2 GENERALLY ACCEPTED PIANO TECHNICAL STRATEGIES

2.1 Introduction

To outline the different levers with their basic movements and positions in piano playing, the researcher studied the strategies of leading authors in the field of piano technique. Although many authors are quoted on the different aspects of technique throughout this study, the researcher, through references by the majority of authors, identified six well-known authors in this field as primary references. The theories of J Gát (1958), J W Bastien (1977), J Last (1980), G Sandor (1981), K S Taylor (1983) and L Conus (1984) were studied closely for the specific purposes of this study. They were identified because of their different fields of speciality. Sandor and Conus were both concert pianists and although Conus died shortly after his career started, the strategies in his book on piano technique were underwritten by world famous pianists like Horowitz and Arrau. Bastien and Last performed professionally early in their lives and specialized in beginner piano tuition later on. Taylor and Gát were both piano teachers for more than thirty years of their lives.

- The authors mainly agree on the aspects relevant to this study, but there are different ways of explaining and naming these aspects. Last, Gát, and Sandor talk about arm weight, while Bastien, Taylor and Conus talk about the freedom of the wrist moving down. Gát, Last, Bastien, Sandor and Taylor talk about a hand staccato, while Conus talks about the wrist staccato. The emphasis is placed on the moving levers when the terms 'arm weight' and 'hand staccato' are used in the previous examples, while the emphasis is placed on the initiator of the movement when expressions like 'freedom of the wrist moving down' and 'wrist staccato' are used. The researcher's responsibility is to interpret the meaning of these expressions and to decide on an appropriate term to use throughout the course of the study.

- For the purpose of this study the different levers will be named in order from big to small.

  ...piano playing is not a matter of muscular strength and endurance. We have a rather complex set of muscles at our command. Some of these muscles are small and weak, made for precision work, others are strong and powerful. If we can activate these larger muscles properly, we do not need to strengthen the weaker ones. We must learn the kind of coordination that enables us to put to use the necessary equipment and to play without any trace of fatigue... (Sandor 1981:16).

- The reaction of the identified authors on the use and movement of these levers will be given. Discrepancies in the terminology, used by the different authors, will be followed by an appropriate term (in italics and in brackets), used by the researcher, throughout the course of this study.
- Reactions of other authors or works studied by the researcher will be given.
- To summarize, the researcher will draw a conclusion of the reactions on each lever.

2.2 The whole body - upper body *(torso)* and lower body

- Sitting position

  The whole body is involved in the sitting position and the majority of authors mention this as the starting point.

2.2.1 J Gát

Gát (1958:45) states that it is a particularly difficult task to teach children a proper sitting position and that the feet can usually only find support with the aid of a footstool. The chair should be hard, level and adjustable.

The sitting height (corresponding to the correct posture) is determined in the first place by the proportion of the trunk (*torso*) to the upper arm. A pianist with a long trunk *(torso)* and shorter upper arms has to sit on a very low stool, while a pianist with a longer upper arm is compelled to use a high stool.

A generally valid distance of the stool from the piano cannot be even approximately determined. An important part is played here not only by the length of the forearm, but also by the length of the upper arm and by the relation of both of these to each other. Gát states that at best the following rule can be applied:

> Seat yourself at such a distance from the piano as will enable the trunk (*torso*) to move freely in every direction and use the forearm and the upper arm with perfect freedom (Gát 1958:46).

2.2.2 J W Bastien

Bastien's first concern regarding the young beginner's sitting position is the 'correct' height. He suggests that the pupil should be in proper alignment with the keys in order for his hands and forearms to be in a straight line over the keys.

> An adjustable piano chair, cushions, or even several telephone books are recommended to raise the child to the correct level (Bastien 1977:142).

He (1977:143) also suggests support for the feet. To balance the child, he should be given support, and assurance that he will not fall off the chair (bench). A footstool is recommended.

Bastien (1977:143) recommends that the correct distance of the upper body (*torso*) from the piano should be taught to the child. The only guideline that he gives is to hold the forearms in a straight line above the keys.

2.2.3 J Last

The first thing to adopt is a good sitting position. Last (1980:14) explains a good sitting position as one in which the height may vary. She says the most generally accepted and practical position is when the pupil is seated at the piano at the correct height, which is when the arm, from elbow to wrist, slopes neither up nor down. If the child's feet do not reach the floor, use a footstool (Last 1980:8).

According to Last (1980:8) crossing the arms, with the left hand at a higher octave and the right hand at a lower octave can test the distance from the piano. If the hand cannot be placed over a complete five finger group of notes without leaning backward, the pupil is too close.

Last (1980:17) suggests that pianists should not sit on the whole surface of the chair.

2.2.4 G Sandor

Sandor (1981:31) promotes a sitting position with stability and mobility at the same time.

By stability is meant a sitting position, which enables the pianist to sit comfortably and by mobility is meant a sitting position, which enables the pianist to move freely and effortlessly. In order to obtain this position Sandor suggests that most of the body weight rests on the bench, but the feet support some of the weight, especially when the body is in motion. Whenever the hands or arms are in motion, the balance of the body changes, even though the change is very slight. The body assists the arm and hands and brings them to the position where they can act to their best advantage.

2.2.5 K S Taylor

According to Taylor (1983:7) for the most efficient use of the fingers, one should sit at such a height that the underside of the forearm is parallel to the floor. The stool should be adjusted accordingly.

The distance from the keyboard will be such that, when the torso is tilted slightly forward, the upper arms will fall freely from the shoulder with the elbows a little forward from the body. The tips of the longer fingers will just reach to the base of the black keys.

2.2.6 L Conus

Conus supports a comfortable sitting position. The arms should be dropped freely at the sides of the body, shoulders completely relaxed.

> Lift your wrists to the keyboard, keeping shoulders and arms relaxed... The arms should hang freely, with the elbows completely relaxed...hand and forearm level (Conus 1984:6).

2.2.7 Other works studied by the researcher

Matthay specifies that the chair is at the correct distance from the piano when there is an approximate 80-85 degree angle between the lower and upper body and an approximate 92-95 degree angle between the forearm and the upper arm (Matthay 1932:106).

