Abstract

Anatomy of a Film Score:

Star Trek - The Motion Picture

This dissertation discusses the soundtrack score of a major motion picture from both a musical and technical viewpoint. More specifically, it traces the musical steps involved in the production of the Paramount film Star Trek - The Motion Picture (1979) from the score's conception through to its release both in the cinema and on a soundtrack album. Post-production processes such as recording and dubbing are discussed in general terms, as is the composer's role within the production team as a whole. In particular, the relationship of composer and director is investigated.

A biographical statement of Jerry Goldsmith, the score's composer, is included, together with an assessment of his musical contribution to the film Star Trek - The Motion Picture. In the process of achieving this, the score is examined in terms of instrumentation and thematic design. To elucidate the latter, the score is broken down into its component cues which are scrutinized thematically, as well as visually.

Revelation of the stylistic sources synthesized into Goldsmith's highly eclectic musical language occupies a fascinating facet of this study of the score for Star Trek - The Motion Picture. References are made to numerous works from the orchestral repertoire (in particular the symphonies of Vaughan-Williams), as well as relevant scores by other film composers.

Anatomy of a Film Score:

Star Trek - The Motion Picture

by

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Abbreviations

Fls.	flutes
Picc.	piccolo
Obs.	oboes
Cor.Ang.	cor anglais
Cls.	clarinets
B.Cl.	bass clarinet
Fag.	bassoons
Bns.	bassoons
C.Fag.	contra-bassoon
C.Bn.	contra-bassoon
Cor.	horns
Hns.	horns
Tpts.	trumpets
Tbns.	trombones
Timp.	timpani
Perc.	percussion
Cel.	celeste
Hp.	harp
Pfte.	piano
Vns.	violins
Vl.I	first violins
V l.II	second violins
V la.	viola
V c.	'cello
D b.	double bass
B.D.	bass drum
Cym.	cymbal
S.D.	snare drum

Chapter One

Introduction

> The art of combining moving pictures with musical tones is still a mysterious art. Describing its values and functions is rather like describing a beautiful woman - there's no way of doing it adequately. But no-one should be condemned for trying.[1]

This statement by Tony Thomas in no way nullifies the subject of film music as a field of research worthy of serious investigation. The twentieth century has seen the birth and growth of sound and music in films to a stage of maturity which places them in the category of an art form of its own. Film is a combination of the greatest of man's artistic achievements; incorporating the visual, the dramatic and the musical into an art form of unparallelled public acceptance and recognition. It is a synthesis of components which individually may be artistically impressive but blended together, may form a creation that becomes a more embracing sensory experience.

Not only does film appeal in terms of sight and sound, but it also delves deeper than purely audio-visual appreciation, to play on human emotion. Music's main function in a film is to enhance the narrative and visual aspects of the film, aiding the realisation of emotional responses to the visuals. On a subconscious

[1] Tony Thomas, Music for the Movies (South Brunswick: Barnes, 1973), p. 17.

level "music may also prepare the emotional climate of the other film components. It is this unique ability of music to influence the audience subconsciously that makes it truly valuable to the cinema."[2]

Alongside this emotional aspect, music builds a sense of continuity, providing a unifying link that joins unrelated visual elements together. "Moreover, music can complete the total picture and produce a kind of dramatic truth, which the visual element is not always capable of doing."[3]

There is a clichéd saying in Hollywood that while a bad score can't kill a good picture, a good score can't save a bad film. This is undoubtedly true and provides just one of the pitfalls that continually plague the truly excellent composers working in film today.

Jerry Goldsmith is one such composer, a man whose film music career over the past three decades has been "almost astonishing for its consistence of quality, and for his ability to continually devise new ways of making musical comment in films."[4]

Goldsmith's contribution to the 1979 film Star Trek - The Motion Picture is central to the discussion of this dissertation. An analysis of the score will be undertaken from a number of different angles, so as to provide as complete an investigation as possible into the creation of the musical accompaniment for

[2] Thomas, p. 16.

[3] Thomas, p. 16.

[4] Tony Thomas, ed., Film Score: The View from the Podium (South Brunswick: Barnes, 1979), p. 219.

a film, tracing both its origins and development along the complicated journey to its cinematic release.

II. Goldsmith Biography

Jerry Goldsmith is considered both within the film industry and by a legion of loyal fans and movie-goers, to be one of the greatest composers of film music to appear in the six decades since the birth of sound in the cinema. For over thirty years he has brought his skill and imagination to over one hundred films and a plethora of television productions. He has worked with almost every genre in motion pictures, earning one Oscar, fourteen Academy Award nominations, six Golden Globe nominations, four Emmy awards and six Emmy nominations along the way.[5]

Jerry (Jerrald) Goldsmith is one of few film composers to have actually been born in Los Angeles. Born on February 29, 1929 in an average but comfortable non-musical family, Goldsmith's father (a structural engineer) and mother, encouraged him to take piano lessons at the age of six. He displayed no unusual musical aptitude until twelve years of age, when his skill as a pianist led his parents to believe he might have a future as a musician. He was placed with the distinguished teacher and concert pianist Jacob Gimpel, with whom he remained during his teens, taking lessons after school.[6] It was through Gimpel that Goldsmith was able to

[5] Jonathan Benair, "Jerry Goldsmith: A Study in Versatility" Variety, 2 May 1986, p. 11.

[6] Tony Thomas, ed., Film Score: The View from the Podium (South Brunswick: Barnes, 1979), p. 219.

meet many of the European musicians and composers who had left Europe because of the Nazi era. Among them was composer Maria Castelnuovo-Tedesco, with whom young Goldsmith studied composition, theory and counterpoint during his mid-teens.

