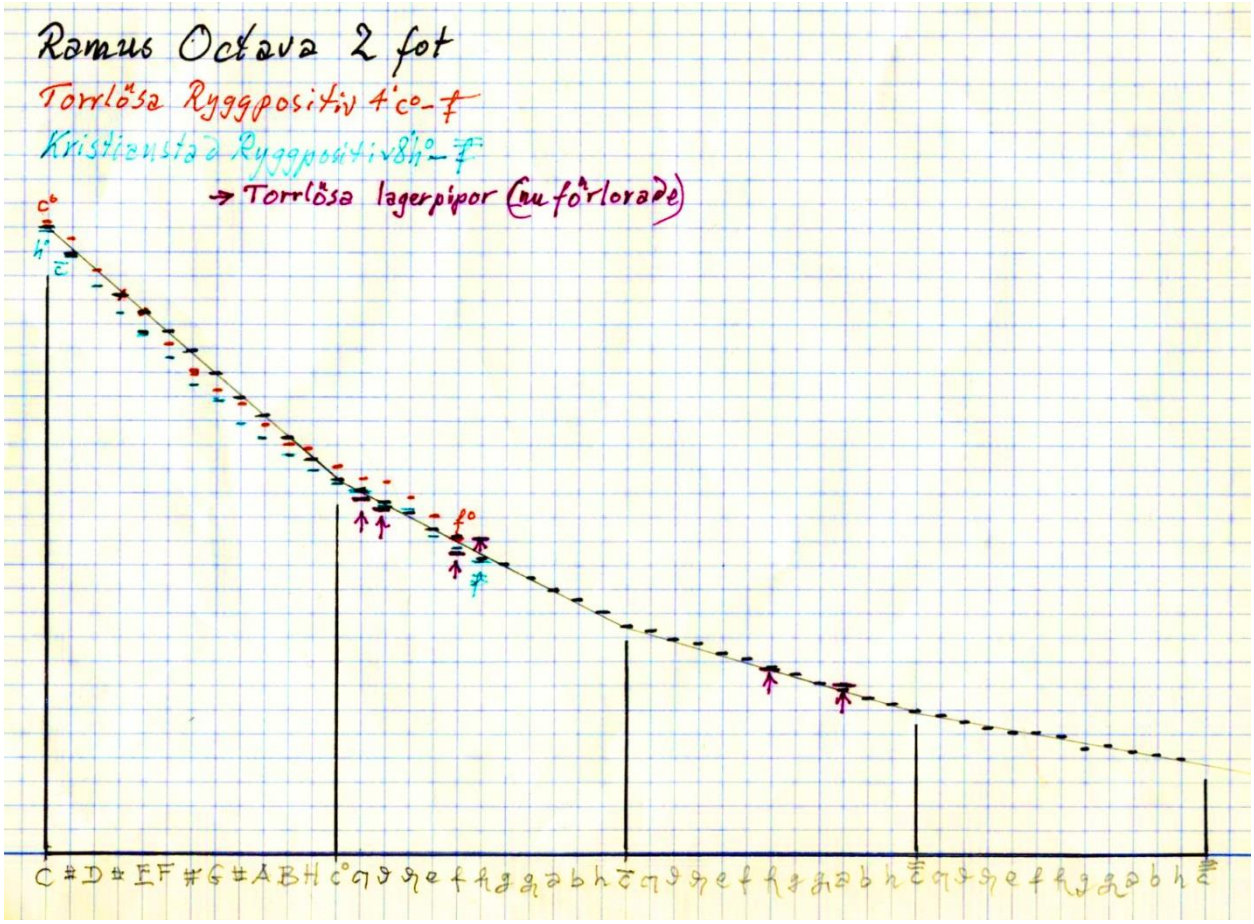
P. Z. Strand built his largest organ ever in the Lund Cathedral (4 Manuals, 61 stops) finishing it in 1836. In the previous 3 years his other production output was impressing - more than ten organs, albeit some only 1 Manual but always marked by a certain grandeur. Reportedly his staff was exceeding 10 persons but it seems likely that in Lund he may even have hired locals to manage the huge project.

Here I would imagine one 'Mr. X' who may have participated in the Lund project, being partly trained by Strand, and afterwards staying in the region on an independent basis, doing

maintenance work here and there, getting acquainted with old organs, some still containing extant Lorentz material, and maybe taking the Lorentz stops as his model for making new pipes, even providing those to others as a subcontractor.
He will have had his knowledge about scaling procedure from Strand, but not being prepared to follow the substantial scales and solid material thicknesses of the Strand stops. Seeing the Lorentz pipes here and there, he may have understood them as 'fully according to professional standards' not to be disputed. With limited experience in voicing, he may even not have been aware how difficult the extremely narrow stopped ranks are to get a decent sound from. With an 'economic' approach he managed to produce his pipes from low percentage alloy (27-28% tin) extremely thin and very soft metal sheets.
In earlier times there have been a number of secondary, obscure organ builders active in the Malmö region of whose work nearly nothing is known and will now be difficult to sort out.

Based on theoretically different scale chart systems, the similarity of the Lorentz Principal pipes and the anonymous Ramus Octava 2′ pipes could easily be dismissed as a pure coincidence. But the comparison is still striking. If there might be a connection - an overlooked indirect local surviving tradition - it would be especially helpful to clarify how the Lorentz ranks were developed in the high range were we do not possess any model pipes and may suspect that a simple continuation of the so far known Lorentz scale would result in too small and fragile top pipes.
It is a sheer luck that among the six small discarded Lorentz chorus pipes - studied by me in 2000 and later lost - there were also two (signed f# and a, surviving body lengths 69 and 63 mm respectively) which were more than one octave higher than the smallest now extant Lorentz pipes (f" of 2/3′ length); those being precisely in accordance with the Ramus scale confirms that it might be fully justified to take that scale as a model for the supplement of a scale chart for a possible reconstruction of the Torrlösa Rückpositiv!

This would afford us the model for the stops Quinta 3′, Super Octava 2′ and Scharf 3 ranks as well as for the missing treble part of front Principal 4′.



This is not a normal scale chart. To illustrate the 'equidistant' semitone partition of the Strand-Ramus scale the semitone abscissa points are also at equal intervals, displaying the straight lines of the individual octaves bending at the c's but not revealing the underlying octave ratio (if any). The six surplus treble Lorentz pipes formerly in store (violet markings) are strikingly according to the Ramus scale, as well as the surviving Rückpositiv front pipes (red markings) albeit not forming fully parallel lines between the c's owing to the difference in usage of geometric methods. The Kristianstad scale (green markings) about one semitone narrower may be considered the 'standard' Lorentz scale, in this diagram shifted a semitone, though, to coincide with the others.

