



The bells in Giacomo Puccini's opera "TOSCA"

By Günther Möller

The recurring questions concerning the bell scenes in "TOSCA" by Giacomo Puccini are the motivation for my research.

The work in hand shall document (for example)

- * how the allocation of the bells' positions on the side stage as well as the backstage of the opera house can be managed -
- * which relation the individual bells have to the mentioned church names of Rome -
- * and how a naturalistic sound pattern can be created in the prelude to Act 3

Giacomo Puccini was very intensively dealing with the realization of the bell scenes of the first and the third act during the time of creation of his opera "TOSCA". This is substantiated by authentic statements by Puccini and the reports linked to them and comments from his environment.

Giacomo Puccini:

“... I really wanted to know how the church bells really sound, so I travelled to Rome and sat for several days on the steps of the fountain in front of the Saint Peter's Basilica in order to listen to the bells ... The largest one (the lowest pitched bell of the Basilica di San Pietro) is tuned to E. I carried music paper with me and recorded the sound of the bell ...”

Prior to this statement by Puccini, however, the determination of the tone **E** was apparently not yet certain, as can be gathered from the book *“Il pretino di Puccini”* by Petro Panichelli:

“... that torn, indistinct, confused, intangible sound of the great bell of St. Peter's ...”

Nowadays we know from the analysis of the bell foundry Grassmayr in Innsbruck that the large bell of St. Peter's is certainly tuned to the tone **E**.

Quote Peter Grassmayr: *“...The bell is a so called septim-bell, it has a different not so harmonic inside harmony than an octave-bell...”*

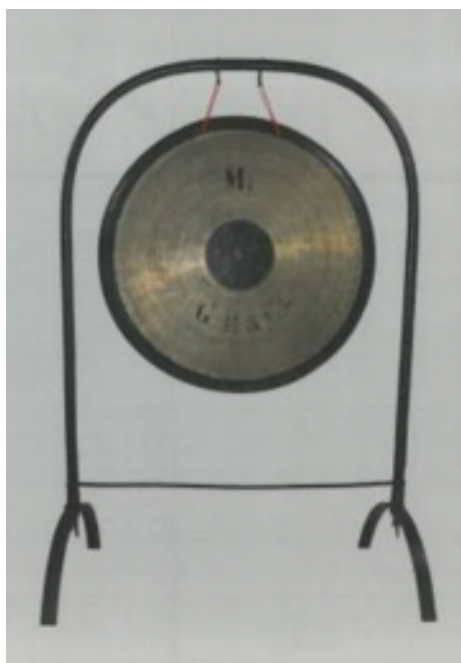
While writing the third act, Puccini merely wanted to express with the notation of the bell **E** in the contra octave that the lowest possible available bell instrument should be used.

This he apparently found at the family business Tronci in Pistoia, which manufactured instruments like bells, gongs and tam-tams used by composers like Mascagni, Verdi and Rossini as well as by Puccini.

Quote from Maestro Luigi Tronci:

“... in his scripts and scores we read that he had three types of instruments built that relate to Tosca ...”

Regarding the particular gravity of the notated contra **E** and Puccini's desire for a deep, powerful and mournful sound, Luigi Tronci further reports:



“... a kind of gong with the edge pointing upwards, comes closest to the master's idea. He wanted the tone to be a low E and to resemble the ringing of the great bell of St. Peter's...”

The originally so-called “Tam-Tam Bell” (Ø 70 cm) hangs in an iron arched stand and is stamped Casa Ricordi, since the publisher later rented this instrument to various theatres in addition to the orchestral material for “TOSCA”.

The tubular bells specially made for the “TOSCA” were about three meters high and 10 cm thick. Of these and other instruments from the time of the premiere, a wooden frame on wheels with two tubular bells suspended from it and a striking mechanism that moved two hammers via cables still exist. In addition to the player, another percussionist was needed to dampen the tubular bells.



In addition to the "Tam Tam Bell" and the tubular bells mentioned above, today the collection of the Fondazione Luigi Tronci in Pistoia also includes a rack of large singing bowls (copy of the original from the Teatro alla Scala).