After completing his years of normal schooling at Dorsey High School, he enrolled in Los Angeles City College to study music further, and at the same time he attended classes on film composition given by Miklos Rozsa at the University of Southern California.[7] It was at Los Angeles City College that his musical interests changed direction, for he became involved in the College's fine drama department as voice coach, accompanist and assistant conductor for the opera and chorus, as well as writing incidental music for the department's plays.[8] Interest in musical drama and composition replaced the appeal of the concert stage and with the "realization that performing required more technique and stamina than he felt he had,"[9] Goldsmith turned with relish to pursue his ambitions to become a composer.

In 1950, at twenty-one and a newly-married man (he has since re-married), Goldsmith sought work in "anything that would give him access to music."[10] He obtained a position as clerk/script-typist in the music department of Columbia Broadcasting System's (CBS)

[7] Thomas, p. 221.

[8] Derek Elley, "The Film Composer: Jerry Goldsmith," Films and Filming, 25 (May 1979), p. 22.

[9] Thomas, p. 221.

[10] Thomas, p. 221.

West Coast headquarters in Hollywood, Los Angeles. As his interest in composition was gradually made known, the head of the music department, Lud Gluskin, took an interest in Goldsmith and invited him to join the studio musical workshop. After a couple of years he was given assignments in radio and in time was put in charge of providing music for radio series such as Romance, Suspense, Escape and CBS Radio Workshop. In these modest assignments, severely limited by small budgets, Goldsmith often used combinations of only two instruments, playing either the piano, organ or novachord himself.

In 1955, the chance came to move into television and Goldsmith started to work under contract as a composer for $150 a week on the weekly hour-long melodrama series Climax, which was the first live dramatic programme to come from the CBS Los Angeles studio. He was required to write a score each week, also modest due to funding, and to perform it as live accompaniment. This called for a certain amount of ad-libbing in order to meet the timings and to cover errors in performance by the actors and the technicians. Further experience with live television came in the forms of Studio One and Playhouse 90, a one-and-a-half-hour-long weekly show for which Goldsmith was required to produce 45 minutes of music per week. His time in live television provided a major turning point in his career as well as "an education in scoring such as no aspiring composer today can possibly have, since all scoring now employed in television is pre-recorded."[11]

Goldsmith's move into filmed television came with the series

[11] Thomas, p. 221.

The Twilight Zone and Gunsmoke. His work for the Thriller series and The Man from U.N.C.L.E. earned him Emmy award nominations and his theme song "Three Stars Will Shine Tonight" from Dr. Kildare was a hit.

Goldsmith did his first feature film score, Black Patch, in 1957, while still at CBS. In 1959 he scored two similarly modest features, City of Fear and Face of a Fugitive, with Studs Lonigan following the next year. It is interesting to note that the pianist Goldsmith used in this score, which he calls his first "grown-up" picture score, was none other than composer John Williams. This was one of the last films in which Williams worked as a session musician, prior to pursuing his own very successful career as a film composer.[12]

Goldsmith left CBS in 1960 and was hired by Revue Studios where he scored the aforementioned Thriller television series. To quote Tony Thomas: Thriller "furthered Goldsmith's reputation and made him known to the more important musical figures in Hollywood, such as veteran composer Alfred Newman, who, . . . impressed with his work, . . . persuaded Universal to hire Goldsmith for what would be his first important film, Lonely Are The Brave (1962)."[13] His quiet subtle score for John Huston's Freud, recorded in Rome that same year, "registered him as a distinct new force in the scoring fraternity."[14]

Alfred Newman brought Goldsmith to Twentieth-Century Fox in 1963 to score The Stripper, an event that marked the first

[12] Elley, p. 24.

[13] Thomas, p. 222.

[14] Thomas, p. 222.

of the composer's pictures with director Franklin Schaffner and the start of his long association with that studio. When not working for Fox, where he helmed much of the studio's product during the late 1960's, Goldsmith was hired by other studios, such as Paramount for John Frankenheimer's Seven Days in May (1964) and MGM for A Patch of Blue (1965).[15]

> Jerry Goldsmith's full employment throughout the Sixties gives doubt to the laments about the lack of work among film composers. The decade was, in truth, a slim one for most of the best established composers, firstly, because many of the scores went to the more popular musicians . . Goldsmith, on the other hand, averaged four and five pictures a year, just as the veterans had done in the heyday of the big studios. This was partly luck and partly being able to impress producers with a remarkably wide range of musical talent.[16]

It is this versatility that has helped him successfully score movies in almost every film genre, e.g. Westerns (Black Patch, Lonely Are The Brave); Thrillers (The Boys From Brazil, Coma); Mysteries (Chinatown); Horror (Psycho II, the Omen trilogy); Tales of the Supernatural (Poltergeist I & II, Twilight Zone - The Movie); Science Fiction (Alien, Supergirl, Star Trek - The Motion Picture); Period Epics (Patton, The Wind and the Lion); Comedies (The Trouble With Angels, The Lonely Guy); Action Dramas (Rambo, Under Fire); Fantasy (Legend) and animated features (The Secret of NIMH). His tonal language runs the complete gamut

[15] Thomas, p. 222.

[16] Tony Thomas, Music for the Movies (South Brunswick: Barnes, 1973), p. 208.

from nineteenth-century romanticism to serial music, quasi-jazz to totally electronic; and for this reason, his style is not always instantly recognizable.