This is so far the more solid basis for the reconstruction, now we must contemplate models for the other stops.
Along somewhat more tentative lines it would be appropriate to consider scaling Gedact 8′ and Gedact 4′ according to the Ramus stopped ranks - rather than having no alternative at all!
To check how far this might be justified, we should consult the remarks by Andreas Reuter from 1836 (him being by far the most competent and trustworthy professional researcher of the Frederiksborg Lorentz organ) - *(op.cit., p. 197 ff.)*.
HW Subbas 16′, Gedackt 8′ as well as Unterclavier Gedackt/Blockflöte 8′ are all noted as ”enge Mensur” which is of course only broadly speaking. To qualify this designation it must be seen in the light of Reuters own context - e.g. his scales from the small Marcussen & Reuter organ in the Bregentved Mansion Chapel.

Here the Gedact 8′ and the Flöite 4′ have one standard scale, the Bordun 16′ being narrower than these. A comparison of the c-pipe circumferences is seen in this summary table:

Bregentved B.16′	Bregentved G.8′	Ramus G.8′
c’ 160	c 185	c 155
c” 100	c’ 117	c’ 93
c”’ 63	c” 72	c” 56

In the mind of Reuter his 8′ Gedact may have been considered ’normal’ and thus the 16′ Bordun ’narrow’ - in this context the Ramus Gedact may also be labelled ’narrow’ - narrower than the Bregentved Bordun, but not so drastically as not to be covered by Reuters nomenclature or labelled as anything else than just ’narrow’. For the metal bottom octave of Gedact 8′ (in the Saxkøbing organ being of wood and thus not conclusive here) the scale model can be inferred from the larger Ramus organ in Nørre Vedby, which from the Carsten Lund survey *(ORGLET 2/1974, p.4 ff.)* in spite of only a cursory documentation can be seen to be fully conform to a common standard with the Saxkøbing pipes.

Moreover such a scaling would be well in keeping with the remark in the Hülphers publication that the Helsingborg organ is ”very tightly put together, having not more than 2 or 3 inches between the stops” - or in other words between the sliders, indicating that the toe-boards were of about that width. This is a hint - better than nothing - for a tentative lay-out of a future Rückpositive reconstruction.

Before leaving this topic, some more possible clues should not be omitted from consideration. As for the material (high percentage tin-alloy) and decorative style, the Lorentz front pipes are closely related to the Eijsenmenger-Herman front pipes of the same generation, being merely different in the scaling method applied.
The surviving inner pipe in Torrlösa - 4′ bottom A (now bottom C in the present Octava 2′ as well as individual pipes here and there included in that stop) also display the same characteristics as the comparable Eijsenmenger-Herman pipes, extant in considerable numbers. This would make it justified to resort to those as models in some respects and cases where no real Lorentz models are at hand.

Among other possible references to take into consideration, I would mention the Malmö-Petri present so-called ’Zimbel Quinta’ 3′ which is in reality a wrecked ’Querpfeife 2 fuss’ which may have entered the organ later than the 16th-century ’Jürgen from Pommeranian Stargard’ or the Brebosch interventions, but unambiguously prior to the Frietzsch rebuilding of 1661. It is not likely a Lorentz stop, but it might tentatively be ascribed to the obscure ’Baltzer Scheuper of Halmstad’ who may have acted as a sub-contractor for Lorentz.
According to a formula which I have developed as a result of my researching the oldest harmonic overblowing organ flutes, this kind of stop was originally simply constructed with the same scale as a principal rank of the same pitch, the body-lengths just doubled (and sometimes the mouth-widths taken half an octave narrower, but not necessarily).
Thus the scale of this rank may be seen as an example, possibly representing the scale of a relevant Superoctava 2′. This at least coincides with an isolated Superoctava tenor c# pipe of apparently the same generation and make (among the chaotic meddle of different pipe generations in the present state of the Malmö organ). What makes this check relevant is the fact that the scale of the first one and a half octave also coincides well with the Ramus 2′ - scale -

but from there the Querpfeife treble widens, probably because strictly adhering to a Superoctave scale would in the extreme treble produce too fragile pipes, even more difficult to voice than otherwise (several historic attempts at creating harmonic flute stops have reportedly been failures). The Torrlösa organ never had a Querpfeife, so this matter can now be laid aside.

Another principal stop apparently of related style, make and chronologically relevant, is the Pedal Octava 4′ in the Visby Cathedral organ, well preserved and practically completely intact. It is also of rather narrow scale (subjectively it could be considered too discrete for this large building) but it is anyhow c.4 semitones larger than the Lorentz scale, and its scale chart system is not quite easily interpreted.

The extreme narrowness of the bass ranges of the Lorentz stops in general may be the unknown reason behind their unfortunate disappearing in later history...

Apart from the reed stop - which shall be dealt with in another section of this study - we thus do have a decent basis for a project of a reconstructed Rückpositiv.

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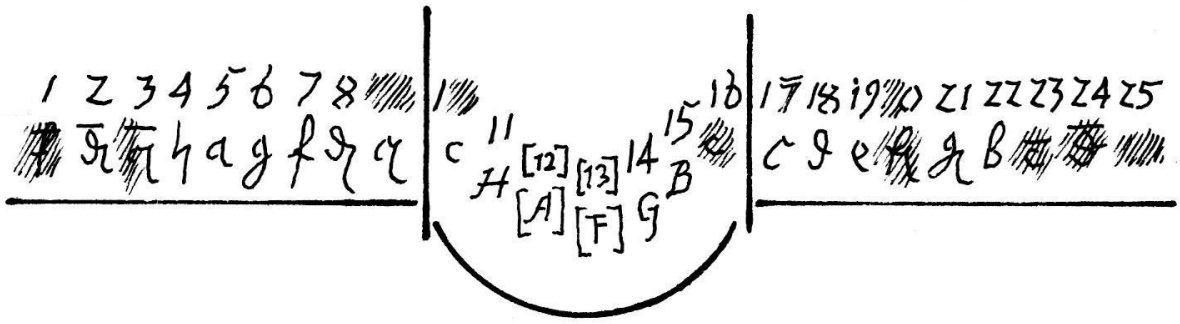
NEW STUDIES IN THE TORRLÖSA ORGAN
Mads Kjersgaard 2021

Section IV: Towards a Rückpositiv Reconstruction

The basis for the following account is the amazing and incredibly fortunate fact that the front pipes of the lost Rückpotiv are still preserved - nearly complete and in a next to pristine condition. They were not identified by earlier researchers and are crucial for a decisive new approach to the whole organ reconstruction matter.

