# Total Instrumentation

109 players, 3 conductors

- 4 flutes (3 also piccolos)
- 1 alto flute
- 3 oboes
- 2 english horns
- piccolo clarinet
- 2 clarinets
- 1 bass clarinet
- 1 alto saxophone (also clarinet)
- 1 baritone saxophone
- 3 bassoons
- 8 horns
- 6 trumpets
- 5 tenor trombones (3 with bass valve)
- 1 bass trombone
- contrabass trombone
- 1 bass tuba

(Horns, bass trombone, contrabass trombone and bass tuba need one mute each. Prescribed for trumpets and tenor trombones are: 1 mute [bright] = pointed mute; mute [dark] = cup mute or wawa, according to the choice of the conductor.)

12 percussionists (see description)

- keyboard glockenspiel (or celesta), sound:
- l celesta (5 octaves), sound:



- piano (as resonant as possible, above all in the highest register)
- electric guitar (steel strings, large amplifier, foot-controlled swell)
- 2 harps
- 26 violins
- 10 violas
- 8 cellos
- 6 basses

- (also clarinet)

- 2nd lower)

- 1 flute

- 2nd lower)
- (both with bass valve)
- trombone

4 percussionists marimbaphone, 5 octaves glockenspiel flute 5 cowbells (1,4,7,10,13) (also piccolo) 4 metal-instruments: 1 tam-tam, 1 alto flute 3 cymbals (1,4,7,10) 2 wood drums (pitches 1,7/4,10) 4 drums (1,4,7,10) l oboe l english horn l snare drum 1 tambour de basque l clarinet 1 keyboard glockenspiel 1 bassoon 2 horns (or celesta) (higher, lower) harp 2 trumpets 10 violins 2 trombones 2 violas (2nd with bass 4 cellos valve) bass tuba 2 basses 4 percussionists vibraphone 14 tubular bells 2 flutes 4 cowbells (2,5,8,11) (1st also piccolo) 4 metal-instruments: 1 tam-tam, oboe 3 cymbals (2,5,8,11) 2 wood drums (pitches 2,8/5,11) piccolo clarinet 4 drums (2,5,8,11) alto saxophone snare drum l tambour de basque ratchet baritone 2 triangles (higher, lower) saxophone piano (with cover: small or bassoon large peg) 3 horns electric guitar (1st and 3rd higher, 8 violins 2 trumpets 4 violas trombone 2 cellos l bass trombone 2 basses 4 percussionists (also piccolo) xylorimba 4 cowbells (3,6,9,12) oboe 4 metal-instruments: 1 tam-tam, l english horn 3 cymbals (3,6,9,12) 2 wood drums (pitches 3,9/6,12) 4 drums (3,6,9,12) clarinet 1 bass clarinet snare drum tambour de basque bassoon 3 horns (1st and 3rd higher, 1 celesta (5 octaves) harp 2 trumpets 2 trombones 8 violins 4 violas contrabass 2 cellos 2 basses (or tuba) The scale of tempos should denote 12 steps (to be sensed as equally large) between  $\bullet = 60$  and  $\bullet = 120$ . The metronome values are rounded off:

valu	es are ro
	= 60
	= 63,5
	= 67
	= 71
	= 75,5
	= 80
	= 85

- 8\_

' =

-----

= 90 = 95 = 101 = 107 = 113,5 **e** = 120

Percussion	Instruments
1 player	<pre>1 marimbaphone,</pre>
I player	1 glockenspiel,
1 player	1 xylorimba, 4 oct
1 player	1 vibraphone 14 tubular bells
9 percussic	onists play:
13 Almo	glocken (cowbells
approximate	ely:
	Il actually produces sev ing tone should have th
freely. Otherwin the case of The following "soft"): leather Within each of <b>12 "m e t a</b> <b>smallest) sho</b> <b>ing range of</b> Each orchestro and 3 cymbals cymbals, me small cymbals kinds of sticks two categorie "soft": felt light), leather wooden sticks, Within each sticks should b ing to the co tions. <b>12 d r u m s</b> ing pitches: "hard" and " etc.), wire br <b>3 side dr</b>	ums with snares (sho bright sound). Diser
6 woode	n drums: African sl
phical) museur sequent perfor violin maker ments of the the thin portio	drums were hired from a m for the first performan rmances new ones were in accordance with the p score. The drums should on of the wood alongside to e different pitches). In fac

3 tambours de basque (with bells or little tin cymbals in the rim), 2 triangles (1 high, 1 low), 1 ratchet.