Goldsmith's Academy Award nominations include Freud (1962); The Sand Pebbles (1966); Planet of the Apes (1968); Patton (1970); Papillon (1973); Chinatown (1974); The Wind and the Lion (1975); The Boys From Brazil (1978); Star Trek - The Motion Picture (1979), which was also nominated for a Golden Globe Award that same year; Poltergeist (1982); and Under Fire (1982).

His only Oscar for best score was awarded for The Omen (1976). In 1979, Goldsmith lost the Oscar for Star Trek to Georges Delerue for A Little Romance.

As for Goldsmith's concert works, there are very few, hardly surprising considering the consistently prodigious output which spans his film career. There exists a twelve-tone cantata, Christus Apollo, with a text by Ray Bradbury, that has had two performances in Los Angeles. His ballet Othello, performed by the Australian Ballet in 1971, uses music from his highly innovative score for Planet of the Apes. A work for orchestra (the title unknown to the present author), has been performed by the St. Louis Symphony Orchestra with Leonard Slatkin conducting. There also exists an unfinished Cello Concerto, an abstract, quasi-serial avante-garde work for cello and four different groups of instruments, which makes use of tapes.[17]

[17] Derek Elley, "The Film Composer: Jerry Goldsmith," Films and Filming, 25 (June 1979), p. 24.

Chapter Two

I. Conception of a Film and Birth of a Score

The idea of making a Star Trek movie was born in the early 1970's, almost a decade before Star Trek - The Motion Picture was finally released. After the fabled NBC TV series was cancelled in 1969 (having survived three seasons and seventy-nine episodes), it was placed in syndication and re-run on television on 142 stations in the United States and in more than fifty foreign countries. Paramount, the studio responsible for Trek's creation, was pleasantly surprised to discover that as the re-runs continued, the audience also grew. In fact, the audience was larger on the re-runs than it had been on the original network runs.

Gene Roddenberry, the man responsible for creating the Star Trek universe and producing the series in 1966, approached Paramount with the idea of doing a movie. Initially the studio was not interested, but after the success of Star Wars (a Twentieth-Century Fox film) the Paramount executives were convinced that there was an audience for a Trek film. Roddenberry was given approval to produce a script, but studio executives turned it down and called in about fifteen different writers over a twelve-month period. Still unhappy with the scripts produced, Paramount called in Science-Fiction novelist Isaac Asimov as technical advisor on the film, to determine whether or not Roddenberry's unusual conceptual ideas were plausible enough for a movie. Asimov was in agreement with Roddenberry's concept and eventually, after a collaboration with story-writer Alan Dean Foster and screenplay writer Harold Livingston, a script was produced. The final parts of the script

however were constantly being reworked, even when shooting began in early 1978.

Problems were far from over though for producer Roddenberry and director Robert Wise. There were casting hassles concerning re-signing of the old crew-members from the TV series. The special effects produced by Abel and Associates were deemed unacceptable within the time-span available to the production. A whole new effects team, headed by Douglas Trumbull (who worked on Close Encounters of the Third Kind) and John Dykstra (who won an Oscar for his work on Star Wars) had to be engaged, losing six to nine months of production time. Most sources confirm that Star Trek - The Motion Picture's forty-two million dollar-plus budget was spent on the rushed visual effects. After a studio market study, the initial release date was changed from April 7, 1979, to December 7 that same year. Though it was known from the very beginning that Paramount had hired Jerry Goldsmith as composer for the film, this December 7 deadline enforced a very strict schedule upon him.[1]

The first parts of the film seen by Goldsmith were the live-action shots, which he saw in May, 1979. As yet, none of the visual effects had been completed, only test shots of the Cloud, Spock's shuttle and the Enterprise in dry-dock.[2] Goldsmith's official starting date was August 1 and when he first "spotted" the picture it was only sixty percent complete and not edited

[1] Karen E. Wilson, "An Interview with Gene Roddenberry - The Man behind the Myth," Starlog, Nov. 1980, pp. 43-47.

[2] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, p. 1356. All further references to this work, relevant to this chapter, appear in the text.

due to the schedule problems caused by the special effects team changeover (p. 1357). Usually the composer works from a finished print of the film. On this occasion however, Goldsmith was faced with long empty scenes, containing only a shot of a card, on which was typed the words "Special Effect," "Special Optical" or "Scene Missing." These would appear on the screen for the length of time the scene would eventually take (p. 1666). Goldsmith had to visit Trumbull and Dykstra's workshops to see the miniatures for the special effects in order to gain a sense of the visual style they were aiming to produce (p. 1358).

> The fact that I didn't have any film to look at most of the time was very normal for science-fiction. John [Williams] went through this on Star Wars. It's just one of those things that happens on this kind of picture." (p. 1495)

To quote Robert Wise the director, the whole film suffered during production from this "piecemeal approach," for not only the music, but also the visual effects, sound effects and scripting were re-worked as the film advanced. None of the V'ger sequences for example were completed until the final two weeks and Goldsmith was continually plagued by problems caused by viewing loose, unrelated material and sequences without certain key scenes (p. 1358).

> For one period, there, I didn't leave the house for four weeks. One night a week, I'd go to Fox to record. Then I'd come back and start writing all over again. There'd be a little bit of film, I'd run it on the Movieola I have upstairs, spot it - decide on the places I felt needed music - and start in writing. I was working from the work print as fast as it was cleared by editor and director. (p. 1584)

Towards the end, composer and long-time friend of Goldsmith's, Fred Steiner, was brought in to re-score original material in certain cues which had been re-cut, as Goldsmith himself was too pressed for time completing the final reels. These decisions to re-cut certain scenes, sometimes made even during a recording session, did not help to ease the time pressures and meant constant re-writing and re-orchestrating on the part of Goldsmith, Steiner and orchestrator Arthur Morton (p. 1609). Fred Steiner, incidentally, was responsible for many of the scores from the original Star Trek television series.