Browning (1981:24) states that a comfortable seating position must be found which will vary with each individual pianist. Torsos are not the same length and thickness. Arm and leg lengths will determine alterations in seating.

2.2.8 Conclusion

The following summary of the opinions of the identified authors can be used as guidelines for all pianists at all times:

- the position in front of the piano will vary with each individual pianist. Torsos are not the same length and thickness. Arm and leg lengths will determine alterations in seating
- the piano chair should be hard, level and adjustable
- most of the body weight rests on the chair, and the rest of the body weight is supported either by the feet on the floor, or the feet on a footstool
- the pupil should not sit on the whole surface of the chair
- the chair is at the correct height when the underside of the forearm is parallel to the floor and level with the keyboard

- the chair is at the correct distance from the piano when there is an approximate 80-85 degree angle between the lower and upper body and an approximate 92-95 degree angle between the forearm and the upper arm.

2.3 The lower body

2.3.1 J Gát

Gát (1958:42) stresses that if the main weight of the body rests on the feet, the whole body is compelled to assume a strained position, but when properly seated, we lean on our feet while the weight of the body rests mainly on the chair.

2.3.2 J W Bastien

According to Bastien (1977:143) a problem arises when a young pupil is raised to the correct height in the sitting position. The pupil's feet are now swinging freely back and forth in the air, unsupported. He already stated (see 2.2.2) that a footstool should be used if the feet cannot reach the floor. It must, however, be realized that the reason for using a footstool is to enable the feet, as part of the lower body, to support the torso.

2.3.3 J Last

Last (1980:8) recommends the use of a footstool if the child's feet do not reach the floor. Those who can reach the floor should sit slightly forward on the stool, so that a little of the weight of the legs rests upon the feet. Last also says that the legs may neither be sprawled at an awkward angle nor crossed. According to her (1980:18) the most natural position is towards the pedals, the right foot a little forward from the left.

2.3.4 G Sandor

Sandor (1981:31) explains the use of the lower body very clearly by saying that most of the body weight rests on the bench. The feet, however, support some of the body weight, especially when the body is in motion. Whenever the hands or arms are in motion, the balance of the body changes, even though the change is very slight.

Sandor (1981:32) stresses the use of the feet as support when there is movement to the extremes of the piano. The feet can help to balance these motions of the body either by moving one foot in the opposite direction or by turning the other heel in the direction the body is leaning, thereby supporting it more effectively.

2.3.5 K S Taylor

Taylor has no comment on the lower body.

2.3.6 L Conus

Conus has no comment on the lower body.

2.3.7 Other works studied by the researcher

Whiteside (1969:31,32) states that the torso rests upon a chair seat. The two iscial bones of the pelvis press against the chair seat. The torso can be supported or boosted by contracting the muscles around these bones. This can involve a transfer of resistance to the feet, away from the iscial bones and the chair seat.

2.3.8 Conclusion

The following summary of the opinions of the identified authors, can be used as guidelines for the use of the lower body as support during piano playing:

- the body weight rests mainly on the chair and the feet support part of the body weight either on the floor or a footstool
- the feet are never next to each other in the middle under the chair. They are neither sprawled at an awkward angle, nor crossed. They should be in an approximate line with the knees and/or hips, in a position to support the body. This support can take place either with the heel or toe, when moving or swaying to the sides.

2.4 The torso (upper body)

Although the participation of the torso is not as visible as that of the smaller levers (arms, hands and fingers), it is just as important.

2.4.1 J Gát

According to Gát (1958:42) adaptability of the trunk (*torso*) is required to assure perfect freedom of the motions of the arms. Mobility of the trunk (*torso*) is indispensable in order to permit the use of bent or stretched arm positions in different forms of playing. In addition, the trunk (*torso*) must follow the level of the octaves by means of lateral motions, whenever both arms move in the same direction.

2.4.2 J W Bastien

An interesting comment Bastien (1977:143) makes about the torso is that it must be 'straight like a tree'. He calls posture one of the prime concerns for students of all ages and refers to Gát's theory on this issue.

2.4.3 J Last

A proper posture is promoted by Last, but no mention is made of the movement of the torso.

2.4.4 G Sandor

Sandor (1981:30) calls the participation of the upper body (*torso*) and its powerful muscles purposeful and not inhibitive. The constructive role of the upper body (*torso*) muscles is to accommodate the arms while helping to keep the upper body (*torso*) in a mobile but secure condition.

The upper body (*torso*) assists the arm and hands and brings them to the position where they can act to their best advantage. The upper body (*torso)* can move sideways, forward, backward and rotate.

2.4.5 K S Taylor

Taylor (1983:12) only comments on an upright slightly forward posture from which the arms will fall freely.

2.4.6 L Conus

Conus (1984:6) states that a comfortable position at the keyboard, where the arms are dropped freely at the sides, with the shoulders completely relaxed, is preferable.

2.4.7 Other works studied by the researcher

Whiteside (1969:31) states that the torso supports the arms by mobilizing them.

Matthay specifies that the chair is at the correct distance from the piano when there is an approximate 80-85 degree angle between the lower and upper body and an approximate 92-95 degree angle between the forearm and the upper arm (Matthay 1932:106).

2.4.8 Conclusion

The following summary of the opinions of the identified authors on the use of the upper body (*torso*) during piano playing, can be used as guidelines:

- the torso should be straight and bent slightly forward to form an approximate 80-85 degree angle with the lower body
- the torso moves sideways, backwards, forwards and rotates to bring the arms and hands into the best position to play comfortably
- the arms should hang relaxed from the shoulders next to the body.

2.5 The upper arm

2.5.1 J Gát

According to Gát (1958:41) the whole body functions as an elastic support in piano playing, but the tasks of the different parts of the body are not of equal importance. The arm has the largest role in absorbing the rebound of the key and dynamic contours are also formed with the aid of the action of the arm.

Gát (1958:92) deals with the movement of the whole arm or upper arm under the heading 'active swing stroke of the upper arm' (*free fall*). A common characteristic of every type of upper arm swing stroke (*free fall*) is the utilization of the arm's mass. He explains that the whole arm participates in the swing stroke (*free fall*), that the hand cannot remain passive and that the finger ends must always be taut. Sometimes small swing strokes (*free falls*) are applied so that the movement is hardly visible, but in order to produce a fortissimo effect a bigger movement of the whole arm is required.