# or 4 octaves with xylophone for the highest octave

5 octaves



sound:

sound:



taves









ppers) on leather thongs from the stands, so that they swing st. Hit with a slanting motion on the outermost edge, or, on the curved part (pick out the best spot for resonance) ed into two categories, "hart" and "weich" ("hard" and pers, vibraphone mallets, mallets with wooden balls, felt etc. be varied according to the conductor's indications.

3 tam-tams and 9 cymbals (from the largest to the scale from 1—12, from low to high (in the dominat-, and divided in fours among the three orchestras.



bas and bongos (in the high register) with the follow-



slotted drums, each with two pitches.

ın (ethnogrance. For submade by a pitch requirebe struck on the slots (the ist groups of notes other parts of the drums may be struck to provide variation in pitch and timbre. Beaters in the categories "hart" (wood, hard rubber, leather) and "weich" (felt, soft rubber, wool) should be varied as indicated above for metal instruments.



the two lowest (a# , b) may be hung, as tubes or plates, together with the glockenspiel.

Notation:

Notation:

01	011	0
10. 7. 4. 1.	11. 8. 5. 2.	12
	-	

Notation:

01	OII	0
10.	11.	12
7.	8.	9
4.	5.	6
1.	2.	3

The snare drum is always written on a single line



Sticks and mallets:

In the score "hart" and "weich" ("hard" and "soft") are used to denote the mallets for all percussion instruments. As mallets of the same name can give different results in sound (due to the way the material has been prepared), a more exact prescription was dispensed with. Within the categories "hard" and "soft" the most varied sorts of mallets should be used, according to the instructions of the conductor.





4 cowbells, suspended. This stand must be high enough, so that the lower edges of the bells can be hit while the player is standing.



The tam-tams are written in the first space (1, 2, 3)



In each orchestra 1 suspended tam-tam, 3 cymbals on stands.





2 wooden drums on their stand.

Ergänzung GRUPPEN\_Ergänzung GRUPPEN 06.09.09 10:44 Seite 3

## **GRUPPEN** (GROUPS) for 3 orchestras performance practice supplement

(October 5th 1996)

For all **tutti rehearsals**, each of the three conductors needs a microphone and a monitor loudspeaker to be able to communicate with the other two conductors, but his own microphone should not be circuited to his own monitor (danger of feed-back). This circuiting must be ready and tested **before** the first tutti rehearsal.

### Sound projectionist for the tutti rehearsals

During the past several years, I have occasionally participated in the **tutti rehearsals** of GRUPPEN *for 3 orchestras* from the middle of the hall during the final three days preceding a performance. In the course of these rehearsals, the conductors realised how important it was – and they have suggested for the future – to have a *sound director* in the middle of the hall who balances the dynamics, communicates with the conductors about other corrections, and, in general, leads the rehearsals, speaking over a microphone, with monitor loudspeakers on each podium.

It is a fact, that the three conductors cannot judge, from their respective positions, how the dynamic levels sound in the hall, and what the actual effect is of "hard" and "soft" beaters (percussion) within the ensemble. The *sound director* must be completely familiar with the work and the score, be able to communicate concisely and lead the rehearsals clearly, and be chosen by the three conductors. He (she) should also control the microphone amplification of the guitar and piano (in orchestra II) using a small mixer at the middle of the hall, and attend (ahead of time) to the set-up of the 3 microphones (1 for guitar, 2 for piano treble-bass) and the installation of 2 x 2 loudspeakers, which are hung or set up (circa 4 m high) at the left and right next to orchestra II.

3



The *sound director* should be assisted by two musicians who constantly judge the dynamic level from **all** seats in the hall, and regularly inform him how the dynamics sound from all seats.

One of the three conductors must visit the performance venue when a performance of GRUPPEN has been definitively planned. He (she) must also have a detailed discussion with the percussionists and check **all percussion instruments**, celesta, glockenspiel etc. Experience has repeatedly shown that the pitches of the percussion instruments were wrong. In addition, the orchestra parts must be checked by the conductors ahead of time, because every now and then, uncorrected rental material is delivered.

### Supplement to the GRUPPEN score

The dynamic degrees ppp pp pmf f fff ffff must be rehearsed in such a way that ppp can be clearly heard even in the last row of seats. Generally, ppp pp pp p are played too softly; p must be quite intense.

f, sfz, ff, sffz, fff in the percussion must be balanced with the other instruments, especially when hard beaters are being used. sffz simultaneously indicated for percussion and for other instruments must be **heard** as equally loud. Depending on beaters and context, this can lead to changing the dynamics of the percussion.