

# AN ANALYTICAL REVIEW ON THE SIGNIFICANCE OF "SWAR-LAGAV" OR NOTE IMPLEMENTATION IN HINDUSTANI CLASSICAL RAGAS

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## Abstract

A Raga in Indian Classical music is more than just a mere assembly of notes (swaras). It is characterized by distinctive swara patterns, the selective presence or absence of certain swaras, and the strategic application of ornaments (alankars) that elevate the melodic experience. The intricate nuances of individual swaras, including their microtonal uses, relative pauses, inter-combinations and gradual progression in the course of raga establishment, are the hallmark of Indian Classical Music, distinguishing it from other musical traditions. Building upon the understanding that individual swaras convey distinct meanings and interpretations in a raga, this study approaches to delve the depth of these nuances. Through a comprehensive analysis and critical evaluation of existing literature and researches on the art of swara application (swar-lagav), this paper aims to provide an elaborative understanding of the interplay between swaras and ragas, thereby illuminating the multifaceted nature of Hindustani Classical Music.

**Keywords:** Swar-Lagav, Notes, Microtones, Ragas, Nyas, Swar-Sangati, Hindustani Classical Music.

## INTRODUCTION

In the realm of Indian classical music, the term "Raga" has been precisely defined as "*Ranjayite iti raag*", - that which colours or delights the mind. This insightful definition underscores the multifaceted nature of Raga, which transcends mere melody to evoke profound emotional responses. Each Raga with its unique selection, sequencing, and treatment of swaras craft a distinct pattern of melody, generating different emotional appeal to the listeners. Therefore, the intricate relationship between *Swaras* (notes) and *Rasas* (emotions) gives rise to a distinct mood that dominates the Raga. In Indian Raga Music, the same swara may be treated variedly across different ragas, with subtle variations based on microtonal intonations, duration of pause, ornamentations, inter-combinations. These differences significantly impact raga interpretations, and are difficult to execute without proper training or listening skills.

### "SWAR-LAGAV" – REVEALING THE IDENTITY OF SWARAS IN RAGAS

The uniqueness of Indian ragas is such that every swara has a distinct identity within each raga, which is revealed by their accurate pronunciation or expression during performance. This is what we refer to as "*swarochharan*". Correspondingly, the term "*swar-lagav*" refers to that particular yet typical dynamism of *swarochharan* or swara-pronunciation that makes a raga instantly recognizable with only one correct utterance or stroke. Just as Asad Ali Khan, reminds us a proverb- "*taar baaje aur raag pehechane*" (The raga should be recognized with just one hit of the string). With one correct utterance of komal Risabh, one can envision Bhairav. Even though many of the ragas use the komal variant of Risabh, recognition of the appropriate shade and application of risabh that corresponds to each raga requires competency and practice (Lecture 1981). Ramrang, had elaborated an idea in on Trinity of Ragas- Marwa, Pooriya and Sohini, saying that though these three ragas might bear the same swaras but because of the differences in *swar-lagav*, differences in *vadi-samvadi* and differences in *chalan* they appear totally of different characters from one another (Lecture 2001). Therefore, swaras add meaning to the ragas only with correct expression, "*until the expression of the swara is correct the raga will not be revealed. Just singing the notes doesn't make a raga*" (Ginde, Lecture 1988). Like in speech, emphasis on words changes meaning, similarly, in ragas, emotions changes with alteration of expression and ornamentations on swaras (ibid).



## FACTORS AFFECTING TECHNIQUES OF SWAR-LAGAV IN RAGAS

It has been primarily observed that a single swara develops its character and individual identity based on the certain characteristic features or variables – Microtonality or *Shruti-bhed*, Duration of Pause or *Nyasa*, Ornamentations or *Alankar*, Note-pair, patterns and combinations or *Swar-sangati* and Aesthetic appeals or the *Bhava*. Let's discuss how these variables and their multiple implications alters the identity of the swaras in different ragas.