The note signatures and the numbering represent unambiguously the layout of the front:



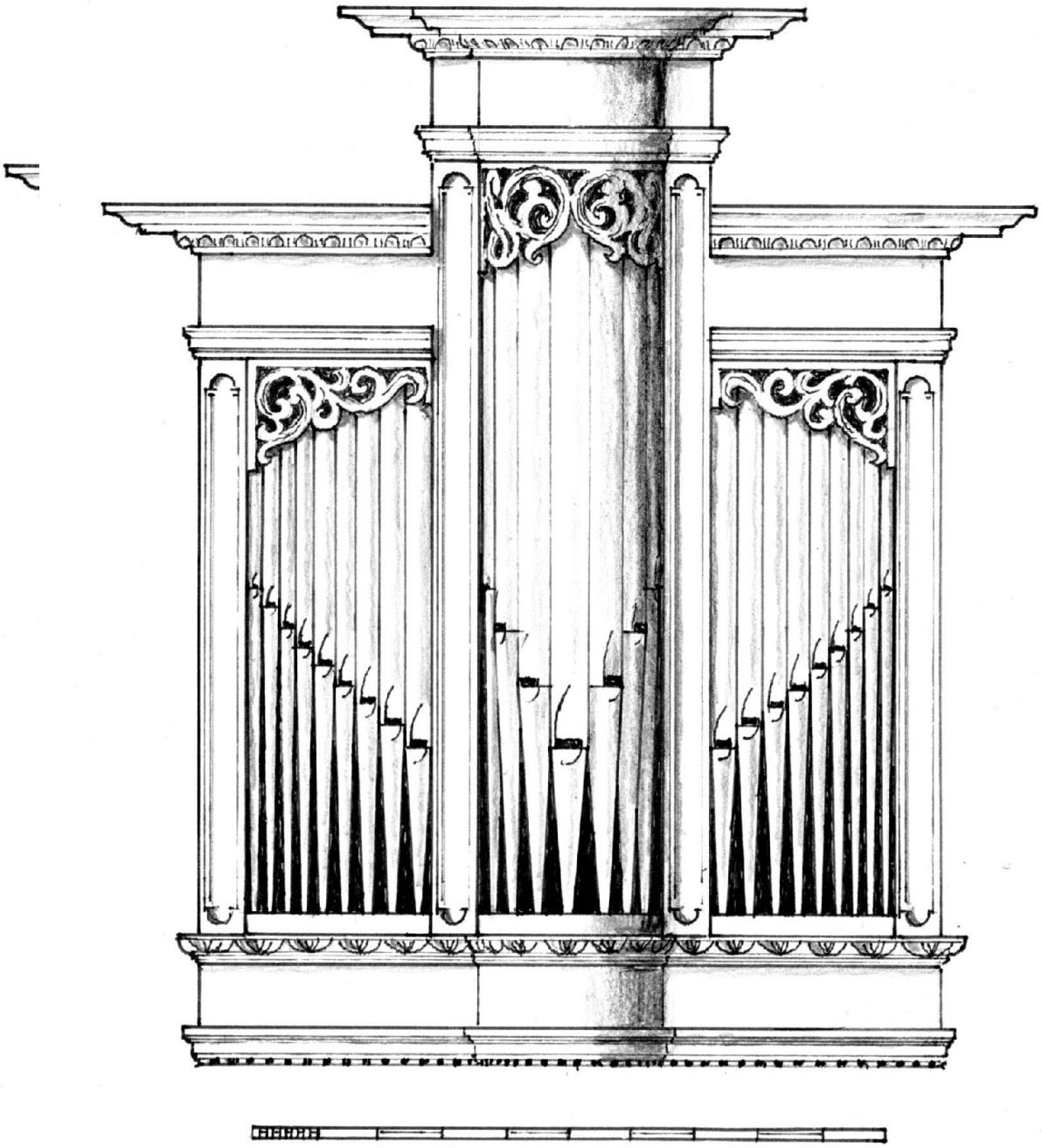
It is a simple, standard positive model - very similar to the Lorentz positives in Schwabstedt and Helsingør - and also to the Hecklauer Under Positive added to the Gottorp Castle organ in 1625 - in this case slightly adapted to similarity with the model of the already extant front of the Brebosch organ, which now entered the role as a 'Hauptwerk' in the enlarged organ.

Of these pipes only No. 12 - A - is entirely missing. The pipe body of No. 14 - G - was in later times recut to form a tapering 'Spitzflöte' bottom C for the 2´ flute when the organs pitch was lowered one semitone from the original 'Choir Pitch'; apparently the foot of No. 13 - F - was reused for this 'hybrid' pipe (the F signature is at least inscribed under the languid where it has been well protected and can still be seen. The body of the F pipe is thus lost, as well as the original foot of the G pipe.
The outer pipes of the middle tower - No.s 10 & 16, respectively, were dummies, conform to Lorentz' normal usage as seen in his other still existing organ fronts.
The pipes in the outer flats still retain their original foot heights, whereas the foot heights of the tower pipes have been recut and modified (but can most convincingly be estimated).

If ever in future a more faithful reconstruction of the Torrlösa Organ will be considered, I can only strongly recommend those pipes to be reinstated according to the original Lorentz Rückpositiv scheme - being by far the best preserved of all now existing Lorentz ranks as far as voicing parameters and tonal quality is concerned.

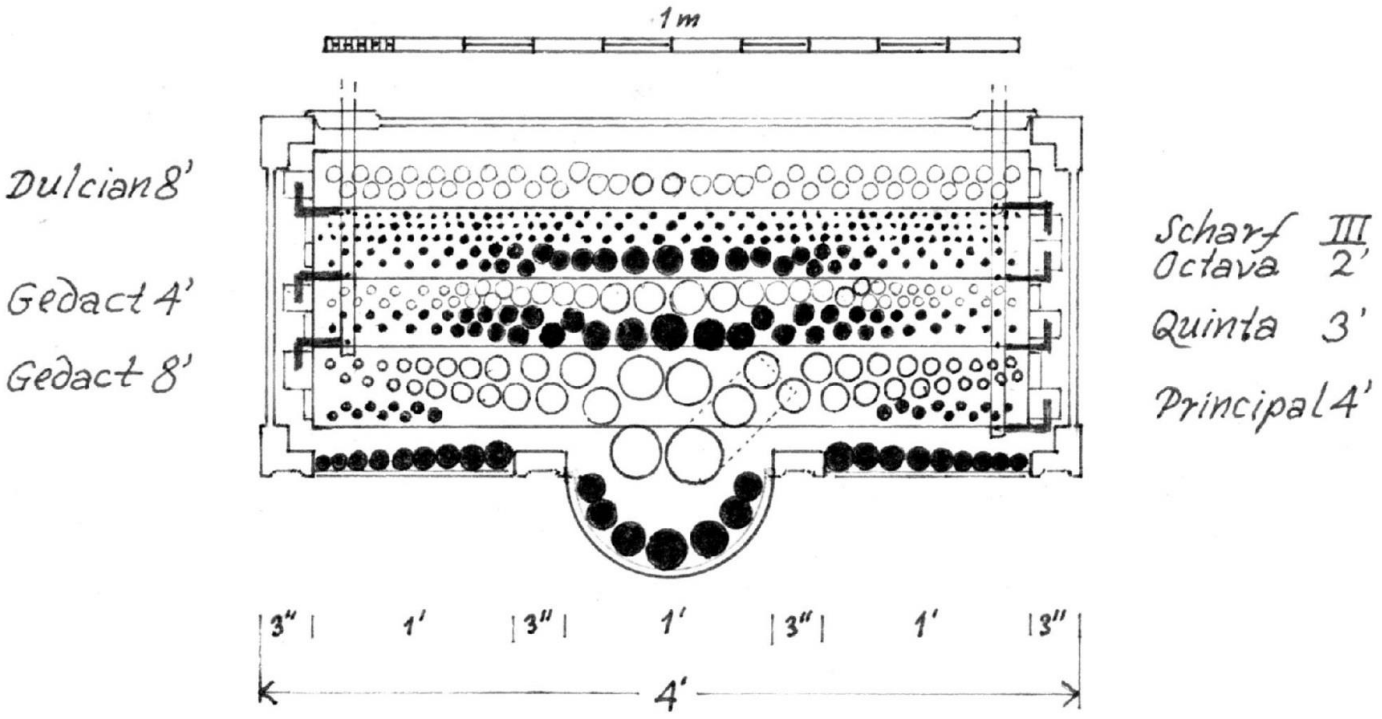
As a basis for the architectural design here presented, it has been presumed that the mouldings will have been conform to those of the Pedal towers (in all probability added simultaneously with the Rückpositiv) even if the top overhang may be considered a bit oversized proportionally. The overall shape is also based on the Schwabstedt design (as well as on the Gottorp positive,