2.5.2 J W Bastien

Bastien (1977:165) deals with the arm under the heading 'Arm drops, large muscle motion' (*free fall*).

Bastien recommends that the pupil 1) supports the third finger with the thumb, raises the forearm in the air, and 2) drops the finger onto the key, holding it for a short time before lifting off again. In this way, according to Bastien (1977:165), key names can be learnt at the same time during the first few lessons.

Bastien (1977:165) suggests that support of a finger while dropping the arm weight will give the student a feeling of security at impact and it will give him the correct concept for holding his fingers in a curved position later when the support is not used. In the two following photographs, it is clear that the finger making contact with the key is neither straight, nor caved in at the first joint, but in a firm playing position.

Photo no 1 (Bastien 1977:166)

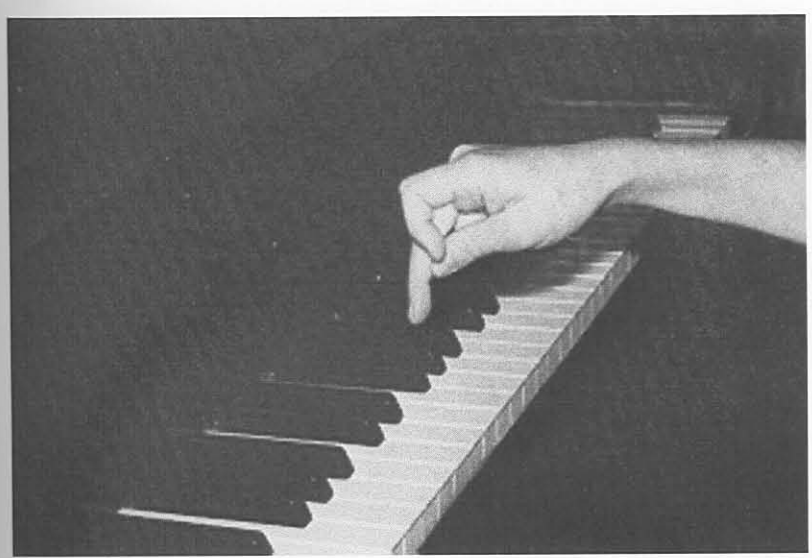
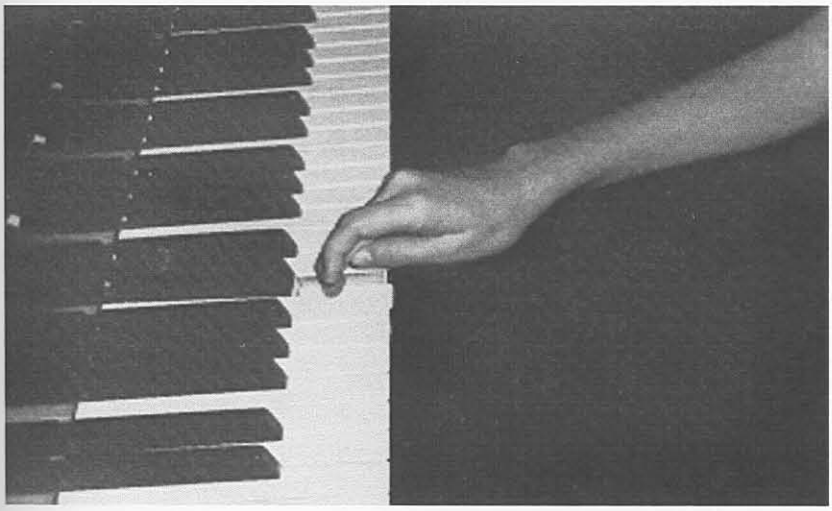


Photo no 2 (Bastien 1977:166)



Bastien also suggests that chords may be played in the same manner:

> ...prepare the chord in the air and drop on to the keys keeping the fingers well curved. Fifths, sixths (octaves later) may also be played in this manner (Bastien 1977:165).

Although the whole arm is involved, Bastien (1977:169) refers to this as a 'down-up wrist motion' and connects it to playing slurs or phrases. He places the emphasis on the wrist, as this is the initiator of the movement and recommends that the movement should be demonstrated to the pupil by playing a two-note slur. Show the pupil what it looks like to drop on to the key with a slight lower wrist motion, and release the key with a higher wrist motion. Several terms may be used to describe this process: 1) down-up wrist, 2) drop-release, or 3) drop-roll (rolling inwards towards the piano and lifting at the same time). In the following two photographs these movements are illustrated:

Photo no 3 (Bastien 1977:169) (*Free fall)*

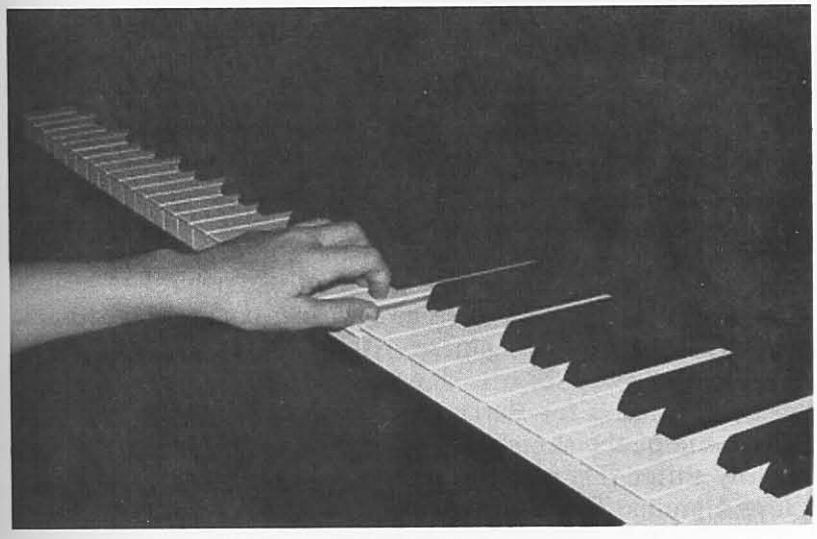


Photo no 4 (Bastien 1977:169) (*Float off)*

Bastien (1977:170) suggests that the end of a phrase should be compared to a singer taking a breath at the last note of a phrase. At the piano the breath is taken when the hand is lifted and the line is broken. He says the first note of a slur should be slightly louder and the last note should be slightly softer. The student may be told to 'float off' on the last note of a slurred group.