Initial recording began around September 24, 1979, at the soundstage of Twentieth-Century Fox. This choice of location was made necessary by the prominent inclusion in the score of a large pipe organ, rarely available in Hollywood's studios. Most of the conducting was done by another of Goldsmith's long-time associates, Lionel Newman, while the composer himself supervised the recording and mixing from inside the recording booth. Music features in over seventy-five percent of the film's soundtrack, running for some one hundred minutes of the film's total two hours and ten minutes screening time. Normally a score of this length would only take ten sessions to record, but as Goldsmith often had only one sequence to work with, not all of the time in each session was needed. Thus, the number of scoring sessions ran to twenty-two, of which most were done at night. This meant that the sound and music editors were forced to operate on the basis of recording and dubbing one reel of film at a time, as soon as Goldsmith finished recording a segment of the score (p. 1410).

Under normal conditions, i.e. working from a finished print

of the film, the composer would have the score written and recorded in a time-span of five to six weeks. But, due to the aforementioned "piecemeal approach" to Star Trek's production, Goldsmith was forced to stretch the score's development over a period of a number of months.

Recording of the music soundtrack was completed at about two a.m. on the morning of Friday, November 30. The final answer print with both the opticals and soundtrack completed was ready on the following Monday, December 3. This was the first time anyone saw the whole picture in its complete form. It premiered on the Thursday night and opened at 852 cinemas in nationwide American release a day later on Friday, December 7 (p. 1675).

Of the experience, Goldsmith says: "It was . . . a tremendous drain, emotionally and physically . . ." (p. 1675). "This was the hardest go I've ever had on a picture, but ultimately one of the most rewarding." (p. 1408)

Although the film is often criticized for being too long and slow-moving with too much emphasis on special effects, one can argue convincingly that the score is its finest single component. In scenes regarded as slow and stodgy, Goldsmith's epic musical score is credited for "sustaining the colossal production's emotion and momentum single-handedly."[3]

Despite the critics' not always favourable reviews, Star Trek - The Motion Picture was a box-office hit, earning $11.8 million on its first weekend run, breaking the previous three-day record of $10.4 million set by Warner Brothers' Superman - The Movie.

[3] Sam Maronie, "Interview: Jerry Goldsmith," Starlog, Oct. 1981, p. 54.

Star Trek - The Motion Picture is set two and a half years after the Enterprise and her famous crew have returned to Earth, having completed their five-year voyage of discovery across the galaxy, which is depicted in the television series. The plot actually includes elements of form of the TV episodes: The Corbomite Maneuver; The Changeling; The Immunity Syndrome and The Doomsday Machine; though the parallels are generally considered unintentional.

All of the old crew are re-united: Captain James T. Kirk (William Shatner), recently promoted to the position of Admiral, fulfilling Earth-bound duties high in the hierarchy of Starfleet. Mr Spock, the half-human, half-Vulcan First Officer and Science Officer (Leonard Nimoy); Doctor Leonard ("Bones") McCoy, Chief Medical Officer (DeForest Kelley); Commander Montgomery ("Scotty") Scott, Chief Engineering Officer (James Doohan); Lieutenant Commander Sulu, Helmsman (George Takei); Lieutenant Commander Uhura, Communications Officer (Nichelle Nichols); Lieutenant Pavol Chekov, Weapons Officer (Walter Koenig); Yeoman Janice Rand (Grace Lee Whitney); and Nurse Christine Chapel, now a doctor (Majel Barrett).

The old crew are joined on the bridge by two newcomers to the Enterprise: Captain Willard Decker, Executive Officer (Stephen Collins) and the head-shaven Deltan navigator Ilia (Persis Khambatta).

Set in the twenty-third century, the film opens in deep space, where an enormous luminescent Cloud lurks menacingly in a sector of the Klingon Empire. Three Klingon battle cruisers attack the

unidentified intruder, only to totally disappear, falling prey to a couple of blasts of energy, the likes of which have never before been encountered in this part of the galaxy. The battle is witnessed by a deep space monitoring station, Epsilon Nine, and the alert raised when it is discovered that the Cloud is on a direct heading for Earth. The Cloud's existence at this stage is also discovered by Spock, who, while on Vulcan undergoing a ritual supposed to purge him of any remaining human emotion, senses it as a consciousness which reaches out across the void to touch his mind.

As fate would have it, the Enterprise is the only Federation starship within interception range and it is called out of orbital dry-dock above the Earth, where it has just undergone eighteen months of complete re-designing and re-furbishing. With the new equipment, including new "warp-drive" engines, completely untested in action, Admiral James T. Kirk takes over the helm from the younger Captain Will Decker, who is embittered at having his command removed. After a transporter malfunction, the Navigator and Science Officer are killed and the former position is filled only shortly before departure by a bald Deltan woman, Ilia, who had previously been involved in a relationship with Will Decker when the Captain was stationed on her home planet.

Learning of the Epsilon Nine station's destruction by the Cloud, which ignored all attempts at communication with it, the Enterprise departs. After a rather disastrous test of the new engines at warp power which almost destroys the ship, the crew is joined by Mr Spock, who shuns his Vulcan disciplines to fill his old station as Science Officer aboard the Enterprise.