the carved pipeshades of which seem to be made by the same sculptor as those in Schwabstedt).



The pipe dimensions are fairly indisputable (as of course their number and exact placement). The pipe diameters are decisive for the width of the flats and the tower which can thus be estimated rather precisely, being one foot each. In this representation the frame pilasters are 3 inches each (the value of the Gottorp example) - thus in total 4 x 3" + 3 x 1' = 4 feet.

As for the inner layout and arrangement of the Rückpositive, it is not at all necessary to resort to pure speculation. The following design is based on rather established models and relevant information. The scales of Gedact 8′ & Gedact 4′ is on the basis of the Ramus scale presented in Section 3, also applying to the small pipes of Principal 4′, Quinta 3′, Octava 2′ and Scharf.
I have tried out this with templates in full size 1:1 to assure the practicability - the following illustration was drawn accordingly 1:10 for reproduction in this publication.



The pipe layout in the tenor octave of the larger stops may seem a bit crammed, but the full feasibility has been tried out in full size with templates, and is guided by the apparent tendency in those days to place as many (treble) pipes as possibly directly on their slider borings, thus reducing the grooving of bass note pipes to a minimum.
Only the Gedact 8´ bottom C pipe will have to be mitered (the top of it passing over the G and B pipes) - from bottom D the pipes can stand upright.
This design results in a case depth practically identical with the original depth of the Rückpositiv case in Schwabstedt *(as recorded by Nørfelt 2019, p. 76)*. The stop action is foreseen in the back panel of the Rückpositiv case, acting on the sliders by means of simple iron rollers.

The reed stop

Antique reed stops of the age here considered and in a decent authentic state are extremely rare. The choice of a model suitable for a reconstruction of the Torrlösa Rückpositiv may seem a matter of pure conjecture. But there are still here and there some useful information which could possibly be gathered.
According to Hülphers, the Rückpositiv reed is designated "Dul 8" which of course means Dulcian. This statement, however, reflects the situation in 1773, when the Lorentz organ may already have underwent some modifications.
When looking into the Lorentz specifications of positives, stops like Krumhorn or Regal are mostly encountered. The only other instance of a Dulcian is in Helsingør Olai, where, however, this stop could as well have been the result of the Kastens intervention in 1726.

Some precise statements on the Lorentz reeds can be found in the report on the Frederiksborg organ by the very competent Andreas Reuter (1836 - *Nørfelt 2019, p. 196-197*) who notes that all the reed stops have metal boots, adding that these are of the same sort as the old ones in Roskilde (which latter are still existing!).
Reuter further states that the shallots of the Trompete have no lead faces (which means that they were of the old, fully open regal type). He proposes to rework the Positiv Krumhorn into a Dulcian and furnish some of the bass note shallots with lead faces.

For a tentative reconstruction of the Torrlösa Rückpositiv, I would for the reed stop recommend as a model the reed stop of the Jonas Rosendal organ (1723) from Hoff kirke, now in Norsk Folkemuseum, Oslo - Bygdøy. In fact this little instrument abounds in old, recycled pipes from different scrapped organs - and the reed stop (modified by Rosendal by adding longer resonator tubes) might very well happen to be the oldest preserved reed stop in Scandinavia - theoretically nothing contradicts its possible origin from a scrapped Lorentz organ. From the outset it was a short regal, very similar to the Antonius Wilde Brustwerk Regal from 1599 in Lüdingworth; while Wildes stop is a 'Messing Regal' (of brass) the Hoff stop is made of lead. The round blocks may possibly originally have been set into metal boots, even if they are in the Rosendal version set into borings in a common wooden block.
The original parts of the resonators - being conical and very short - are similar to those of the Stellwagen Brustwerk Regal in St. Jakobi in Lübeck, which latter have, however, wooden square blocks according to the North German tradition (as well as those of the Compenius reeds) and in this respect are not comparable. Reuter has reported that the tuning wires of the Lorentz reeds are of iron, which is also the case with the Oslo reed pipes.
This Oslo Regal - in its supposed original shape - has in recent times been built as a replica in a supplementary Brustwerk in the reconstructed 'Düben' Organ of the St. Gertrud German Church in Stockholm.

As resonators of a slim Dulcian would hardly surpass the Regal resonators in diameter, the choice between those stops after all do not affect the above supposed pipework layout of a reconstructed Rückpositiv.

According to Reuter the bottom octave of the Frederiksborg Posaune 16´ was built in the form of a Dulcian (thus half length) owing to lack of height in the room, but even though he deem some shallots and tongues not stout enough, he does not complain about the resonator lengths of the Trompet stops which implies that he may have found them being of sufficient 'full length'. As the most likely motivation for the Lorentz tentative lesser modification of the Helsingborg organ in 1628 I have conjectured the wish to create room enough for the inclusion of full length resonators of a Trumpet 8´ in the middle tower, and think they would hardly have been of the undersized type.

The diameters of Lorentz trumpets are, though, not likely to have been wide scale, seeing that his flue pipe scales were rather on the narrow side in the bass ranges. This in contrast to the trumpets of the Frietzsch tradition which apparently were of rather wide scale (as still seen in the Tobias Brunner organ in Tellingstedt and also can be deduced from some layout templates I have been able to identify in the Malmö Petri organ in the H. Chr. Frietzsch version of 1660).