2.5.3 J Last

Last explains 'arm freedom' as the horizontal movement of the arm over the keyboard. The arm is there to steer the hand to the required position to enable the fingers to play their part without any sense of strain on them.

> Movement up and down the keyboard is controlled by the arm, which carries the hand to its destination (Last 1980:21).

The heading Last uses (1980:26) in connection with the arm, is 'arm-weight and chords'. She gives an exercise on a progression of sixths or a first inversion chord on E, E, F, F, G, G, etc. She confirms the best results are obtained when played very slowly with a relaxed forearm and firm fingers. She warns that this must not be confused with a 'collapse' of the wrist. This movement needs to be carefully controlled and Last uses the phrase 'sinking into a chair' (*free fall*).

According to Last (1980:27), when producing a singing melody at a moderate speed, the pianist uses an 'arm drop' (*free fall*) from one to the next note, with a slight outward swing of the elbow, bringing the arm into a position to play the next key. During 'cantabile' playing when more weight is added by the forearm, the fingers remain firm, but the flexibility of the wrist controls the situation. Last warns against an exaggeration of this movement, when the arm *jerks* outward almost before the note has sounded.

Last (1980:28) also stresses that arm weight is essential during chord sequences.

2.5.4 G Sandor

Sandor (1981:20) explains that the muscles in the shoulders and back are used to raise the upper arm and those muscles in the chest, back and upper body (*torso*) are used to direct the upper arm downward. As these muscles are the strongest in the body, fatigue can easily be avoided by using them.

The upper arm can move vertically, horizontally, and circularly as well as rotate with the help of the back, shoulders and chest.

Sandor presents a set of technical or motion patterns that are fundamental to piano playing. They are comprehensive in the sense that these patterns and combinations serve as technical solutions to any and all pianistic writing.

> It may seem pretentious to claim that a few technical formulas will answer any pianistic problems, but, in the final analysis, it is possible to reduce and condense any and all movements of the human body into a very limited number of motion patterns (Sandor 1981:35).

The first pattern Sandor (1981:42) presents is 'free fall'. This pattern involves the whole arm and is described in three stages: 1) the lift, 2) the fall and 3) the landing.

1) When the arm is lifted it is extremely important that the entire arm and hand is immobile before the drop (*free fall*) starts so as not to interfere with the force of gravity either by increasing the acceleration or by decreasing it.

2) In the second stage, the arm, hand, and fingers fall at the same time. While active muscles do the lift (*float off*), the fall is completely passive, and there should be no interference with the acceleration caused by the force of gravity.

3) During this stage the energy of the force of gravity is transferred into the keys and a slight rebound of the hand and fingers, and notably, of the wrist takes place. Sandor stresses that the wrist must be in a relatively low position at landing in order to cushion the fall naturally.

2.5.5 K S Taylor

If a warm, rich tone is needed for a chord passage or melody, Taylor (1983:13) states that finger touch alone cannot provide it and that the support of a heavier lever is needed to produce such a rich, warm result in sound. The act of touch when using the arm actively behind the finger is a complex one involving a combination of arm, wrist and fingers.

According to Taylor (1983:13) the whole arm will be involved to a greater or lesser degree. For a tone of moderate intensity the leverage of the forearm and the supple rise and fall of the wrist will be the most prominent and visible features. For heavier tone there will be a more appreciable lifting of the upper arm and as the arm lifts so will the wrist rise with complete freedom and suppleness. The fall of the arm transfers its energy and weight to the firmly shaped fingers through the medium of the wrist, which is now pulled downward by the arm (*free fall*). As the wrist is the bridge or link between the arm and the hand, the wrist itself must be firm at the moment of tone production to overcome key-resistance, otherwise control of tone will be lacking.

> There will be a complete freedom of wrist and forearm in the uplift before tone production...(Taylor 1983:14) (*float off*).

Depending on the intensity of sound that is needed, an energy-assisted fall of the arm can produce an even bigger sound than *ff*. Taylor calls this an arm 'thrust'.

2.5.6 L Conus

According to Conus (1984:6), in a relaxed state, the arms should hang freely at the sides; shoulders and the elbows should be completely relaxed. The elbow never moves independently, it merely follows the hand and the wrist. Conus only refers to the arms, during the movements of the hand, wrist and forearm, as supportive levers. A good example of this is the description of the up-down movement of the wrist. Conus stresses the proper use of the wrist as essential for the development of a fluent technique. The basic wrist movements are described in conjunction with the movements of the arm.

> The down wrist motion uses the weight of the arm into the keys to produce a full, secure tone (*free fall*). In practising the basic up and down movements in wrist exercises, exaggerate the size of the movement to master the movement and help feel the arm weight. Gradually the movement is refined, until it is barely noticeable (Conus 1984:7).

The simplest down-up wrist movement he describes is the two-note slur. The movement of the wrist from side to side is needed in order to bring the fingers into better alignment with the keys and the arm weight into better use. The

wrist shifts, bringing the hand and forearm with it. The upper arm hangs freely and the elbow is relaxed. The weight is 'distributed' where it is needed.

Conus suggests the practice of wrist and other exercises and passages from the literature with the forearm lower than the wrist and hand. This makes it much easier to feel the arm weight into the keys.

2.5.7 Other works studied by the researcher

Coviello (1934:18), Whiteside (1955:37) and Lhevinne (1972:21) name the movement of the whole arm (*free fall)* as one of the most important movements in piano playing.

Lhevinne (1972:21) associates the whole arm movement with a low wrist, which at some stages can move below the keyboard. During this movement the weight of the arm is released onto the fingers in order to produce a round, warm and rich sound.

Although Lhevinne does not mention the arm in the next quotation, its movement is clearly implied and he explains the movement at the end of a phrase very precisely:

> The wrist must be gradually raised until the finger leaves the key, as an airplane leaves the ground; and of course, the key itself ascends gradually and the damper touches the wire without the 'bumping off' sound (Lhevinne 1972:23).