## APPLICATION OF MICROTONES IN RAGAS

Parikh demonstrates that “even within one raga, every approach to a note may have a different microtone and ornamentation, affecting its interpretation.” Addressing komal Risabh, he says “In my opinion every shade of komal Re has a different implication” (Moore 2014,58). In Gita Sutra Sar, Goswami, defined such particular microtonal character of swaras as ‘innumerable fine shades of pitch’, particular to ragas (Banerji 1941). Each of the twelve swaras is labelled to certain frequencies and “these labels are retained along with an addition of “Ati (extra) or Utra (lower), Chada (upper)... to address a lower shade of komal Rishav the label employed would be ‘Ati-komal Risabh’ ”(Sati, Bhide 2021). Various ragas play komal Re at a little varied pitch (Mahajan 2001). In Puriya, some gharana prefer a lower frequency of komal re, while in raga Shree, opinions vary (Raja 2016). However, shrutis are not universally recognized, with only a handful being widely acknowledged, such as the komal gandhar and komal dhaivat of Darbari Kanada, the komal risabh of Bhairav, the komal gandhar of Todi, the Sudhha nishad of Bhimpalasi and Miyan ki Malhar, and some others (Meer 2015). The complex and evocative raga Darbari Kanada is a testament to the rich tapestry of Indian classical music, which is said to use the ati-komal variety (extra-flat) of Gandhar (ibid). A similar study on swara intonations in ragas, analyzed the intonation of komal Dha in five ragas (Bhairav, Bhairavi, Jaunpuri, Darbari, Puriya Dhanasree) with the analysis of Umakant Gundecha's voice record. The experiment demonstrated evidences for flexible intonation and the variability of Dhaivat's pitch across ragas through graphical representations, emphasizing the importance of pitch contour over static pitch values for recognizing 'shrutis' (Meer, Rao 2009). In ragas that use the same scale, the artist's decision on where to place the swaras inside the raga to achieve consonance also causes some swaras to have distinct intonations. A thesis from M.S. University of Baroda identified variations in swara frequencies in ragas, concluding that, the same note of raga varies from artiste to artiste and also from same artiste time to time (Vaishnav 2007). According to Meer (2000), the minor second (re) for Bhairav is often between 85 and 103 cents, and it is always lower than 112 cents (15:16). On the other hand, Marwa is purported to employ a greater value of re. (ibid). According to Chatterjee, Re has a more dignified personality in Marwa because its shruti is higher than that of the other shrutis (Moore 2014).

## APPLICATION OF PAUSES ON SWARAS

Indian Raga music is characterized by certain hidden emotions, which are conveyed through distinct pauses on specific swaras. In addition to Vadi (the most significant swara of the raga that is used frequently and paused longer), and Samvadi, (the second most significant swara used less frequently than the vadi), we rest on a few other swaras which are called nyas swaras. Dey defines Nyasa in raga is as a medial pause on a particular swara during the course of aalap in a raga to establish and subsequently sustain the format of raga leading to the enhancement of mood and beauty of that raga. (2008,70). Ancient musicologists Bharat, Matang, and Sarangdeva described 10 and 13 Jati lakshanas, with certain of them (*graha. amsa, nyas, apanyas, samnyas binyas, alpattwa, bahuttwa*) attributed to swaras.<sup>1</sup> Present-day singing uses these *lakshanas* with

1 दशकं जाति लक्षणम् - ग्रहांशौ तारमन्त्री च न्यासोऽपन्यास एव च । अल्पत्वं च बहुत्वं च षाड्वौडुविते तथा ॥ 10 types of Jati lakshnas are there i.e. Graha, Amsa, Taar, Mandra, Nyash, Apannyash, Alaptwa, Bahutwa, Sadavtwa and Audavatwa. Natya Shastra (Chapter 28, Shloka 66)



some variations. The duration of nyasa also varies based on seriousness or liveliness of a raga. For example, in Darbari (*gambhir prakriti*), nyas on prime swara Re is prolonged compared to Adana (*chanchal prakriti*). In allied ragas like Puriya, altering profusion on swaras komal re and suddha dha can change its identity to Marwa. (Dey 2008)-

**Puriya:** G M D G M - G, M D N, N DM – G, [Pauses on G and N brings out the raga swarup/identity] (Ramrang 2012,103)

**Marwa:** Ṇ Ḍ Ṇ r, G M G r, D M G r G M D, [Pauses on r and D brings out the raga swarup] (ibid)

However, the scope of Indian Raga music is such that one cannot exactly determine with certainty the exact time duration of the pauses or how much of a millisecond the "slight" or "more" actually represents. Thus, in Indian Raga music, the pause, or nyasa, is an arbitrary element whose length is presumed and estimated by the artiste himself during the course of raga performances.