Appendix: Comparative Chronological Table

Helsingborg St:a Maria	**Helsingør Sancta Mariæ**	**Helsingør Sanct Olai**
		1559 Recycled organ from Esrom
		1570 New Brebosch organ
		1575 Brebosch added one stop
		1579 Brebosch 4 new bellows
c. 1580 Brebosch organ		
		1580-82 Brebosch tuning / repair (work on Kronborg organ)
		1602-3 Brebosch add. = 17 stops
		1625 Lorentz rebuild, HW-RP-Ped
(1628?) Lorentz 1st rebuild (?)		
	1634-35 Lorentz HW-Underpos.-P. (1636-39 Kronborg Lorentz)	
1641 Lorentz HW-RP-Pedal		
		1650 Lorentz (dead). Mülisch
1662 Frietzsch reparation	1662-63 Frietzsch rebuild	
		1667 P.Karstensen new pedal chest
1693 Theft of lead pipes - reparation		
		1726 Kastens relocation to west gall.
1735 Jonas Hielm reparation		
1748 Hardt new bellows		
	1784 Wroblewski reparation	
c.1830 C. Grönwall reparation		
1850 Fogelberg relocation Torrlösa		
	1854 Marcussen new organ	

Lorentz front pipes E and C of lead

Detail of E pipe mouth - languid, upcut and flue in admirable unchanged condition

Lorentz led pipes E and C pitch radically altered by Frobenius by cutting tuning coils (E with new piece of rolled lead inserted)

Damages on those 2 pipes as found in March 2000, just where new pipe foot tips were soldered on c. 1960. the new lower part disguised by paint. This calamity only stems from the pipemakers

size (glue & white chalk) not being washed off the inside after soldering but accumulating moisture on the thin lead material

Left: C-pipe drastically retuned by coiling down - Right: my exact replica of this same pipe cut to correct C-pitch

Embossed Brebosch dummy front pipes of pure tin (small holes of tin lepra mainly around lips)

Ordinary Brebosch front pipes (also affected by tin lepra)

Rear view of embossed pipes (the patterns are carried all around the pipes).

Brebosch dummy, embossed front pipes (the cutting out of rear top gives an illusion of speaking pipes, frequently encountered in antique organs

Brebosch normal front pipes, body lengths added to and hooks displaced for later re-arrangement

The sole surviving Brebosch front pipe of the Næstved swallows-nest organ

Lorentz front pipes from former Rückpositiv. Leaf silver partly preserved, the overlapping of individual leaves transversely marked. Leaf gold on lips

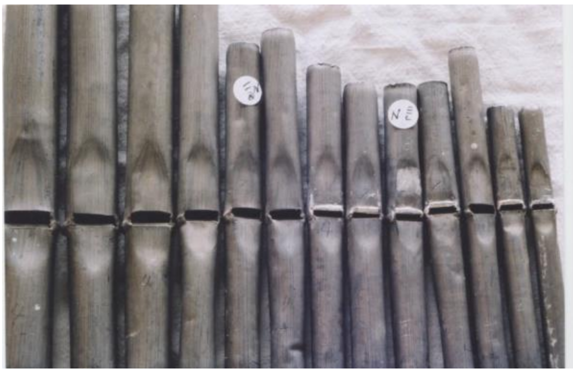
The Lorentz former Rückpositiv front pipes display astonishing well preserved mouths: low cut-up, no nicking

Front pipes from former Rückpositive middle tower, now only on display. Left: the G-pipe body recut as 'Spitzflöte', on the F-languid (and foot). These pipes were never overpainted

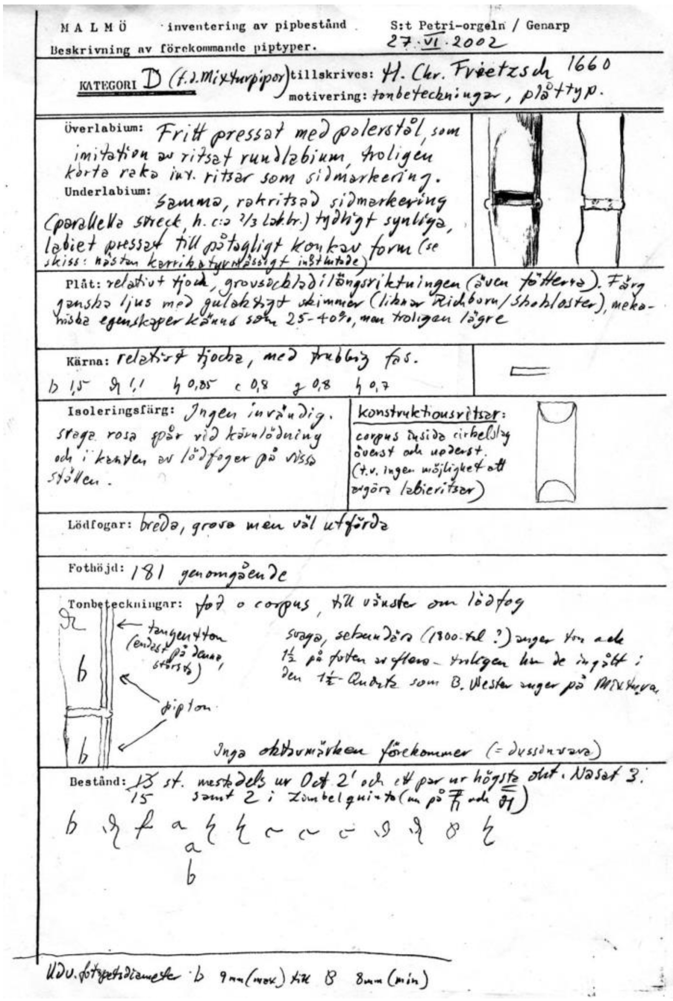
The present Octava 2′ is a collage of older pipes. No. 2 from right may be the earlier bottom C in 'Chor-Thon' - the pipe far right is at present the bottom C pipe according to standard pitch - it is in reality the recycled former Lorentz Principal 4′ bottom A pipe, of the standard make for pipes inside the case.

Rear view of the same pipes. The Lorentz former A pipe still displays the pipemakers red size along the soldered seams which was never washed of (frequently also seen in such pipes made by Herman & Eijsenmenger).

Old Gedact pipes and a lead fragment of one (in recent times only in store) from the Morlanda organ - presumablyby Brebosch, representing his lead pipes inside the organ cases. No pipes of this types can be found in the Torrlösa organ (their presumed former existence may have ended with the theft of 1693)



A group of pipes in the Malmö Petri organ, now intercalated here and there in different stops, but identified as made by Frietzsch for new Mixtur and Scharf in 1658-60.
Right: my description sheet of these pipes



MALMÖ inventering av pipbestånd S:t Petri-orgeln / Genarp 27.VI.2002
Beskrivning av förekommande piptyper.

KATEGORI D (f.d. Mixturpipor) tillskrives: H. Chr. Frietzsch 1660
motivering: tonbeteckningar, plåttyp.