Whiteside (1955:15) explains the movement at the end of a phrase as the 'follow through' movement which involves the whole arm.

2.5.8 Conclusion

The following summary of the opinions of the identified authors on the use of the arm and its different movements in piano playing, can be used as guidelines:

- the arm moves vertically, horizontally, circularly and rotates
- the proper use of the wrist is dependent on the proper use of the arm

- the weight of the arm is used to produce a warm, rich sound and the movement required to produce this sound is one of the fundamental movements in piano playing. It requires a combination of arm, wrist and finger movements
- the researcher decided on the term **'free fall'** used by Sandor (1981:42) and summarizes the guidelines for the execution of this movement: This pattern involves the whole arm and is described in three stages: 1) the lift, 2) the fall and 3) the landing.

  1) When the arm is lifted it is extremely important that the entire arm and hand is immobile before the drop starts so as not to interfere with the force of gravity either by increasing the acceleration or by decreasing it.

  2) In the second stage, the arm, hand, and fingers fall at the same time. While active muscles do the lift, the fall is completely passive, and there should be no interference with the acceleration caused by the force of gravity.

  3) During this stage the energy of the force of gravity is transferred into the keys and a slight rebound of the hand and fingers, and, notably, of the wrist takes place.

  Sandor (1981:42) stresses that the wrist must be in a relatively low position at landing in order to cushion the fall naturally. The fingers must be firmly curved to be able to absorb the energy transferred to them by the fall of the weight of the arm. During the free fall of the whole arm on a sigh motive or slur, the tips of the fingers the arm is 'falling' on, can simultaneously be strengthened
- for the next movement of the whole arm the researcher decided on a term used by Bastien (1977:169). This movement is actually the preparation for the free fall movement (the lift) and for the purpose of this study is called **'float off'.**

  The 'float off' movement starts when the wrist is at its lowest position, as at the end of the 'free fall' movement. When the arm is lifted (*float off*), which is done by active muscles, it is extremely important that the entire arm and hand is immobile before the 'free fall' starts. The 'float off' movement is completed when the wrist is at its highest position as at the beginning of the 'free fall' movement. The hand now hangs freely and relaxed from the arm
- the 'free fall' and 'float off' movements are used in conjunction with one another.

2.6 The forearm

2.6.1 J Gát

Gát (1958:124) deals with the forearm movement under the heading 'the plain forearm tremolo' (*rotation*). According to Gát, the forearm carries out rotation, and the first prerequisite for a successful execution of the movement is the full transmission by the hand of even the slightest movement of the forearm. He says that the plain forearm tremolo (*rotation*) requires a bent arm-position and that the upper arm does not move, nor does the direction of the axis of rotation change. Gát (1958:125) states that these tremolo (*rotation*) movements should be taught to a pupil in its simplest form before moving on to the more complicated forms of the rotation movement. It should not be taught in conjunction with other movements before a certain amount of control is achieved over the execution of the movement on its own.

2.6.2 J W Bastien

Bastien (1977:245) describes the rotation movement as similar to that of turning a doorknob. He stresses the fact that only the forearm takes part in this movement and that the upper arm should not 'wave about'.

According to Bastien (1977:246) the rotary movement is used whenever notes in a series move back and forth: Alberti bass or broken octaves etc.

2.6.3 J Last

According to Last (1980:50) the turning movement that involves the forearm is called 'rotary freedom'. Rotary freedom is dealt with under its own heading by Last. She explains the movement as the rotation of the arm outward causing the hand to tilt towards the little finger and then swing back again.

2.6.4 G Sandor

According to Sandor (1981:80) the forearm can be moved vertically with the help of the upper arm muscles. It can also rotate on its own axis. During the axial rotation of the forearm the upper arm's role is passive; the upper arm merely places the forearm in the position where it can actively execute the rotary motion, and where it transmits its effect to the fingers.

The next technical pattern presented by Sandor (1981:79) mainly involves the movement of the forearm and is called rotation. Rotation is described from the arm's relaxed position next to the body. The next stage is when the forearm is lifted in this central position, upper arm slightly forward, with the thumb pointing upwards. This is roughly the position of the arm when playing the harp. When the hand is turned horizontally towards the thumb's side, a rotation movement has taken place and the wrist doesn't participate in the motion at all. It doesn't move up or down or else it would obstruct the rotary motion (Sandor 1981:81). According to Sandor (1981:85) the essence of rotary motion lies in a passive upper arm, an active forearm, an inactive wrist, and slightly active fingers.

2.6.5 K S Taylor

Taylor stresses rotary movement as an integral part of piano playing. With the arm swinging loosely at the side, lift the hand on to a table and note that it will fall on the outer side of the hand. A movement to the thumb's side is necessary to bring all the fingers in contact with the surface. This is called a rotary movement. It should be noted that forearm rotation is not an elbow movement but strictly a movement of the forearm.

> Of the conscious and visible application of the rotary principle, such passages as tremolos will be assisted by it; almost any kind of passages where notes move in alternate directions (lower-higher) may receive energy assistance from rotation... (Taylor 1983:21).

2.6.6 L Conus

Conus (1984:8) recommends the following movement to get the feel of the rotation movement: extend the arms straight out to the front (fingers extended) and rotate the arm (forearm, wrist and hand) back and forth as one unit. Think of turning on an axis, which can be thought of as a line running directly through the centre of your arm, wrist and third finger. In playing, the fingers stay very close to the keys. The movement seems to come from within - there is actually very little motion. The elbow stays relaxed.

Apart from the rotation movement Conus (1984:8) only discusses the movement of the forearm in support of the wrist and hand movements. The movement of the wrist from side to side is needed in order to bring the fingers into better alignment with the keys and the arm weight into better use. The wrist shifts, bringing the hand and forearm with it.

2.6.7 Other works studied by the researcher

In conjunction with the upper arm the forearm also moves laterally over the keys to bring the arm into the required position for playing (Booth 1934:33).

The primary movement made by the forearm as a unit is the rotation movement and Booth describes the movement as follows:

> The movement preliminary to making the sound is chiefly made by a twist of the forearm away from the pivot (Booth 1934:37).