Furthermore, the Fondazione has a library and an archive with original documents of writings and correspondences of famous composers. In his writings, Puccini indicated in which part of the scene the instruments should be placed, conducted tests himself, and also relied on the opinion of bell experts.

Before I go into more detail about the description of the individual bell entries in "TOSCA", I would like to mention an instruction on the first page of an early edition of the score. There, in the listing of the instruments used in the Act I, it says under

"Campane della chiesa" for the bells in $f^1 / g^1 / a^{\flat 1} / b^{\flat 1}$:

"da suonarsi elettr." (to be played electrically). Despite intensive research, the answer to the question of what Puccini meant by "da suonarsi elettrico" and what kind of playing apparatus was available to him at the premiere in 1900 unfortunately remains in the realm of conjecture and speculation.

ACT ONE timpani and 2 percussionists in the orchestra / 3 percussionists backstage.

The setting of the first act is the church of Sant'Andrea della Valle, on June 17, 1800. The day can be determined so precisely because three days earlier Napoleon was victorious in the battle of Marengo in the Po Valley and subsequently defeated himself, which is announced in the course of Act 1 by the sacristan of Sant'Andrea della Valle.

The first bell use is the **Angelus bell** in **f** (small oct.) (score / rehearsal number 13). The sequence of strokes follows a widespread rule for the use of the Angelus bell: The first three contiguous strokes represent the three theological virtues (faith, hope, and charity). The following 4 strokes symbolize the cardinal virtues (prudence, justice, courage and temperance). The other five blows signify the wounds of Jesus (left foot, right foot, left hand, right hand and rib). Puccini omitted a final group of seven beats from his composition, which are supposed to represent the sacraments.

The following bell cue (score / 4th bar after rehearsal figure 68) requires 4 bells in the pitches: **f¹** / **g¹** / **a^b 1** / **b^b 1**.

Score indication: "*campane medie sulla scena (interne)*".

The bells symbolize the fourfold call to the believers to come to the church for the Te Deum. Key is E-flat major, the sequence: **b^b 1**, **g¹**, **a^b 1**, **f¹**.

Puccini drew the inspiration for this scene from the sound of the four very familiar bells from the tower of the village of Bargecchia, about 8 kilometres from his home. On his hunting or fishing trips in the surroundings of his home Torre del Lago, he encountered these bell sounds again and again. The fact that Puccini used these sounds in the first act of his "TOSCA" eventually saved the bells of Bargecchia from being melted down and turned into cannons during the war. It was planned by decree to requisition all the bells in order to transform them into war material, unless they represented a strong historical-artistic value. Thanks to the parish priest of Bargecchia at the time, Don del Fiorentino, after researching the connection to Puccini and a persistent correspondence with the responsible administrator, he was finally able to save the bells.

The conclusion of the act, the Te Deum, follows.

Here, starting in the fifth measure after rehearsal figure 80, two low-pitched bells in **F** and **B^b** (great oct.) are used (score indication: "*campane gravi / lontano, ma sensibili*"), and starting in measure 87, two bells in: **a^b 1** and **b^b 1**.

Score indication: "*vicino*".

The low-pitched bells - as Gregorian accompaniment - play the **B^b** and **F** alternately throughout the introduction of the hymn in slow alla breve for 73 measures including the first eight measures of the Te Deum (until: "*...confitemur*").

The two bells in **a^b 1** and **b^b 1** begin at rehearsal figure 87 with the beginning of the Te Deum for 12 measures. The seven bells mentioned in the first act, belong exclusively to the church of Sant'Andrea della Valle and are therefore played from a single one stage position (backstage).

Not to forget the cannon from afar ("*colpo di canone, lontano*"), which sets its weighty accents from the fifth measure onwards after score rehearsal figure 81 in irregular intervals, but rhythmically precisely integrated.

What a brilliant conclusion to the act ...

ACT TWO timpani and 2 percussionists in the orchestra / 2 percussionists backstage.

In the second act of the opera, two tamburi are set on the stage behind the scene. These should be positioned invisibly behind the window in the decoration (if available in the stage set).

ACT THREE Timpani and 2 percussionists in the orchestra /
4 percussionists backstage /
1 percussionists from the orchestra is at the beginning of the act
backstage for the sheepbells.