Överlabium: Fritt pressat med polerstål, som imitation av ritsat rundlabium, troligen korta raka inv. ritsar som sidmarkering.
Underlabium: samma, rakritsad sidmarkering (parallella streck, h. c:a 2/3 lab.br.) tydligt synliga, labiet pressat till påtagligt konkav form (se skiss: nästan karrikatyrmässigt instuckade)

Plåt: relativt tjock, grovsåckbladi längsriktningen (även fötterna). Färg ganska ljus med gulaktigt skimmer (liknar Ridborn/Skoklaster), mekaniska egenskaper kännas som 25-40%, men troligen lägre

Kärna: relativt tjocka, med trubbig fas.
b 1,5 d 1,1 h 0,85 c 0,8 g 0,8 h 0,7

Isoleringsfärg: Ingen invändig. svaga rosa spår vid kärnlödning och i kanten av lödfoger på vissa ställen.

konstruktionsritsar: corpus insida cirkelslag överst och nederst. (t.v. ingen möjlighet att avgöra labieritsar)

Lödfogar: breda, grova men väl utförda

Fothöjd: 181 genomgående

Tonbeteckningar: fot o corpus, till vänster om lödfog
tangentton (endast på denna, största)
pipton
svaga, sekundära (1800-tal ?) anger ton och 1½ på foten av flera - troligen har de ingått i den 1½ Quinte som B. Wester anger på Mixturen
Inga oktavmärken förekommer (= dussinvara)

Bestånd: 13/15 st. mestadels ur Oct 2' och ett par ur högsta okt. Nasat 3: samt 2 i Zimbelquinte (m på f̄ och d̄)

Udv. fotspetsdiameter b 9mm (max) till 8 8mm (min)

Frietzsch Spitzflöte pipes in the Malmö Petri organ.
In the Torrlösa organ there are no surviving pipes from the Frietzsch intervention in 1660 (otherwise they would be easy to recognize)

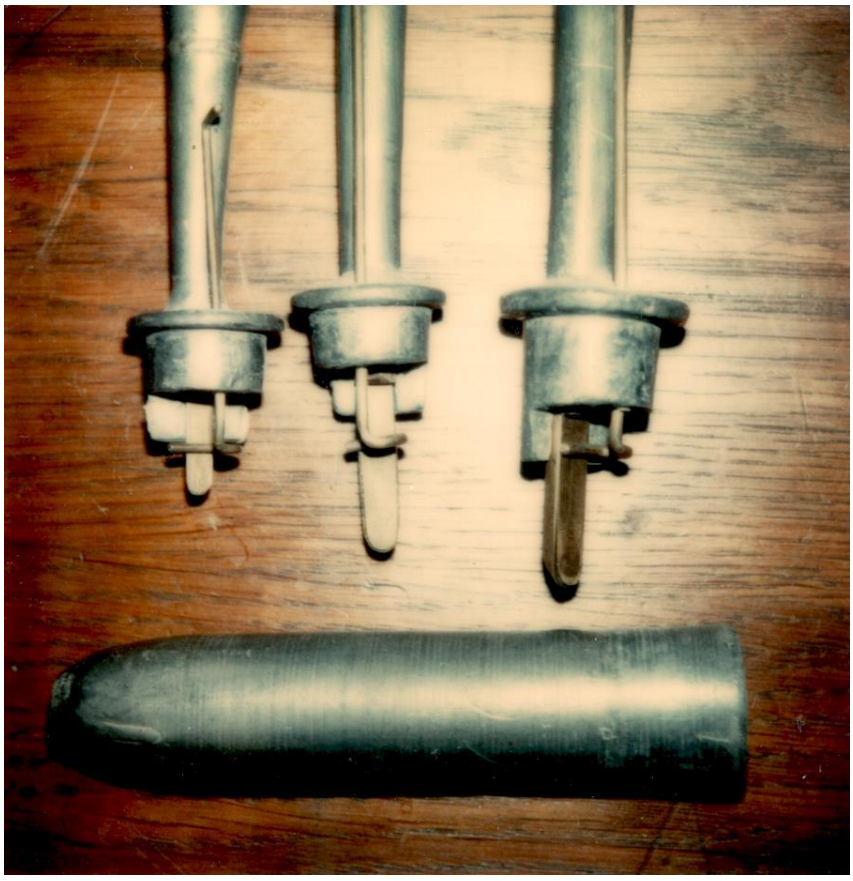
Pipes of the present Gedact 8′ and 4′ in the Torrlösa organ. The special form of their lips point to Georg Amdor as their maker. He may never have been involved in Helsingborg, these pipes could simply have been introduced by Fogelberg in 1850

Front pipes of the Georg Amdor organ in Östra Ljungby. Andors special lip form is a rather unique mark, which allows for a tentative identifiction of the present Torrlösa Gedacts

The c-pipes of the Spitzflöte. So far the maker of these pipes cannot be identified. They may simply stem from a stock of scrapped and recycled pipes available for Fogelberg

Down in the middle tover of the Hauptwerk this odd ad-hoc collage of cut and rotated parts of renaissance carved ornaments may have been availabe when Lorentz disposed of the outer parts of the original Brebosch organ case - here recycled as a contribution to add to the height of this tower. Apart from this brutal rearrangement, these ornaments display an admirably well preserved polychrome surface in lüster-technique (transaparent colours on leaf gold - 'metallic' effect). If carefully studied, these fragments might possibly present clues to the design of the lost parts of the Brebosch casework. The sculptor of these ornaments may well have been the same who executed the ornaments of the Næstved organ.

Old reed pipes in the Hoff organ - Norsk folkemuseum, Oslo-Bygdøy - recycled by Jonas Rosendal in 1723. The construction is very similar to the Antonius Wilde Brustwerk 'Messing Regal' in Lüdingworth (1599) but here made of lead - round blocks partly of wood. Tongues and shallots of brass (with lead bottom), tuning wire of iron. It is a reasonable assumption that the Lorentz reeds will have been similar - and the possibility that he could actually have been the maker of these cannot be dismissed



Parts of the oldest reeds in Roskilde. According to Andreas Reuter the Lorentz reeds in Fredriksborg all had metal boots of the very same type as the old ones found in Roskilde (bottom)

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Inside rear view of the Hauptwerk in its present Frobenius state.
To the right is seen the 3 embossed dummy Brebosch pipes (with the fake 'tuning outcuts'!) in the little flat following the larger treble flats.
The present front treble flat displays the later ad-hoc arrangement of former Lorentz Rückpositiv front pipes, irregularly intercalated with some modified Brebosch tin pipes (now not speaking)