Matthay (1932:22E) emphasises the importance of the rotation movement in piano playing. He explains the direction of the rotation movement from the finger last used, towards the finger next used and stresses that no playing is possible without the intervention of forearm rotation. According to Ortmann (1962:36) rotation is used in Alberti-bass and broken chord patterns.

2.6.8 Conclusion

The following summary of the opinions of the identified authors on the use of the forearm and its different movements in piano playing, can be used as guidelines:

- the rotation movement is the only movement identified by the researcher during the literature study which involves mainly the forearm, passive upper arm, passive wrist and slightly active fingers
- to obtain the correct position at the piano: let the arm hang relaxed next to the body, lift the forearm in this position onto a table high enough to be in line with the side of the forearm. The hand should now be in a position to play harp or accordion. Roll the hand to the thumb's side with the palm facing the floor or tabletop. This rolling or turning movement is called rotation. The elbow stays relaxed
- rotation is executed either 1) to the thumb side, or 2) to the fifth finger's side, or 3) to both sides of the hand. A pivot or turning point is always present. The pivot will be on the fifth finger's side if the rotation is executed to the thumb's side and vice versa. If rotation is executed to both sides the turning point is in the middle of the palm. A beginner pupil cannot learn all these rotation movements at the same time. The opportunity to learn these movements at different stages, before executing them simultaneously or in conjunction with other movements, should be given to the beginner pupil. Although Gát (1958:125) gives very difficult exercises on which to practise this movement, he agrees that the rotation movement is more easily learnt by leaving the complicated tremolo (rotation movement to both sides) till later. Begin with the plain tremolo (rotation movement to one side), in which rotation is to be employed without the introduction of other movements
- many simple tasks like eating with a knife and fork requires the rotation movement of the forearm. The rotation of the movement when eating is usually performed to the thumb's side and would be the easiest and logical starting point for the beginner.

2.7 The hand as a unit

The expression 'hand as a unit' is used throughout this study when the hand - from the wrist to the finger points - moves as one unit.

2.7.1 J Gát

Gát makes no mention of the use of the hand as a unit, but mainly refers to the hand as an extension of the wrist as the initiator of the movement, or the forearm as the initiator of the movement.

2.7.2 J W Bastien

The hand as a unit is used in staccato playing, and Bastien (1977:68) explains the hand as a unit under the heading 'staccato touch'.

Bastien says that the beginner can be introduced to staccato touch simply by separating the tones so that they sound short. He again recommends that the movement should be demonstrated to the pupil. For young children the technical means of producing staccato will be slightly different than for older students. Young children feel more secure if they prepare near the key and push up, rather than dropping from a higher point and rebounding. He supports J Last's description of the movement:

> Many teachers liken a staccato action to that of a bouncing ball, but one must realize that the ball bounces *up*, not down, though here we are nearer to the mark, because the upward bounce is the *result* of the downward movement. To produce this on the piano, however, the child will imitate the upward bounce *consciously* (Last 1954:29).

2.7.3 J Last

The only movement that Last (1980:29) describes that involves the hand as a unit, is a movement she calls 'staccato touch'.

A problem with staccato playing, according to Last (1980:29), is that pupils are taught to achieve this shortness of sound by loosening the wrist to a condition of flabbiness and flinging the arm back after each note had been struck, then bouncing back to the key surface. This means that each time the key is struck the effort starts at the key surface, and though this is possible at a slow speed, at a faster speed it is quite impossible. Last then describes the staccato movement as similar to knocking on a door:

> When we knock on a door, we start a little away or we would not be able to make any sound. Having knocked, the hand with its flexible wrist moves back to the place where the knocking action started. So it is with staccato. Let the beginning pianist play its first staccato notes by using the middle finger and tapping out a rhythm on one note...the movement starts at the wrist...the wrist being flexible but never flabby (Last 1980:30).

Last (1980:30) calls staccato a 'one piece movement' involving an activity of the forearm, and a flexible (but not flabby) wrist. According to her, staccato has also been called 'hand touch'. This is because both hand and finger act as one unit; the fingers have no independent down and up action.

Last (1980:23) states that the wrist plays a large part in tone control. It needs to be free and flexible to the immediate requirements of the music. It should never be 'flabby', neither should it be rigid.

2.7.4 G Sandor

The forearm muscles (1981:25) move the hand. Sandor (1981:22) stresses that to achieve the particular position that is optimal for each finger, the arm (including the wrist and hand) must be shifted continuously in the horizontal dimensions.

Sandor (1981:93) continuously states that no lever in the playing mechanism of the pianist acts on its own. There is always another lever involved in lifting, supporting or changing position of that particular lever's movement.

The only comment Sandor (1981:94) makes about the hand as a unit is during the presentation of the staccato movement. Photograph no 5 shows the synchronized

action of the upper arm, forearm, hand, and fingers in the staccato motion that enables the fingertips to descend vertically. The greatest amount of movement takes place in the hand and fingers, and there is a minimum of movement in the upper arm.

Photo no 5 (Sandor 1981:94)

2.7.5 K S Taylor

The only movement for the hand as a unit that is dealt with, is the hand staccato. According to Taylor (1983:16) hand staccato is the most frequently used form of staccato touch. Very fast or light passages of single notes will be played with a finger-staccato touch and a forearm martellato will provide the power for the brilliant octaves. Hand staccato, supported by the forearm, will be appropriate for the many passages falling between these extremes.

To perform this staccato, a free and supple movement of the hand from the wrist is necessary. Play repeated sixths in C major with the thumb and the fifth fingers to practise this movement. The wrist and forearm will be held on the same level as the keys and the hand will therefore lift slightly higher than the wrist prior to striking the keys.

2.7.6 L Conus

Conus (1984:12) describes the movement of the hand as a unit under the heading 'staccato'. Quick, light passages can be played with a 'light wrist' (usually called a wrist staccato). The hand works as a unit from the wrist. This is one of the few times the keys should be approached from above.

2.7.7 Other works studied by the researcher

Coviello (1934:23) suggests a free fall exercise as practice for the hand as a unit. Booth endorses Coviello's exercise and describes it by saying:

> The movements made are only of the hand from the wrist. The exercises are best practised on one finger at a time held slightly forward (Booth 1934:38).