With Spock's help, the engines are re-balanced and the Enterprise reaches the outer boundary of the enormous Cloud before it reaches the Solar System. The Cloud responds to the starship's arrival with a volley of deadly energy bursts, but fortunately the new deflector shields prove strong enough to survive the initial onslaught. Deciding to maintain a strictly non-aggressive posture, the Enterprise transmits friendship messages to the Cloud, which subsequently allow the starship to proceed. Suspecting the existence of an alien vessel at the centre of the Cloud which is generating the energy field, Admiral Kirk orders the crew to take the Enterprise into the heart of the intruder.

Through the brilliant luminescence of the Cloud, an enormous alien vessel does appear. As the Enterprise skims its surface, an energy being, one of the aliens, enters the bridge, momentarily taking control of the ship's computer before consuming Ilia and disappearing in a flash of energy.

At this point, the ship is siezed by a tractor beam and dragged into a huge chamber in the depths of the gargantuan vessel. No sooner is the Enterprise brought to a halt than a being appears in Ilia's cabin bearing exact resemblance to the Deltan navigator, save for a glowing sensor on the creature's throat. The apparition reveals that it is indeed a robot probe from the alien vessel, sent by the mysterious V'ger, and has assumed the form of the Deltan to communicate more easily with the humans, or carbon units as it refers to them, aboard the Enterprise. In a mutual agreement to observe and record each other's functioning, Captain Decker, having known Ilia the closest, is given the job of trying to revive her thought and memory patterns, which Spock suspects

may have been duplicated along with the rest of her physical make-up, in an attempt to control the probe and discover more about the origin and identity of V'ger and the huge vessel in which they are trapped.

Meanwhile, Spock leaves the Enterprise in a stolen thruster suit, with which he penetrates the next chamber of V'ger's interior. Here he floats past images of planets, moons, stars and galaxies, even the Epsilon Nine station and the Klingon ships; all representatives of V'ger's journey reduced to data patterns. Concluding that they are trapped inside a living machine, Spock attempts a Vulcan mind-meld with an image of Ilia, and is almost killed by the awesome power of V'ger's consciousness.

After being rescued from space by Admiral Kirk, Spock is revived and reveals his discovery that V'ger is everything they see around them: the alien ship, the Cloud, the probe; a living machine, sent to Earth by a machine planet, looking for its creator.

Meanwhile, the giant craft in which the Enterprise floats trapped, enters Earth orbit, its protective Cloud having dissipated. V'ger emits a simple radio signal to the Creator but receives no answer. Deducing that the carbon unit (human) infestation of the planet must be interfering with the Creator's reply, V'ger releases a number of orbiting energy devices in preparation to wipe out all life on Earth. Kirk cunningly plays a game of words with the ultra-logical probe and reaches a bargain: he will only disclose the reason why the Creator has not answered if V'ger withdraws the orbiting devices. V'ger complies, and on further refusal by Kirk to reveal the information to anything but V'ger itself, the

the Enterprise is drawn into the very heart of the vessel.

Kirk arranges a secret count-down with Engineer Scott to total self-destruction of the ship and its crew as a final attempt to destroy V'ger if negotiations fail. Entering an oxygen/gravity envelope formed about the ship, Kirk, Spock, McCoy, Decker and the Ilia probe leave the Enterprise for V'ger's central brain complex.

Here the truth is discovered: V'ger is in fact the deep space probe Voyager Six, its middle letters obliterated by carbon scoring, launched by NASA over three hundred years ago, its mission to learn all that is learnable and to return that information to its Creator, Man. Apparently the probe travelled to the far side of the galaxy in a black hole and when it emerged, fell into the gravitational pull of a planet inhabited by living machines. These machines recognized the device as kindred and built an enormous space vessel to bring it back to Earth and fulfill its programming. On the return journey it amassed so much knowledge that it achieved consciousness itself and became a living entity. Now V'ger had learned all it could, reaching the boundaries of knowledge and logic, and was looking to evolve. To do so it needed a human quality; that uniquely human ability to leap beyond logic into the realms of emotion and imagination. It is revealed that the only way it could achieve this would be through physical union with a human. In a noble gesture, prompted by his love for the dead Ilia, Decker volunteers to join with the probe; to have its knowledge transmitted to its Creator, Man, in person. In a dazzling display of special effects, the two life forms, human and living machine, meld together, consuming the entire alien vessel and creating a new life-form in the process, which

gradually fades into another dimension.

The gallant crew of the U.S.S. Enterprise all survive, except for Ilia and Decker of course, and having saved Earth from the alien menace, set off into the void in search of new adventure.

Chapter Three

The Score

I. Instrumentation

The music for Star Trek - The Motion Picture was scored for an enormous orchestra of approximately one hundred pieces. In his on-going quest to develop new timbres and textures, Goldsmith uses many unconventional instruments, both acoustic and electronic, as well as exploring sounds made on conventional orchestral instruments using unconventional playing techniques.

Based around a core of fifty-four string players, the orchestra is of Mahlerian proportions. Goldsmith employs triple woodwinds, with the addition of electric alto flute, contrabass clarinet, tenor saxophone and echoplex electric bass flute (an instrument which produces a low resonant flute sound followed by a series of echoes of diminishing volume). The brass section contains four trumpets, four trombones, six horns and two tubas. Added to this are two harps, four timpani, an electronic instrument called the "beam," which produces the low percussive notes and glissandi associated with the appearance of the Cloud, a keyboard section consisting of nine different instruments and a battery of percussion, both tuned and untuned (see Appendix B).