Tot.			Omkrets	Ø [beräkn.]	Ritsmark. Lab. bredd	Uppsk	Spelt	Kärntjockl.	Plåttj.	Total Corpus	Fothöjd	Lab.höjd	Övre konstr. cirkels nedre h. över kärna		Omkr. topp
Ds	C C	39	215	68,4	54 (53½)	[16–17?] 14–13,5	c:a 0,6–0,9	4,4	? / 0,6	1156	(skarvad 410)	108 / 27	Urspr. sänkning av uppskäret	ändringen Fotspets 0,75–0,62	216
D	C	ʃ	208⅔	66,4	c:a 51	14,1				1156	349				(Tenn
	E E	31	182	57,9	44½ (44)	13,5–13,7	0,35–0,4	4	1,04 / 0,49–0,65	1056	(c:a 495)	91 / 24	1046	Plåt fotsp. 0,58 0,78	182⅔
	D	29	196	62,4	47½	ilödning				1057	skarvad				Blypipa
?	c	/////	(197)	62,7	48	(? sänkt)				1075	422	Helt ny baksida pålödd			Tenn
G	F	ZL	175⅓	55,8	c:a 42½	13½				923	skarvad				Bly
(A)	G	32	163⅔	52,1	c:a 40	c:a 12,8				910	skarvad				Bly
H	bx	9	134¼	42,7	c:a 38	? fasad				620	–"–	Nya skägg pålödda			Tenn
cs	c	1	124	39,5	30¾	sänkt				599	–"–				
(blind)	helt ny														
(blind)	[?]	[?]	124	39,5	c:a 30					500	helt ny				Bly
(blind)	g	4	180	57,3	c:a 42½	13–13,3				1006	425	intakt klingande pipe, nu blind			Tenn
Gs	e		173⅓	55,2	41½	12,1				865	494				Tenn
Fs	e ex	7	174	55,4	c:a 42	nyskuren				881	497	urspr. corpusskarvning +19 mm			Tenn
(blind)	dx	7	140	44,6	c:a 34½	omlödd				673	563	har kärna o stämutsk. fot urspr. blind			Tenn
B	d	8	140	44,6	c:a 34½	10,8–11,1				674	563				Tenn
(blind)	c	/	120⅓	38,3	c:a 29½	2 × omlödd				589	640				Tenn
?	c	16	131⅓	41,8	c:a 32					skarvad	ny fot				Tenn
		Beteckning under kärna								Resterande corpus (max)	Fotspetsar sek. stukade				
25/a	[ingen] c̄	[ingen]	73⅓	23,3	18⅓	5,7		c:a 1,9	0,55–0,42	229	153	Corpus rörgjuten (sekundär?) fot trästickl.			
32	g g	[–"–]	72	22,9	(c:a 17½)	5,4–6,1		1,7		156	186	Sek. skägg grovt pålödda (1960?)			
31/a	f f	f	65½	20,8	16½	5,3–5,5	c:a 0,35–0,45	1,9		155	skarvad				
29/gs	f f	4 (?)	62⅓	19,7	(c:a 16)	5,8		c:a 1,2	0,40–0,27	172	186				
43/b	[ingen] f	(?)	38½	12,26	c:a 10	c:a 3		0,9		69	186				
45/e	[ingen] a	(?)	35½	11,3	rits 9 / öppning 8½	2,5–2,8		0,9		63	188				

Totalradie fot C c:a 560   E c:a 845

Torrlösa, manual mittarek + udda

-MK 21 III.00

Frob.			Omkr.	Ø [Ber.]	Lab.	Uppsk	Total Corpus	Fothöjd		
								?		
D	C		197	62,7	47 (min 46½)	14,2	1180	349		Tenn
E	D		191¼	60,9	46	13,8	1065	427		Tenn
Fs	D		180⅔	57,4			skarvad med g.l pipkropp	425		Tenn
G	ny pipa av äldre plåt – inlödd blyståmrulle – medvetet felbarium ?									
A	g		152⅓	48,5	ca 37	(ilödd) (13?)	870	510		Tenn
H	a (?)		139⅓	44,3	34½	10,1	672	566		Tenn
cs	b.		132	42	ca 32	(9,9) omlödd	skarvad	557	små skägg pålödde	Tenn
Oct 2' C	A		147	46,8	36	gammal inlödd. 10,9	köpad 1962	215	Pipa liknande årgång som fasadpipor, innervedspipa m. rakritade labie blygods utan hyllkanten, kvarsittande röd färg utan.	
			max 97½	31				max 381		
			min 88	28				min 333		
	H	11	143	45,5	34½	10⅓				metall
	B	15	147	46,8	34½ (35)	10⅓				"
	G [akärna F]	14	ca 166	52,8	ca 41	Omdanad till Spetsflöjt				"

Torrlösa Manual småfällt tennpipor. "Lorentz-pipor" hög tennprocent, "Brebosch-pipor" rent tenn (m. tennpestangrepp)
Alla ~~Lorentz~~ har blodsilver, samtl. har förgyllda labier. "Brebos-piporna har så högt sittande kärnor att de troligen aldrig varit klingande. Ev. rester av öglor har

			omkr.	Ø [beräknad]	Lab.	Uppsk.		Kärnt.		Tot. corpus	Fothöjd	
d	c	17	131⅓	41,8	30-30½	9,5		ca 2,3		582	265	
e	d	18	121¾	38,7	28	9				539	300	
fs	e	19	112⅔	35,8	27½	7,6				480	329	
gs	f	20	100½	32	24,1	7,3				433	358	
b	g	21	93⅓	29,7	22	6,8-7,2				393	393	
c̄	a	22	85	27,1	20⅓	6,1		1,8		345	422	
blind		2	91⅓	29,1	23	7-8-7		1,7 stejl		gl. skarvning	430	Brebos-(kapile?) m. kerne
d̄		23	81	25,8	19	6,2		1,9		306	450	
blind		41	77½	24,7	20	gl bearbetning				gl. skarvning	skarvad gl. (472)	Br.
ē		24	77⅔	24,7	18,7	ilödning				268	485	
f̄s		25	70⅓	22,4	17,3	-1,-				255	518	
blind		43	72	29,9	18,4	5,4-6,2-6,2				198	skarvad 505	Br. klingande corpus ca min. 179
blind		4	64	20,4	17	48-43				147	535	Br.
blind		18	62½	19,9	16	4,2				128	skarvad	Br.
ds	c		127⅔	40,6	ca 29	9,5				581	267	
f	d	8	116⅓	37	28⅓	8,1				533	299	
g	f	7	106	33,7	24,6	ilödning				475	331	
a	g	6	96⅔	30,7	22,6	6,9-7,4		2,-		431	358	
h	a	5	87⅓	28,4	21½	6,5-6				388	392	
c̄s	h	4	84⅓	26,8	19½-20	6,4				343	422	
d̄s			90½	28,8	23	ca 7		2,-		skarv.	(440 skarv.)	Br.
d̄s		3	78⅓	24,9	ca 19	ilödning		1,9		305	451	
blind	Ny pipa av en	slaktad	större	original pipa!								
f̄	d	2	74⅓	23,6	17,3	5,7				271	486	
blind		18	73½	23,4	17⅔	?				skarv	skarv (inkl. 502)	Br.
ḡ	f	1 r	65⅔	20,9	16	4,7		1,5		skarv	516	
blind	Nycorpus av gammal plåt, fot av "Brebosch"										439 (original) + 73 + 30 = 543	
blind			65	20,7	15½	Ny fot av gammal plåt						

"Brebosch"-piporna hade annorlunda fothöjder (starkare stigande labiehöjder?)
Nästan alla "Lorentz"-pipor har jämte numreringen ett litet "r" mestadels till höger om lödfogen – betecknar troligtvis "ryggpositiv".