### APPLICATION OF SWARA- ORNAMENTATIONS

In Indian music every note is connected to its succeeding and preceding note while being performed. Alankaras (ex. *meend*, *kan*, *gamak*, *andolan*) are ornaments that add aesthetic value to the performance of ragas, and are fundamental to the structure and identification of ragas (Pratyush 2010).

Applying the correct *kan* swaras is crucial in showcasing a raga's nature. Ustad Faiyaz Khan demonstrated the concept of identifying a raga with a single note, like *mandra nishad*, with duly emphasizing the importance of *kan* or *sparsha* swaras (Haldankar 2010). Different artistes vary in regard to the ornamental usages on swaras; for example, Raja states that, Omkarnath Thakur approached Bihag by emphasizing re as a full swar rather than the traditional accidental jump from G to S uses a slight *kan* of re - G<sup>R</sup>S. Raja allows for artist's creative freedom as long as the melodic essence remains within the raga's recognizable boundaries and avoids confusion with other ragas (2016). In case of Darbari, review suggests, there is no one definitive way to perform the Komal Gandhar in this raga, and the individual touches imparted by each artist add to its multifaceted beauty. Two primary approaches of rendering the ga in Darbari Kanada exists. The first, characterized as 'soft undulating,' involves a gradual ascent from the note Re to Ga. The second, described as 'more jagged,' begins with a descent from the note Ma (Bor, Meer 1985). However, it is important to note that the boundaries between these two approaches are not always clear-cut. Many artists employ a hybrid technique, blending elements of both styles to create their own unique interpretations. The third approach of expressing Darbari's Komal Gandhar is by applying it with *andolan*, which is an oscillation of the same note at a slightly reduced frequency. However, Meer noted that the most common application of Gandhar in Darbari was "near-straight" Gandhar, and he illustrates with clippings from the recording of Faiyaz Khan and Bhimsen Joshi (Meer 2015). Furthermore, in Indian Raga music, the significance of touch swaras in establishing the initial perception of raga becomes extremely important. Indian music relies heavily on touch and connecting notes since touch is essential to relationships (Chakraborty Lecture 2017). It is unique to note that komal Re though being the least important swara in Puriya, yet the first swar lagav of *mandra nishad* in Puriya is incomplete without the use the touch/*kan* of Komal Re (ibid). -  $\overset{r}{\underset{\cdot}{n}} r G$

### APPLICATION OF NOTE-PATTERNS OR SWAR SANGATI

Omkarnath Thakur asserted that certain ragas rely on specific note pterns called *swar-sangati* (Ex P-R sangati in Kalyan, R-P in Malhar, r-P in Shree), without the correct expression of *swar-sangatis* the raga remains


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ग्रहांशतारमन्द्राध्यासापन्यासकौ तथा । अपि संन्यासविन्यासौ बहुत्वं चाल्पता ततः । एतान्यन्तरमार्गेण सह लक्ष्माणि जातिषु । षाड्वोडुविते क्वापीत्येवमाहुत्रयोदश ॥ 13 types of Jati lakshnas are there i.e. Graha, Amsha, Taar, Mandra, Nyash, Apannyash, Sanyash, Binyash, Alaptwa, Bahutwa, Antarmarg, Sadavtwa and Audavatwa. Sangita Ratnakara (Chapter 1, Subchapter 7, Shloka 29-30)

incomplete (RamShankar 2011). Mahajan analysed how identical note structures (swar-sangati) vary in between ragas, saying that “ragas which are allied to each other.... have identical note pairs in initial stage, but in advance stage of elaboration each of them has their own picture” (1989, 95). For example, the R-P swar sangati is identical to ragas like Kamod, Malhar, Durga, Jaladhar Kedar, or use of P-R sangati in Yaman, Sudhh Kalyan, Chayanat, Gaud-Sarang, Jaijawanti, however, despite being the same, their picture appears differently in each of these ragas because of their precise use of grace notes, other forms of ornamentations, etc. Let us analyse how the same note patterns have different implications in different ragas.

N.B:

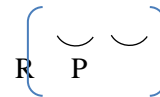
1) The note combinations/ applied ornamentations that correspond to the swar sangatis are written in the initial lines.

2) The “  ” represents glide (meend) from one note to the other.

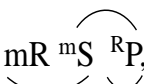
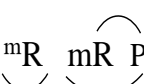
3) [ <sup>G</sup>X ] represents grace notes or kan.