Before the famous Cavaradossi aria, Puccini conjures orchestrally over Rome and the platform of Castel Sant'Angelo one of the most beautiful morning moods in musical literature. The song of a shepherd and his flock passing behind Castel Sant'Angelo is the only textual element in the big act introduction until the aria. His song is accompanied by the naturalistic ringing of the incidental music sheepbells that wander along.

This atmospheric picture is perfected with the various bells of the different churches of Rome in the nearer and further distance of the Castel Sant'Angelo (score: rehearsal figure 4 to 3rd measure after rehearsal figure 8).

Giacomo Puccini in a letter to his librettists:

"Around St. Peter's Basilica and Castel Sant'Angelo, everything is surrounded by leaden mist. Very far away, in the far background of San Pietro in Montorio faintly chimes the sound of the bell calling for dawn.

In a moment, after a brief pause, the small bell of the monastery of Sant'Onofrio al Gianicolo rings, to the right, in the middle background. Then, faster, on the left echo the distant bells of San Giovanni in Laterano, of San Pietro in Vincoli and of Santa Maria Maggiore. Then, alone and fast, nearby on the left, the bell of the church of Santa Maria dei Miracoli strikes."

In an original edition of the libretto by Luigi Illica, he mentions the bells of three churches: San Pietro in Montorio (lontanissimo), Sant'Onofrio (molto lontano) and Santa Maria dei Miracoli (lontanissimo).

However, if we look starting from the Castel Sant'Angelo at the real distances in the city map (page 8), the distances given by him would have to be re-described.

In his preliminary work for "TOSCA" Puccini names the following churches in addition to Illica's information: *San Giovanni in Laterano, San Pietro in Vincoli, Santa Maria Maggiore* and the already mentioned *Basilica di San Pietro* with the large **E** bell.

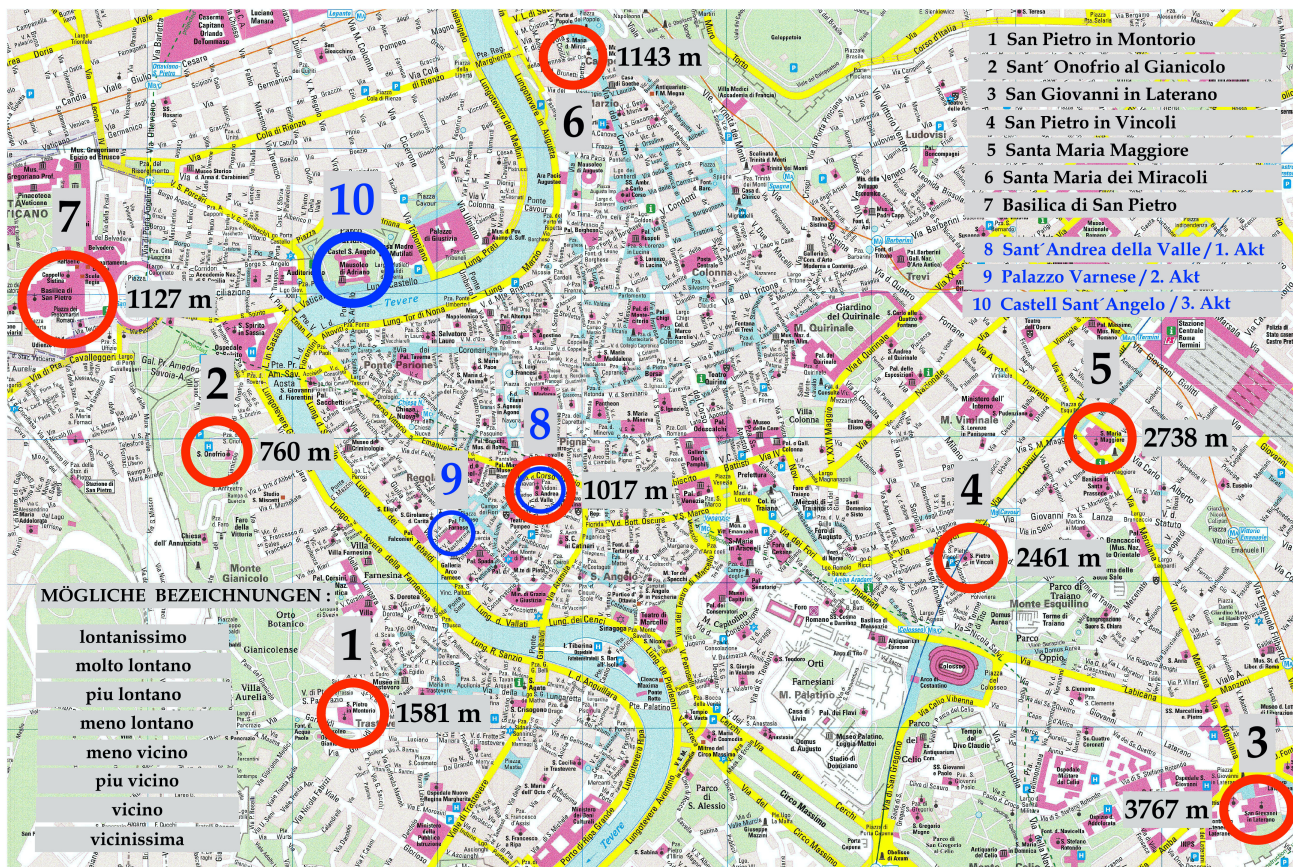
From this it is evident that Puccini must have perceived the scenery from St. Peter's Square or the Castel Sant'Angelo with the viewing or listening direction to the south.