2.7.8 Conclusion

The following summary of the opinions of the identified authors on the use of the hand as a unit and its different movements in piano playing, can be used as guidelines:

- during the explanation of the 'staccato' movement, the identified authors deal with the use of the hand as a unit. It is called wrist staccato, because movement from the wrist initiates the movement. It is also called hand staccato, because the hand and fingers, from the wrist, move as one unit
- the hand should be slightly higher than the wrist at the beginning of the movement. Avoid a flabby wrist or flinging the hand back after every movement
- Last compares the staccato movement to that of a knocking movement. During the knocking movement the hand is curved into a loose fist and the whole hand is working as a unit, moving towards the object (door). During staccato playing the fingers are rounded and firm, working as a unit (fingers should not move independently of the hand) and moving towards the piano. If the knocking movement is not started a little distance away from the door, no sound will be possible. The staccato movement starts in the air, not too far away from the keys.

The energy of the movement is projected into the instrument and is similar to the knocking movement.

2.8 The fingers

2.8.1 J Gát

Gát states that the most important subdivision of piano playing is finger technique. The work of the fingers is not only of great importance in the active swing-stroke (*free fall*) of the fingers but also in transmitting the force of the arms.

The discussion Gát (1958:143) has on the characteristics of the fingers is very informative and therefore a shortened rendering of the discussion is given here.

He describes the thumb as an outer finger and much shorter than the neighbouring second finger. This inclines the use of the forearm rotation movement in scale progression, which endangers the velocity and evenness of playing.

The second finger's performance, contrary to general belief, leaves much to be desired. It is overburdened and stiffened by the movements required in everyday life. Because of its comparatively outer position it easily acts as an elongation of the arm in striking a key. This could produce uneven playing in the same way as the thumb.

The third finger is the longest and inclined to become passive. It should be kept taut (bent), or the third phalanx will 'give' or bend inwards after the stroke.

The fourth finger is connected with the third and fifth fingers by junctures. If the third and fifth fingers remain unmoved, the junctures will greatly impede the motion of the fourth finger. The general viewpoint that the fourth finger is weak and slow could not be further from the truth. The striking force of the finger is proportionate to its length and its agility even surpasses that of the other fingers. Because the fourth finger is not as often used

in everyday life as the other fingers, special care should be taken to develop it in piano playing. It must be remembered that the fourth finger is at a disadvantage only if the neighbouring fingers are kept immobile.

The fifth finger is one of the most muscular fingers. This is obvious when its role in octave playing is looked at. Its strokes, however, are weak on account of its shortness and small mass. As it is an outer finger, the fifth finger's active participation should not be replaced by forearm strokes.

Gát (1958:143) stresses the fact that the circumstances under which the fingers are best capable of accomplishing their task should be found. Each finger should be able to move independently, but with the supportive movement of the rest of the hand and forearm.

2.8.2 J W Bastien

- Second to fifth fingers

Bastien (1977:165) deals with the thumb on its own, apart from the 'other' fingers. The only information available on the 'other ' fingers is found in the section dealing with posture and hand position. Bastien uses chords and five finger positions to shape the fingers and to develop the correct hand position.

Bastien suggests the playing of triads, which requires curved fingers. In addition, the hand easily forms the correct position with the bridge of the hand held up with the knuckles protruding. In the beginning the student will have to concentrate on the arched position of the hand, and he will have to work at maintaining firm, curved fingers. Young children, especially, have weak fingers. The tendency is to cave in at the first joint on the second, third, fourth and fifth fingers. The little finger is particularly weak, and in addition to caving in, it often plays on the side, falling over.

Bastien (1977:169) deals with legato playing under its own heading 'Legato touch' and explains the principle by stating that it requires the pupil to play a key, hold it and release it when the next key is played. He says that the process requires intricate finger co-ordination, which may take some time to develop. Bastien refers to Gát who explains this principle by the example of a person walking. One foot comes down, the other goes up, and the process is repeated over and over.

- The thumb

Bastien (1977:172) suggests that the beginner be exposed to exercises preparing them for scale playing within the first year. In the beginning this may be just turning the thumb under first one finger, then another. The thumb should be turned under smoothly without twisting the hand and arm out of shape. When the student first begins to turn the thumb under, he may start by turning under the second finger. The next step is to turn the thumb under 3, and finally turn under 4. Crossing a finger over the thumb is just as important as turning the thumb under. The crossing should be made as smooth as possible.

2.8.3 J Last

Last (1980:20,21) says that pure finger action starts from the knuckle and, without any added activity from the hand, produces only a limited tonal range. Last does not actively promote the five-note compass, but she says that the idea is not to banish it altogether because it is important in shaping the hand and getting the feel of the keys. She suggests that the fingertips be kept close to the keys and that finger movement is limited, until the finger ends are strong enough to carry extra energy.

Although Last deals with legato under its own heading, she describes the touch as follows:

> The fingers 'meet' at the bottom and do not pass each other on the way up and down, as would a seesaw (Last 1980:27).

She uses the image of walking: one foot remains on the ground until the next reaches it.

In cantabile playing arm weight is added to the fingers. The arm gently relaxes, allowing its weight to be transferred onto the fingers (never relax the fingertips).

The thumb is dealt with on its own by Last (1980:25). She declares that problems connected to the thumb are due to two reasons: 1) the use of too much assistance from the forearm and 2) too slow a reaction in the lateral direction. Last (1980:36) suggests that as the right hand prepares to play a scale ascending, the elbow swings away from the body, causing the fingers to lie obliquely over the keys and the thumb to be in a position ready to move. When the first note has been struck with the thumb, it moves under the second finger rather than back to its normal resting position. From then on it travels continuously. This movement also applies to the left hand descending.

2.8.4 G Sandor

Sandor (1981:18) stresses the fact that only the fingers are in actual contact with the keys and that all other activities will be geared and limited to the role of helping them.

> Actually all our arm and body motions serve no other purpose than to help and to cooperate with the fingers (Sandor 1981:52).

Antagonistic muscles located in the forearm execute all vertical finger motions, therefore the fingers' position is correct only if it is placed as if it were an extension of its corresponding muscles. This means that there must be a slight horizontal adjustment in the position of the arm for each finger.