First appearing in Laurence Rosenthal's score for Meteor (1979), the beam is an aluminium bar or beam, from between ten to twenty feet in length, supported on two sawhorses. Narrow at one end and wider at the other, the instrument is strung with sets of wire strings in groups of two or three, with the

strings in each set tuned either in unison or in octaves in the lower registers. It has an extensive range, covering both bass and treble registers, the notes being marked by pieces of masking tape. Electronic pick-ups are plugged into each end, and the vibrations of the strings and beam combined are amplified, creating some very unusual effects. It is played by a number of different means. The strings may be bowed with a conventional cello or bass bow, or struck percussively with a cylinder or mallets. Another method of tone production entails stopping the strings with a padded horizontal wooden board attached to a vertical handle. This enables the player to locate different pitches and to produce overtone clusters. The performer, Craig Huxley, who designed and built his own instrument, was required to wear slippers during the recording of the score at the Fox sound-stage to ensure that the sound of his feet as he ran along the instrument's length from note to note was not picked up and amplified.[1] (It is interesting to add that by incredible coincidence, he also appeared in one of the early television episodes of Star Trek as a child actor.)

Dominating the orchestra's keyboard section is the Twentieth-Century Fox pipe organ, which features prominently throughout the score. As well as two grand pianos, celeste and clavichord, Goldsmith uses an electric piano and four different synthesizers.

Of the synthesizers, the CS-80 is a programmable polyphonic analogue synthesizer designed by Yamaha around the mid-1970's.

[1] Personal interview with Ken Mitchell, Paramount Studios, July 8, 1986.

This instrument is capable of memorizing up to thirty different synthetic sounds and has a velocity- and pressure-sensitive keyboard to reproduce pitched sounds. It is both a performance and studio synthesizer, being capable of eight-note polyphony.[2]

The instrument designated in the score as "Serge," is a modular analogue synthesizer, usually custom-built for a particular recording studio. It is a monophonic instrument incapable of memorized sounds, but through the use of patch cables, can produce very complex sound effects.[3]

Like the CS-80, the OBX is another programmable eight-note polyphonic analogue synthesizer, designed around the late seventies by Oberheim Electronics. Suitable for either performance or studio work, it is capable of thirty-two sound memories.[4]

Designed in the mid-1970's by the American-based ARP company, the fourth synthesizer is a monophonic analogue recording-studio synthesizer known as the ARP 2600. This instrument is able to be operated with keyboard (for pitched sounds) or without (for sound effects). Sounds are created on this synthesizer by connecting modules together using patch leads. Each of these modules has a specific effect on the sound. The ARP 2600 has a stereo output suitable for spatial sound effects.[5]

[2] Personal interview with Ben Lancini, University of Queensland, October 9, 1986.

[3] Lancini interview

[4] Lancini interview

[5] Lancini interview

Of the tuned percussion, a few instruments are worthy of a note of explanation. The rub rods are a collection of upright aluminium rods set up like chimes in tuned fashion. They are played by rubbing them with gardening gloves covered in resin, which sets the column of air in the tube vibrating, producing a very high, shrill pitched note.[6]

A portable box zither of Hungarian origin, the cimbalon has up to thirty-five sets of strings divided by one or two bridges. The strings are struck with two mallets, the ends of which are wrapped in cotton wool, in a playing style similar to that of the dulcimer.[7]

Unconventional orchestral instruments abound in the untuned percussion section. In all, it took an average of five and sometimes six percussionists to handle the demands of Goldsmith's score.

The slit drum, classified by Sachs and Hornbostel as an idiophone percussion tube or percussion vessel, is not a true drum. It is made by cutting, burning or gouging a slit in the wall of a hollowed-out piece of wood, often with the two sides or lips of the slit carved to different thicknesses so that at least two pitches can be produced.[8] In the score for Star Trek - The Motion Picture, Goldsmith employs the technique of bouncing

[6] Mitchell interview

[7] "Cimbalon," New Grove Dictionary of Musical Instruments, ed. Stanley Sadie (London: Macmillan, 1984), I, 370; hereafter cited as NGDMI.

[8] "Slit Drum," NGDMI, III, 405.

rubber super-balls on the wood, probably to ensure maximum resonance from the instrument.

In terms of true drums, Goldsmith uses among others, boobams, which are a series of small tunable drums of American design. They consist of a drumhead secured to the top of an open stem of bamboo which acts as a tuned resonator. Pitch is governed by the frequency of the air column in the resonator and by the tension on the "head." Boobams are played with the fingers or small-headed drumsticks of varying textures.[9] Those instruments referred to in the score as elephant drums are pitched African log drums.

Of the next two instruments to be discussed, both rely on water as a sound medium. Water crotales are small pitched cymbals with upturned rims placed in water. When the cymbal is struck and the surrounding water consequently moved, a tone is produced which moves eerily in pitch, usually in a downward glissando.

The waterphone was invented in 1967 by Richard Waters, who manufactured them in California.[10] Five different sizes are currently produced, of which Goldsmith uses two: a large and a small, with resonators ranging from sixteen to thirty-six centimetres in diameter. Made from stainless steel and bronze, the waterphone consists of an urn-shaped, water-filled bowl resonator, the dome-shaped top of which opens into a vertical unstopped cylindrical tube. Around the edge of the dome are attached between twenty-five and thirty-five nearly vertical

[9] James Blades, "Boobams," NGDMI, I, 251.

[10] Hugh Davies, "Waterphone," NGDMI, III, 843.

rods, which are tuned in equal or unequal twelve-note or microtonal systems, depending on the model. These rods are played with a bow. Use of water in the resonator produces timbre changes and glissandi.[11]

Angklungs, tuned bamboo sliding rattles from Indonesia, feature in a number of cues throughout the film. They consist of "two or three bamboo tubes, . . . closed with a node at the bottom. A tongue-shaped segment is cut out of one side of each tube, the size of the segment determining the pitch . . . . The tubes sit in small troughs cut in the base of the square bamboo frame; attached to the narrow vertical tubes tied with rattan, they slide to and fro when shaken."[12] In the Star Trek score, they are played with three or four in each hand (piccolo angklungs) and individually (low angklungs).