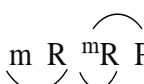
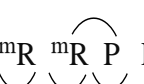
4) [ X<sub>GRG</sub> ] represents detailed notation that is implied within the pronounced swar-sangati.

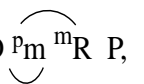
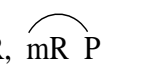
2) The swara sangati to be pronounced (ex. P-R or R-P), are written in red font under its detailed note patterns and beneath the half circles: -



**1) Different Applications of “R-P” Sangati in Ragas: (as per book reviews and audio recording analysis of different artists):**

1) **Kamod:** S  <sup>m</sup>R <sup>m</sup>S <sup>R</sup>P, or  <sup>m</sup>R <sup>m</sup>R P  
R P R P [web source 1]

2) **Suddha Malhar:** m R  <sup>m</sup>R P, m P D <sup>S</sup> D P m,  <sup>m</sup>R <sup>m</sup>R P R m, R S  
R R P R R P [Ramrang 2014, 125]

3) **Durga:** R m P D  <sup>p</sup>m <sup>m</sup>R P, Or S R m, <sup>m</sup>R,  <sup>m</sup>R P  
m R P R P [ibid, web-source 2]

4) **Jaladhar Kedar:** S R S m, m P D m,  <sup>m</sup>R <sup>m</sup>R P, D m S R S  
R P [Ramrang 2014,125]

5) **Shree (using swar sangati of komal Risabh and Pancham):**

S r G r  <sup>r</sup>P, P M d M P, d M P,  <sup>P</sup>r  
r P P-r [Patwardhan 1953, Vol 2,29]

## 2) Different Applications of “P-R” Sangati in Ragas: (as per book reviews and audio recording analysis of different artists)

1) Yaman:  $\underbrace{PMDP}_P \underbrace{^M G RGR SR}_R$  [web source 3]

2) Suddha Kalyan:  $\underbrace{P^M G}_P \underbrace{P_G RGR}_R$  Or  $R G \underbrace{PMDP}_P \underbrace{G RGR}_R$  [web source 4]

3) Gaud Sarang:  $S G R M G, \underbrace{^G P}_P \underbrace{G RGR}_R$  Or  $\underbrace{P}_P \underbrace{^G R}_R$  [web source 5]

4) Chayanat:  $\underbrace{P - ^P R}_P$  - use of extended meend (glide) from Pancham to Risabh [web source 6]

5) Jaijawanti:  $S \dot{D} N \underbrace{P \cdot ^P R}_P$  - use of meend from Mandra Pancham to Madhya Risabh [web source 7]

Systematic Implementation Of Notes In Raga Alap And Badhat With The Specified Variables:

### Different Application Of Komal Risabh As A Vadi Swara:

RAGAS	Aroha	Avaroh	Similar Aspect	Applied Pauses (Nyas)	Prominent Ornamentations on Komal Risabh	Applied Note-patterns
Shree	$S r M P N \dot{S}$	$\dot{S} N d P M g r S$	Vadi - r	S, r, P	$\underbrace{^r P - ^P r}_r$ - use of meend in r-P and P-r Sangati $\underbrace{^G r}_r$ - G used as a kan swar of r	$r- P$ and $P-r$ Sangati $\underbrace{^G r \cdot ^r P}_r, \underbrace{^P r}_r$ $r- P P-r$
Marwa	$N r G M D N \dot{S}$	$\dot{S} N D M G r S$	Vadi - r	r, D (extended pause on r and D)	Ni is used as a kan of komal re: $\underbrace{^N r}_r$ , or $\underbrace{^S D}_r \underbrace{^N r}_r$	$\underbrace{^N D N \cdot ^N r}_r$ , $\underbrace{G M G r}_r, *$ $\underbrace{^S D}_r \underbrace{^N r}_r S$



-While both Shree and Marwa have Komal Risabh as their Vadi swar, Shree's komal risabh is applied using kan of ga and sangati of Pancham ( $\text{Gr-P}$ ), whilst Marwa's komal risabh is applied with touch of mandra nishad:  $\text{Nr, } ^\text{SD} \text{Nr S}$  (Ginde Lecture1988, Mahajan 1989, \*Ramrang 2012).