For the sheepbells in the song of the shepherd in the prelude of Act 3 are no written notes either in the incidental music or in the orchestral material. However, there are three detailed notes in the score for the duration of the shepherd's Song, there are three detailed playing and stage directions for the aforementioned **"campanelle d'un armento"**.

A beautiful acoustic effect is created when the player of the sheepbells moves invisibly behind the decoration from one side of the stage to the other for the duration of the song, operating the bells in a naturalistically irregular and dynamically decreasing manner.

With the following city map, the markings and air-line distances (measured from Castel Sant'Angelo), as well as the score indications "*lontanissimo*" up to and including "*vicinissima*", it is possible to establish an authentic context.

The churches are numbered in the plan in the order according to Giacomo Puccini's enumeration.



ACT THREE / FROM REHEARSAL NUMBER 4	BELL :	SCORE INDICATION :
BARS FROM...TO:		
1 - 7	h (small oct.)	lontanissimo (Indication in the first edition of the score: " <i>lontanissimo</i> ")
5 - 8	d²	meno lontano (Indication in the first edition of the score: " <i>piu vicino</i> ")
8 - 11	g¹	vicino
11 - 12	e²	meno vicino
13 - 17	B_b	lontano
18 - 22	c²	piu vicino
19 - 22	F	lontano
24 - 30	f¹	meno lontano (Sant' Andrea della Valle)
29 - 33	b_b¹	belonging to bar 24 - 30 meno lontano (Sant' Andrea della Valle)
32 - 37	a_b¹	piu vicino
36 - 40	h (small oct.)	belonging to bar 1 - 7 / lontanissimo
40 - 46	e²	piu lontano
44 - 51	d²	vicino (Indication in the first edition of the score: " <i>vicinissima</i> ")
48 - 49	B_b (b _b ¹)	(Indication in the first edition of the score: " <i>molto lontano</i> ") (to play: b _b ¹)
55 - 68	E	without indication (meno lontano)

In the first edition of the score, in Act 3 from rehearsal figure 4 under Puccini's designation "*Campane a distanze diverse*", there are only four indications of distance without assignment of church names :

Rehearsal number 4 : ***lontanissimo***

5th bar after rehearsal number 4: ***piu vicino***

5th bar after rehearsal number 6: ***vicinissima***

9th bar after rehearsal number 6: ***molto lontano***

4th bar after rehearsal number 7: (notated contra E Bell: no indication)

In the score version available today, eleven indications of distance are noted.



For the audience in the opera "TOSCA" it may be irrelevant to know the names of the individual churches, but for the performing musician it is valuable information to know the contexts and meanings belonging to them.

The following setups and graphics show, among other things and based on Giacomo Puccini's indications, two practiced bell placements behind and to the side of the stage scenery.