The mixing bowls referred to in the score are stainless steel bowls, first used by Goldsmith in his innovative score for Planet of the Apes (1968). When struck, the bowls produce "metallic twangs."[13]

[11] Davies, "Waterphone," p. 843.

[12] Margaret J. Kartomi, "Angklung," NGDMI, I, 60.

[13] Irwin Bazelon, Knowing the Score (New York: Arco Publishing, 1975), p. 87.

II. Thematic Analysis

The musical content of Star Trek - The Motion Picture comprises thirty-two different sections or "cues" of music. There also exists an overture to the film, a concept quite unknown to modern cinema-goers, but as in the "Golden Age" of Hollywood, studio executives considered a selection of music from the film to be an important mood-setting device. The overture is based on Ilia's theme, arranged and orchestrated by Ian Fraser.

Each cue is designated a number corresponding either to the scene in which it first appears (e.g. "Spock Walk" is designated 273, for the cue starts as Spock begins his space walk in scene 273), or the reel of film in which it appears (e.g. "The Cloud," the cue in which the Enterprise first enters the Cloud, is designated 7-1, i.e., Reel 7, Part 1). The capital letter "R" after a cue number indicates that the cue has been revised.

Goldsmith's score for Star Trek is drawn from six different groups of themes. Writing in an orchestral idiom which combines both late-nineteenth and twentieth century styles, Goldsmith uses a very economical core of thematic ideas, developing them architecturally alongside the visual action in a synthesis of both leitmotif and theme-and-variation techniques. The following quotation describing Wagner's use of the leitmotif in such epic works as his Ring des Nibelungen, demonstrates its relevance to film-scoring technique.

Grout suggests that:

> A leitmotif is a musical theme or motive associated with a particular person, thing, or idea in the drama. The association is established by sounding the leitmotif (usually in the orchestra) at the first appearance or mention of the object of reference, and by its repetition at each subsequent appearance or mention. Thus the leitmotif is a sort of musical label - but it is more than that: it accumulates significance as it recurs in new contexts; it may serve to recall the thought of its object in situations where the object itself is not present; it may be varied, developed, or transformed in accord with the developments of the plot; similarity of motifs may suggest an underlying connection between the objects to which they refer; motifs may be contrapuntally combined; and, finally repetition of motifs is an effective means of musical unity, as is repetition of themes in a symphony.[14]

This same observation could be redirected at Goldsmith's score for Star Trek - The Motion Picture and it would be just as valid as it is for Wagner's Ring cycle.

Roy Prendergast describes the application of leitmotifs in film as follows:

> The melodies or motifs of a leitmotif score can be restated in various forms each time the character appears. Alterations in the melody's character (e.g. sinister, loving, excited) can give the listener some indication of that character's state of mind at any

[14] Donald J. Grout, A History of Western Music, Revised Edition (London: J.M. Dent, 1973), pp. 613-14.

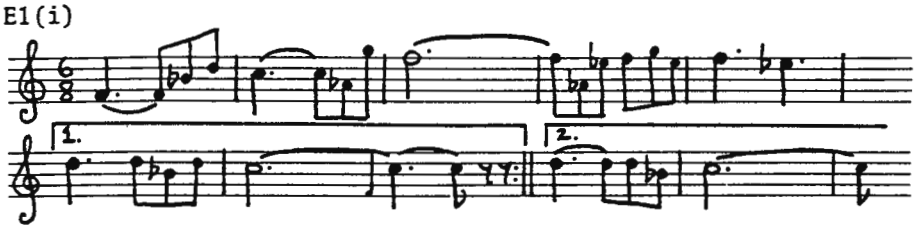
> particular point. This device can become very valuable if the scene itself is emotionally neutral; the music can add something not already present on the screen . . . . Most composers working with leitmotif scores tend to treat the melodic material as variations. In other words, a motif varies and develops alongside a character or dramatic situation. [15]

Naturally, there are many bad examples of this type of score, but these are balanced by the numerous fine examples of the leitmotif concept, where it is used in a highly subtle and unobtrusive manner. Goldsmith is a master craftsman in this particular field and the score for Star Trek - The Motion Picture is no exception.

The first group of dramatically-related themes are those associated with the Enterprise, and more indirectly, her crew and Starfleet. The Enterprise theme, a full tune in its own right, is first heard in the opening titles of the film, as the rousing Main Title march. For the purposes of analysis, the theme shall be divided up into its two major melodic components: Enterprise theme 1(i) (E1(i)), and Enterprise theme 1(ii) (E1(ii)) (see Figure 1).

[15] Roy M. Prendergast, Film Music: A Neglected Art (New York: W.W. Norton, 1977), p. 220.