### Different Application Of Komal Risabh Having Touch Of Komal Gandhar:

RAGAS	Aroha	Avaroh	Similar Aspect	Microtonal Uses	Prominent Ornamentations on Komal Risabh	Applied Note-patterns
Bhairav	$\text{N S G m}$ $\text{P d N S}$	$\text{S N d P}$ $\text{m G r S}$	Komal Gandar's touch in Rishabh's utterance.	Lower frequency of Komal re ( <i>Ati-komal</i> )	Risabh is used as a long and strong note. Heavy and slow oscillation/ andolan of re coming from komal ga ( <b>negligible prominence of komal ga</b> ): $\text{G m } ^\text{gr} \text{r S}^*$	$\text{G m P G m } ^\text{gr} \text{r S};$
Todi	$\text{S r g M d}$ $\text{N S}$	$\text{S N d P}$ $\text{M g r g r S}$	Komal Gandar's touch in Rishabh's utterance.	Higher frequency of Komal re ( <i>chadi hui risabh</i> )	No oscillation of komal re. Komal ga used as kan of komal re; use of meend/ gradual glide in ascent from r to g – ( <b>prominent komal ga</b> ) $^\text{gr} \text{r, } ^\text{gr} \text{r } ^\text{gr} \text{g}^*$	$\text{S } ^\text{gr} \text{r } ^\text{gr} \text{g},$ $^\text{gr} \text{g M } ^\text{gr} \text{r } ^\text{gr} \text{g r S}$

- Both Bhairav and Todi use Komal Ga as a kan swara while expressing Komal Risabh, however in Bhairav, Komal Gandar's touch is very negligibly determined, mostly it is used in the meend from m to r ( $\text{G m } ^\text{gr} \text{r S}$ ), whereas in Todi's risabh, Komal Gandhar is extensively employed as a grace note, whose touch is prominently heard in the utterance of risabh. (\*Ginde Lecture1988, \*Mahajan 1989,105)

### Different Application Of Oscillating Komal Gandhar:

RAGAS	Aroha	Avaroh	Similar Aspect	Microtonal Uses	Prominent Ornamentations on Komal Gandhar	Applied Note-patterns
Darbari	$\text{S R g m}$ $\text{P d n S}$	$\text{S d n P}$ $\text{m P g m R S}$	Oscillation of Komal gandhar	Lower frequency ( <i>ati-komal Gandhar</i> )	Slow andolan of gandhar. It keeps swinging between m and g.* Andolit Gandhar descends from above with madhyam's touch, followed by oscillation in ati-komal form. $\text{S R } ^\text{mg} \text{g, } ^\text{mg} \text{m R S}$	$^\text{nd} \text{S n R},$ $\text{S r } ^\text{mg} \text{g } ^\text{mg} \text{m R S}^*,$ $\text{m P } ^\text{nd} \text{n P}$
Miya ki Malhar	$\text{N S m}$ $\text{R P, m P}$ $\text{n D N S}$	$\text{S n D}$ $\text{n P, m}$ $\text{P g g m R S}$	Oscillation of Komal gandhar	Higher frequency ( <i>ati-chada komal Gandhar</i> )	Andolit gandhar with kan of madhyam: $^\text{mR} \text{ } ^\text{mR} \text{P } ^\text{mg} \text{mg m R S}$	Use of R-P Sangati $\text{S R } ^\text{mR} \text{P } ^\text{mg} \text{g m}$ $\text{R S},$ $^\text{mP} \text{ } ^\text{nd} \text{D N S}^*$

- Komal Gandhar is used in both ragas in an oscillating manner; however, in Darbari, the gandhar oscillates at a much lower frequency (*ati-komal gandhar*) closer to risabh after emerging from above (madhyam). The komal Gandhar in Miya ki Malhar is derived from madhyam, yet it stays aligned with madhyam, giving it a considerably greater frequency (*ati-chada Gandhar*) (\*Mahajan 1989,114,119).