Division of the stage music on four positions

(seen from the auditorium)

Staatstheater Augsburg

(State Theatre Augsburg)

BACKSTAGE LEFT:

ACT 1:

f (small oct.)

f¹ / g¹ / a^{b1} / b^{b1}

F / B^b

ACT 2: - - -

ACT 3:

B^b / *lontano*

F / *lontano*

e² / *meno vicino auch: piu lontano*

BACKSTAGE RIGHT:

ACT 1: cannon

ACT 2: 2 tamburi

ACT 3:

h (small oct.) / *lontanissimo*

a^{b1} / *piu vicino*

E / *without indication
(possibly in the
orchestra)*

SIDE STAGE LEFT:

ACT 1: - - -

ACT 2: - - -

ACT 3:

g¹ / *vicino*

b^{b1} / *without indication*

c² / *piu vicino*

SIDE STAGE RIGHT:

ACT 1: - - -

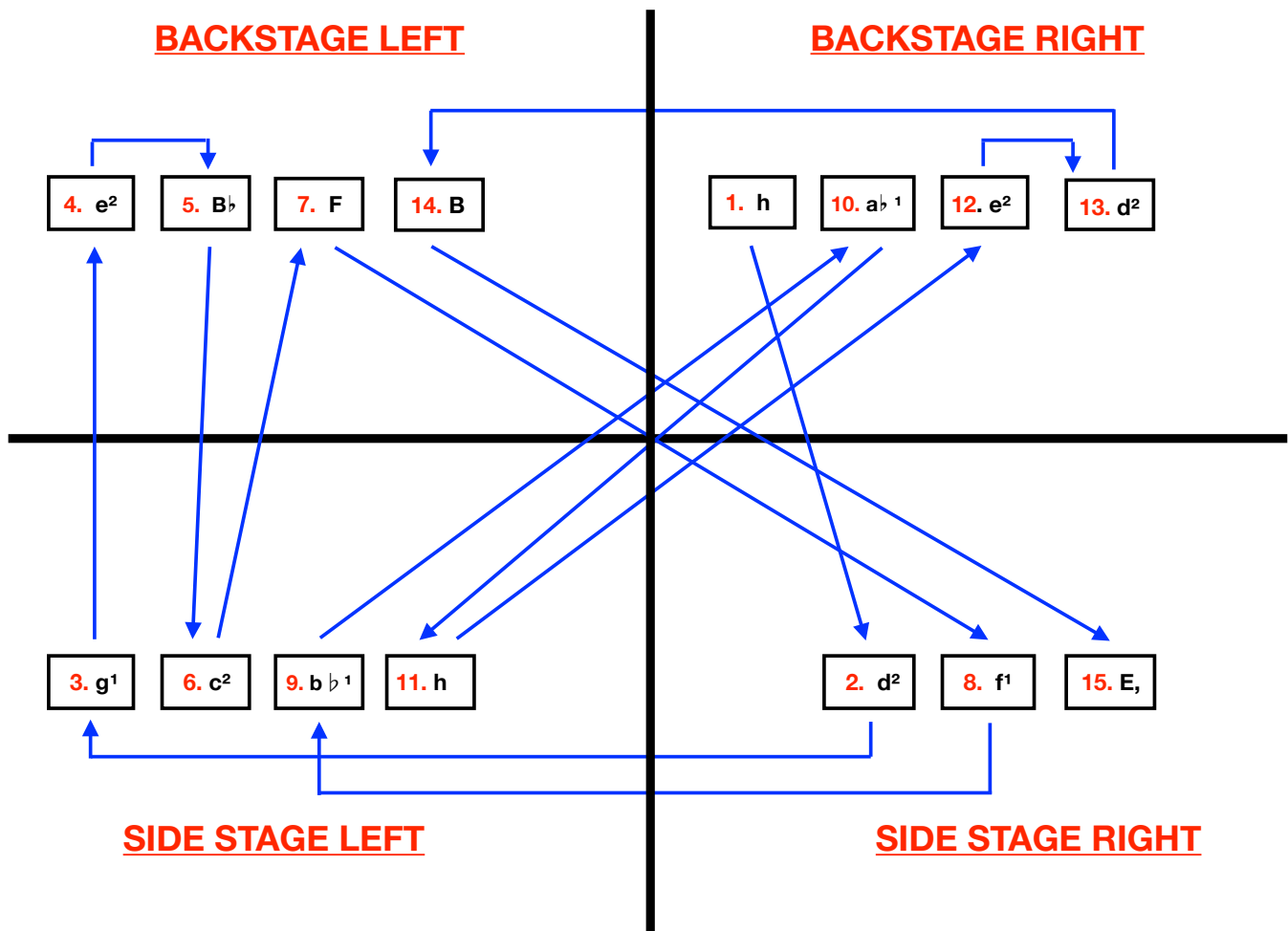
ACT 2: - - -

ACT 3:

f¹ / *meno lontano*

d² / *piu vicino und vicinissima*

ACT 3: Sequence of bell cues for four stage positions