According to Sandor (1981:21), although each of the fingers is different in length and shape, four of them (the index finger, the third, the fourth and the fifth finger) are similar in structure. The thumb, however, is different in structure, as well as in length and shape. The thumb needs special attention and it requires a different wrist, hand and arm position from the other fingers.

The fingers must be seen as the extension and continuation of the forearm muscles and tendons that move them. The fingers need continuous adjusting motions by the wrist, forearm, and the upper arm to accommodate them and enable them to move freely, without hindrance and force, in order to produce the kind of motions that these components are capable of making. One of the most common mistakes is to use either the fingers alone or only wrist and arm motions. Fingers and arms are supposed to complement, not to substitute for, each other. It is obvious that relying on the fingers alone causes overwork in the forearm muscles, while the use of only the wrist and arm produces sloppy, inaccurate and inarticulate playing.

According to Sandor (1981:63) the thumb's most damaging position during movement is the habit of placing it under the palm. The thumb should continuously be kept alongside the hand and never be permitted under the palm. Only then can it move in an unhindered way and be free to fall vertically. The thumb is most agile and moves in any direction while it is alongside the hand.

2.8.5 K S Taylor

According to Taylor (1983:7) the position in finger-touch that is the most effective and most economical of energy and effort is to have an arched hand with knuckles slightly higher than the wrist. The tips of the fingers rest on the key-surface. Resting the forearm from elbow to wrist on a flat horizontal surface such as a tabletop easily checks the position of the forearm and hand; hold the fingers well rounded. Note that the back of the hand rises slightly from wrist to knuckles.

Taylor (1983:8) recommends a rounded finger position in most cases of brilliant touch, but when used in conjunction with the arm, as in cantabile playing, the finger will be straightened slightly more. He stresses that support is provided from the bigger levers to the fingers when a bigger sound is needed than that which the fingers can produce on their own.

2.8.6 L Conus

Conus (1984:13) suggests a high finger action when practising exercises at a slow tempo, to strengthen the small muscles of the hand and fingers. These muscles support the weight of the arm. All fingers, including the thumb, must strike the key with the same movement (in the same way) in order to produce a consistent tone. The fingers should work from the first joint (hand joint) and work as a unit (lever) like small hammers. The thumb should work independently from the side of the hand. The wrist should not be brought into play. It should be emphasized that the finger action strengthens the hand and finger in order for them to work properly and support the weight of the arm. Higher finger action is not needed for most playing, but this training is essential.

2.8.7 Other works studied by the researcher

Whiteside points out the crux of the matter in the next quotation:

> Training the completely co-ordinated arm will ensure the co-operation of the hand and fingers. Training the hand and fingers for independence does not ensure complete co-operation of the arm (Whiteside 1969:176).

Whiteside (1969:118) disapproves of the independent use of the fingers, as their muscle power is totally inadequate for producing a full range of dynamics.

2.8.8 Conclusion

The following summary of the opinions of the identified authors on the use of the fingers and its different movements in piano playing, can be used as guidelines:

- a fact that is specifically emphasized by all the authors, is that finger action is never an independent action, but always supported by all or some of the bigger levers, or muscles in the bigger levers. The result of this is a continuous adjustment of motion by the forearm, wrist and hand in order to support the fingers.
- the fingers start working from the joint connecting them to the hand but are always supported by the hand and muscles of the forearm and upper arm

- fingertips should be strengthened to carry the weight of the arm and should never collapse at the first joint. To ensure this, keep the fingers close to the keys initially until they are strong enough to carry extra energy. During the 'free fall' movement, the fingertips can, during the process of learning to use the whole arm as a unit, be strengthened simultaneously
- when the fingers are working on their own, there is no added 'activity' by the hand or the wrist apart from support given by them
- fingers must be strong enough to carry the weight of the arm into the keys without collapsing
- the fingers are not isolated units, but should be seen as part of the arm, wrist and hand
- keep the arm and wrist in line with the finger that is playing at that moment. This means that there must be a slight horizontal change in the position of the wrist and forearm for each finger
- the thumb is dealt with separately by all the different authors. The thumb's position alongside the hand puts it in a different category. The biggest problem is the placement of the thumb underneath the hand. The only position where the thumb is agile and from where it can move in any direction is alongside the hand, therefore exercises for putting the thumb 'under' are necessary.

2.9 Chapter conclusion

- The positions and basic movements of the different levers were outlined in chapter two. The literature study that was done on the basic movements and positions of levers in piano playing revealed a congruent reaction from the majority of the authors.
- They all agree on the crucial fact that the beginner should learn the correct movements from the beginning.
- Although some of the terminology differs, the leading authors in the field of piano technique agree on the basic movements that each lever should be able to execute.

- These movements were summarized by the researcher at the end of the comments authors made on each specific lever.

The basic recommendations by the leading authors are:

- A proper sitting position (The whole body).
- Position and movements of the lower body.
- Position and movements of the upper body.
- Use of the whole arm:
  - 'Free fall' movement
  - 'Float off' movement
- Use of the forearm:
  - rotation movement
- Use of the hand as a unit:
  - staccato movement
- Finger movement - the guidelines are:
  - the fingers start working from the joint connecting them to the hand but are always supported by the hand and muscles of the forearm and upper arm
  - the first phalanx is always firmly bent
  - when the fingers are working, there is no added 'activity' by the hand or the wrist apart from support given by them
  - keep the arm and wrist in line with the finger that is playing at that moment. This means that there must be a slight horizontal change in the position of the wrist and forearm for each finger
  - the thumb is dealt with separately by all the different authors. The thumb's position alongside the hand puts it in a different category. The biggest problem is the placement of the thumb underneath the hand. The only position where the thumb is agile and from where it can move in any direction is alongside the hand, therefore exercises for putting the thumb 'under' are necessary
  - fingertips should be strengthened to carry the weight of the arm and should never collapse at the first joint. During the 'free fall' movement, the fingertips

can, during the process of learning to use the whole arm as a unit, simultaneously be strengthened.

Success or failure as a pianist depends largely on the early years, when good or bad habits are being formed (Last 1980:21).