MK 21.III.00

TORRLÖSA inventering av pipbestånd

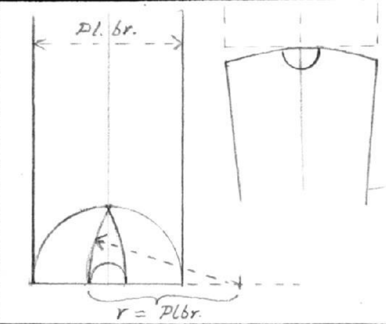
Beskrivning av förekommande piptyper.

KATEGORI Princ. 4' Pedal tillskrives:

motivering:

Överlabium: Spetsbågerits, radie = plåtbredden. Bredd = 1/4 plåtbredd. Inre konstruktionslinjer och cirklar enligt skiss.

Underlabium: Halvcirkelrits, gott och väl, men ingen synlig centrummarkering. Tillsynes inga ytterligare konstruktionslinjer inne i foten, bortsett från mittlinjen.



Plåt: Bly, lika mjukt som modernt valsat bly. Ut- och insidor finsichlade, inga gjut- eller hammarspår. Tunnhyvlad uppåt. Konstruktionscirklar: nedtill inv. svagt synliga, upptill borthyvlade (?) men cirkelrest synlig på E (plåten tillverkad med avsevärd överlängd).

Kärna: Kilformad normal

Isoleringsfärg: Ingen invändig. Kvarsittande på baksömmarna, smalt stråk rosa färg (innehåller troligen krita förutom rött pigment).

Skägg: inga

öglor: urspr. har skurits bort - okänd typ - två lödmärken kvar c:a 135 högre än nuvarande.

Lödfogar: smala, höga, välgjorda.

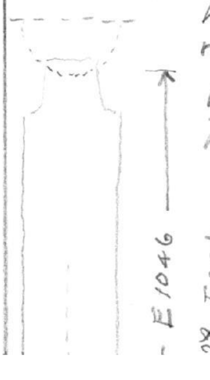
Originalöglor bortsmälta, nya sitter 135 under gamla ritsmarkeringar (c:a 1245 över fotspets)

Fothöjd: varierande (fasadpipor)

Tonbeteckningar: På sidan, till vänster om lödfog, på corpus (litet ovanför labie toppens höjd) och på fot (ganska långt ned). På undersidan av kärnan, stort och tydligt.

Dekor: överallt rester av bladsilver (c:a 110 m/m blad) och vit grunderingsfärg, på främre hälften av ytan. Labiedekor i bladguld och bred, svart konturmålning (allt fragmentariskt). C-pipan har varit helförgylld ovanpå silvret (= 2 omgånger dekor? - 1628 och 1641?)

Bestånd:



Konstruktionsritsar invändigt. Mittlinje även i foten.

Torrlösa inventering av pipbestånd

Beskrivning av förekommande piptyper.

KATEGORI 6 magasinerade uddepipor

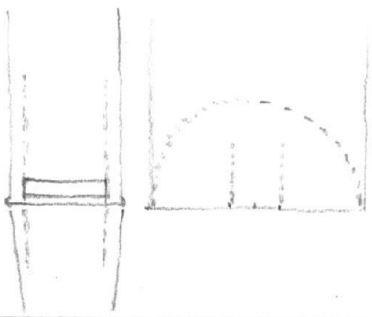
tillskrives: (Lorentz ?)

motivering: 1600-talsutseende, liknande Övertorneå

Överlabium: Rakritsat, streckhöjd c:a 5/3 labiebredd

Underlabium: Rakritsat, otydligt streckhöjd c:a lika med labiebredd

Invändig konstruktionshelvcirkel otydlig men finns troligen



Plåt: (1 st. corpus rågjuten). I övrigt: grovsichlad (corpus på längden, fötter tvärsichlade), delvis med spår av tandhyvel. Tämligen tunnt gods. Legering ljusgrå, mycket styv (snarlik Övertorneå och Richtorn). Inga spår av fernissa

Kärna: utan klack, utan färg (kraftigt sekundärt kärnstycke, kärnfas otydlig, tillsynes normal)

Isoleringsfärg: helt borttvättad (svaga röda rester vid rundlödning bak).

Skägg: sekundära (Frobenius ?) endast pipa "32"

Lödfogar: välgjorda, normalbreda.

Fothöjd: c:a 186 (se mensurtabell)

Tonbeteckningar: till vä. om lödfog, på alla 6 fötter men inte alltid på corpus (se mensurblad, faksimil).

Enstaka beteckning under kärna (ej konsekvent)

Bestånd: magasinerade uddepipor av principal-innerverkstyp, tydligen ratade sedan restaureringsarbetet påbörjats (1960)

Torrlösa inventering av pipbestånd 21.III.00

Beskrivning av förekommande piptyper.

KATEGORI Gedect 8' & 4' tillskrives: J. G. Amdor

motivering: likhet med Östra Ljungby

Överlabium: Raka sidor med "gotisk båge" överst

Underlabium: Halvcirkel

Plåt: Tunn, grovt hyvlad (strimmig) (4'stämman tunn plåt) Fot tvärsicklad. 8'-stämman samma, men tjock och tung plåt

Kärna: Tunn (sek. kärnstick bortpolerade)

Isoleringsfärg: Bortvättad. Ind. svaga röda spår

Skägg: nya, av bly

Lödfogar: mycket professionella

Fothöjd:

Tonbeteckningar: urspr. saknas till stor del; förekommer i övrigt på foten, överst till vänster om lödfog. Ej under kärna.

Bestånd: Ged. 4' från mv. märkning C, Urspr. bet. på fot A.
Ged. 8' från mv. fs°, gammal men troligen sekundär beteckning Dr 8 (skrift ser ut som 1700-tal)

Torrlösa inventering av pipbestånd 21.III.00

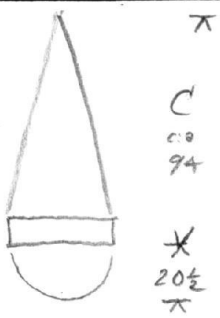
Beskrivning av förekommande piptyper.

KATEGORI Spetsflöjt 2' tillskrives:

motivering:

Överlabium: Raksidigt, spetstriangel

Underlabium: Halvcirkel



Plåt: Rågjuten (åle Ekengren), utsida endast bitvis sicklad. Tunn.

Kärna: Tunn, trubbig fas

Isoleringsfärg: Ingenting kvar

Skägg: trolygen ayere

Lödfogar: Välgjorda, smala

Fothöjd: 180

Tonbeteckningar: Endast överst på fot, till vänster om lödfog. Inga under kärna.

Bestånd: gammal kortoktav (CDEFGABH upp till c3 F, (i basen mmers tillagda kompletteringspipor).

NB: Quinte 3' börjar mmers med två pipor märkta d och e som ser ut att vara samma fabrikat, elmm konventionella spetsbågelabier

Labiekonstruktion

Torrlösa

C-pipen: cirkelstigen sammanfaller exakt: punkt A

E-pipen: labiebågen OL höjder högen mm ovanför punkt A.

Cirkeln $L_1 L_2$ är en fortsättning på underlabiet