With this setup, during the intermission after the first act, following bells change positions for the third act:

from **BACKSTAGE LEFT:**
to **SIDE STAGE LEFT:**
to **SIDE STAGE RIGHT:**
to **BACKSTAGE RIGHT:**

g¹ / B^b 1
f¹
a^b 1

Division of the stage music on three positions

(seen from the auditorium)

Staatsoper Stuttgart

(State Opera Stuttgart)

BACKSTAGE:

ACT 1:

f (small oct.)

F / B \flat

ACT 2:

- - -

ACT 3:

E / F / B \flat / lontano

h (small oct.) / *lontanissimo*

b \flat ¹ / without indication

SIDE STAGE LEFT:

ACT 1: cannon

ACT 2: - - -

ACT 3:

a \flat ¹ / *piu vicino*

c² / *piu vicino*

d² / *piu vicino and vicinissima*

SIDE STAGE RIGHT:

ACT 1: **f**¹ / **g**¹ / **a** \flat ¹ / **b** \flat ¹

ACT 2: 2 tamburi

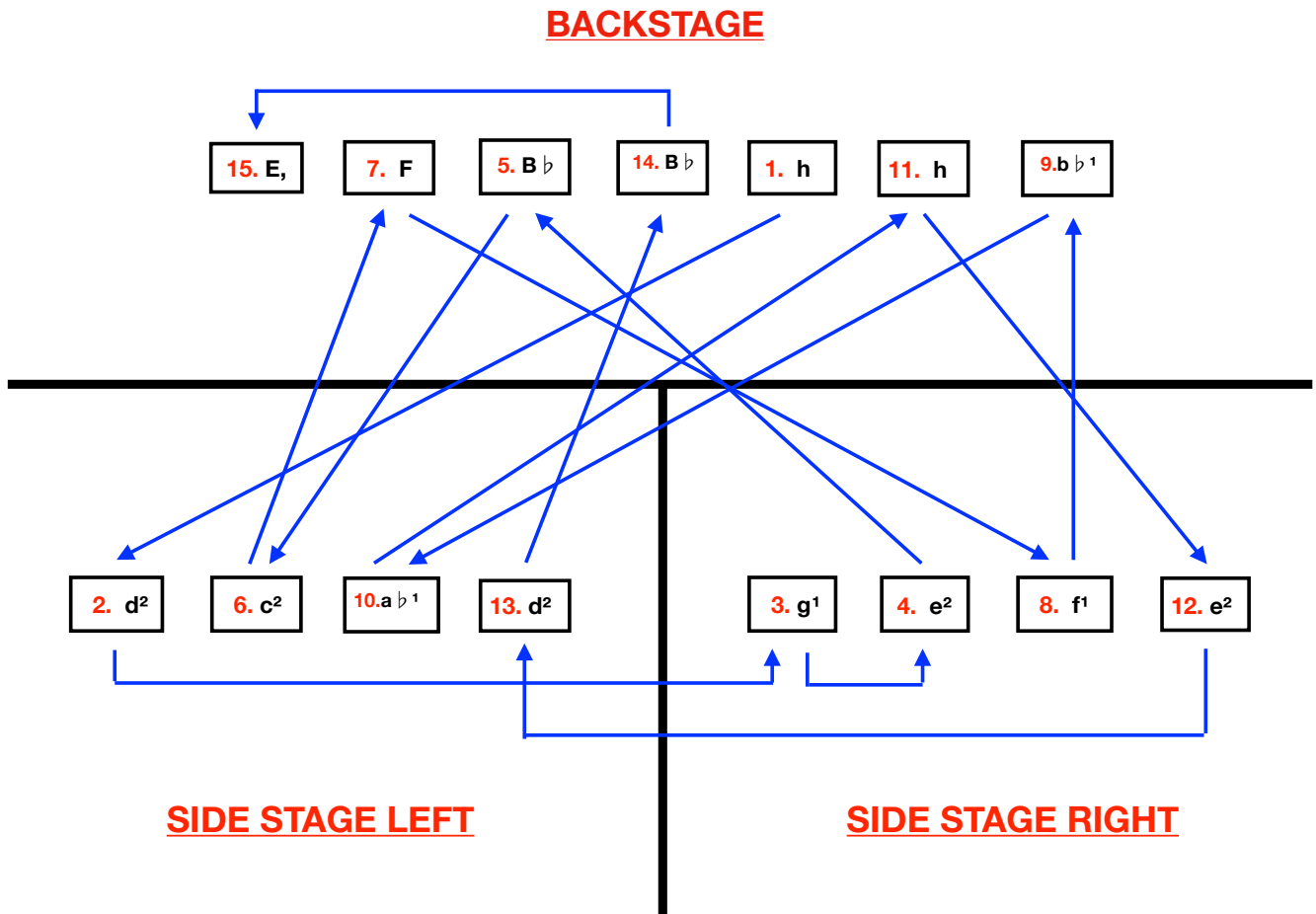
ACT 3:

f¹ / *meno lontano*

g¹ / *vicino*

e² / *meno vicino*
also: *piu lontano*

ACT 3: Sequence of bell cues for three stage positions



With this setup, during the intermission after the first act, following bells change positions for the third act:

from **SIDE STAGE RIGHT:**

to **SIDE STAGE LEFT:** a \flat ¹

to **BACKSTAGE:** b \flat ¹

LIST OF SOURCES

Excerpts from texts / videos / articles

Puccini Biographie	Dieter Schickling Carus / Reclam
Book: Pietro Panichelli	<i>"Il pretino di Puccini"</i> Nistri Lischi Editori, Pisa
Publisher RICORDI	First edition of the score
ital. article :	"proslambanomenos" 30.11.2019 gepostet von daland Internet / Autor unbekannt
ital. article :	"Le Cronacche" vom 22. Dezember 2016 Unterhaltung und Kultur
ital. article :	Claudia Antonella Pastori "Tosca, tragedia e campane" Stampa del Tribunale di Rimini 24.05.2011
ital. article :	Sergio Casprini 13.08.2019 "Der Glockenturm von Bargecchia. Die Glocken von Tosca"
ital. article :	Guglielmo Lera 2006 "Puccini und Bargecchia: wichtige Anmerkungen"
ital. article :	Julia Bagline 26.01.2020 "Die Glocken der Tosca da Pistoia an der Mailänder Scala: Interview mit Maestro Luigi Tronci

Pictures:

PIC. NO:	PAGE:	SOURCE :
1	1	Internet: Free stock photo
2	2	PISTOIA SETTE : "Die Glocken der Tosca da Pistoia an der Mailänder Scala"
3	3	
4	3	
5	4	
6	6	Interview mit Maestro Luigi Tronci vom 26.01.2020
7	9	Internet: Free stock photo

ANNEX:
TOSCA PITCH NOTATION BY OCTAVE

GERMAN	INTERNATIONAL	
<i>Helmholtz pitch notation</i>	<i>Scientific pitch notation</i>	
E,	E1	<i>contra octave</i>
F	F2	<i>great octave</i>
B ♭	B ♭ 2	<i>great octave</i>
f	F3	<i>small octave</i>
h	B3	<i>small octave</i>
f1	F4	<i>one-line octave</i>
g1	G4	<i>one-line octave</i>
a ♭ 1	A ♭ 4	<i>one-line octave</i>
b ♭ 1	B ♭ 4	<i>one-line octave</i>
c2	C5	<i>two-line octave</i>
d2	D5	<i>two-line octave</i>
e2	E5	<i>two-line octave</i>

Andreas Regler