### Different Application of Komal Nishad in The Same Raga:

RAGA	Aroha	Avaroha	Use of Komal ni in Arohi Ang	Use of Komal ni in Avarohi Ang
Bhimpalasi	S g m P n Ś	Ś n D P m g R S	<p>Taar Sadaj is used as a kan swar of komal nishad in the phrase:</p> <p><math>g m P \overset{\curvearrowright}{\underset{\cdot}{n}} \overset{\curvearrowright}{\underset{\cdot}{n}} \overset{\curvearrowright}{\underset{\cdot}{n}} \overset{\curvearrowright}{\underset{\cdot}{n}} *</math></p> <p>(Komal ni has a higher frequency in arohi ang)</p>	<p>Pancham used as a kan swar of komal nishad in the phrase:</p> <p><math>g m \overset{\curvearrowright}{\underset{\cdot}{P}} \overset{\curvearrowright}{\underset{\cdot}{n}} D P *</math></p> <p>(Komal ni has a reduced frequency in avarohi ang)</p>

-Since Komal Nishad in Arohi ang of Bhimpalasi uses Taar Sadaj as its kan swar, it has a stronger affinity and a higher frequency towards Taar Sadaj. In Avarohi ang, komal Nishad experiences a decreased frequency when it is utilized in conjunction with Pancham along with a glide/meend. This phenomenon is similar to observing the same person from multiple angles (\*Ginde Lecture 1988).

### NEED FOR FURTHER RESEARCHES:

The precision of note execution and nuances in swara treatment have been proven to be crucial factors in achieving ideal raga rendition, directly impacting the aesthetic quality of classical music performances. This analytical review of existing literature thus underscores the significance of individual swaras in ragas, emphasizing the need for further researches in the allied areas. The nuanced exploration of individual swaras in ragas, such as the Gandhar or Dhaivat of Darbari, Risabh of Marwa or Bhairav, Nishad of Miya ki Malhar, strategic employment of swar-sangati (ex. R-P/P-R etc) in ragas explored by various artists across generations, offers a rich avenue for analysis. The exploration of raga being subjective and varying across artists and artistic interpretations, provides a vast scope for further investigation. Furthermore, the subject of microtonal usage of notes in ragas presents an insightful area for scientific inquiry with the indulgence of Physics and Computation.

### CONCLUSION

The concept of “*swar-lagav*” in Indian Raga Music is such that the identity of the swaras shape the personalities of ragas. Through an analytical review of existing works in the related field, this study highlights the importance of recognizing distinct meanings and interpretation that swaras convey to a raga. Ultimately further research in such complex and core area shall serve as a catalyst for continued exploration, encouraging deeper appreciation for the intricacies of Indian Classical Music.

### AUDIO SAMPLES

#### Web-source 1:

Raju Asokan. (2015, September 12). Ustad Bade Ghulam Ali Khan Raag Kamod early 50s [Video]. YouTube. <https://www.youtube.com/watch?v=Lq51woVfcCI> [0.10 sec - 0.17sec]

Narsee Sangeet. (2021, May 30). Raag Kamod - Pt. D V Paluskar || [Video]. YouTube.  
[https://www.youtube.com/watch?v=\\_UIS8\\_809rs](https://www.youtube.com/watch?v=_UIS8_809rs) [0.1sec - 0.5sec]

#### Web-source 2:

CH 02: CEC-UGC 02: History, Culture & Philosophy. (2017b, September 11). Raag Durga - I [Video]. YouTube.  
<https://www.youtube.com/watch?v=1wG4CE7zmZE> [13.3-sec – 13.38sec]

#### Web-source 3:

Subrata Chowdhury. (2015, December 2). Ustad Bade Ghulam Ali Khan - Raga Yaman [Video]. YouTube.  
[https://www.youtube.com/watch?v=jlKm\\_KgZCqI](https://www.youtube.com/watch?v=jlKm_KgZCqI) [0.51sec – 0.53sec]

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<https://www.youtube.com/watch?v=6-bmBDV-oHs> [3.05sec – 3.08sec]

#### Web-source 4:

Deodhar's School of Indian Music. (2021, April 18). Ustad Amir Khan -Raag: Shudh Kalyan @ V.Shantaram's Resi 1957 [Video]. YouTube. <https://www.youtube.com/watch?v=UBN-GQVAsa8> [15.25sec – 15.29sec]

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<https://www.youtube.com/watch?v=71M4q2ztcFY> [4.07sec-4.10sec]

#### Web-source 5:

Ajay Ginde. (2021, September 6). Pt. K. G. Ginde : Raga Gaud Sarang (Composition of Pt. Dinkar Kaikini) [Video]. YouTube. <https://www.youtube.com/watch?v=EaUbGSm-7jU> [2.46sec – 2.50sec]

#### Web-source 6:

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[https://www.youtube.com/watch?v=AQlc\\_HFI6H0](https://www.youtube.com/watch?v=AQlc_HFI6H0) [0.44sec – 0.50sec]

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