E1(i)



E1(ii)

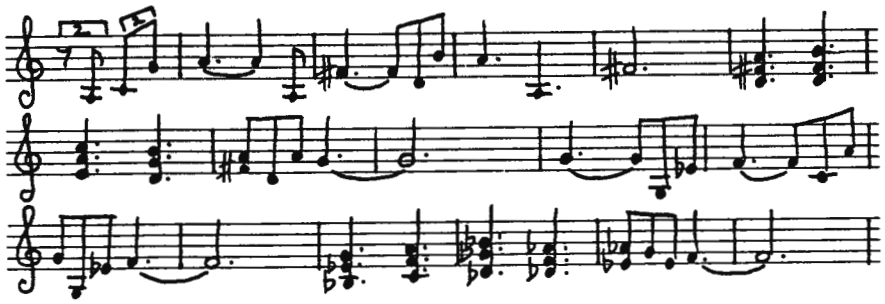
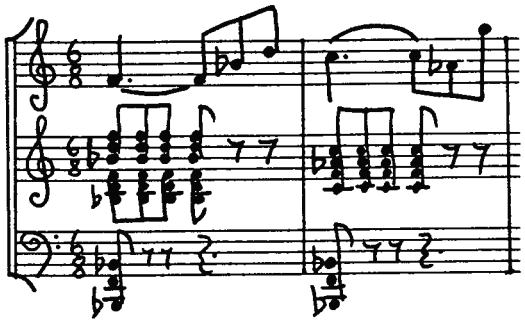


Figure 1. Enterprise Theme 1.

This theme re-appears in various guises throughout the score, accompanying those sections of the drama which concentrate specifically on the Enterprise or her crew.

Harmonically, the first two bars represent an important chordal relationship which recurs in numerous forms during the score. The transition of B-flat major in bar 1 to f minor in bar 2 (though played in this case over a B-flat pedal chord), can be thought of as a cadential figure consisting of major I going to minor V (see Example 1).

Example 1. Enterprise Theme 1(i), bars 1 and 2.



(All musical examples from the Star Trek score are written at concert pitch)

Another thematic figure also recurs in the score in scenes relating to the Enterprise or Starfleet. It is a brief oscillating quaver/semiquaver figure, featuring the downward intervallic leap of a third, first heard on the appearance of the Epsilon Nine station during the Klingon sequence at the beginning of the film. This motif has the necessary rhythmic momentum to form a good deal of tension in the score when it is required by the screen action. It shall be designated Enterprise theme 2 (see Figure 2).

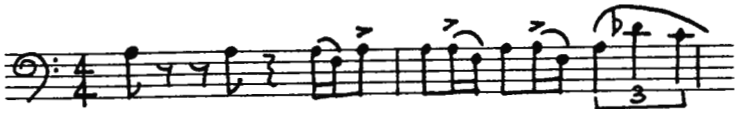


Figure 2. Enterprise Quaver/Semiquaver Figure (E2).

The next major theme is Ilia's theme, also known as the Star Trek love theme, referring to the relationship between Ilia and Decker. It also consists of a tune divided up into two sections, which shall be referred to as Ilia's theme (i) (I(i)) and Ilia's theme (ii) (I(ii)) (see Figure 3).

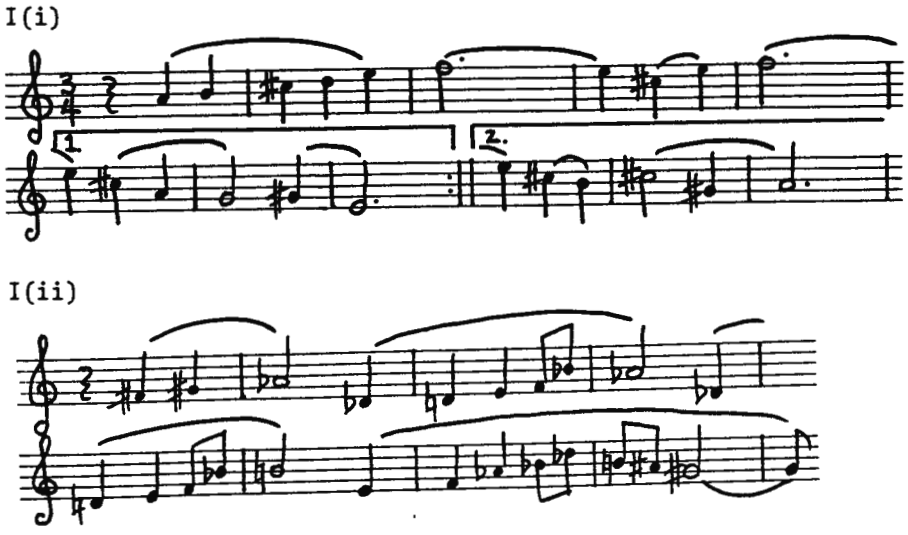


Figure 3. Ilia's Theme.

This theme plays a very important role in unifying certain aspects of the drama. It appears not only during romantic interludes between Ilia and Decker, but also in some of the V'ger sequences, in a darker more sinister guise (see Figure 7). This type of thematic transformation, another influence of Wagner and also Richard Strauss, relates to the psychological make-up of the screen characters, a concept which shall be discussed more fully later in this chapter.

The largest and most complex thematic group comprises those motifs pertaining to V'ger. This category shall be divided into five different themes or motif groups, some of which are interrelated.

The first theme of the V'ger group is not so much a signature tune but a signature sound and involves use of the beam. The beam does not play any particular repeated set of notes or particular melodic representation. Instead it either features prominently in the orchestral texture or is used on its own to accompany shots of the Cloud or some other aspect of V'ger, its growling unearthly sound suggesting to the listener both the alien presence of the intruder and a sense of enormous concealed power. Use of the beam shall be designated V'ger theme 1 (V1).

The second of the V'ger themes is made up of two distinct parts. The first half, which shall be referred to as V'ger theme 2(i) (V2(i)), consists of a repeated three-chord figure of which the outer two second-inversion minor triads are the same, with the middle chord, similar in structure, being pitched a semitone lower in all voices. The second half of the theme, which shall be labelled V'ger theme 2(ii) (V2(ii)), is a four-chord figure characterized by a minor V to major I perfect cadence (see Figure 4).

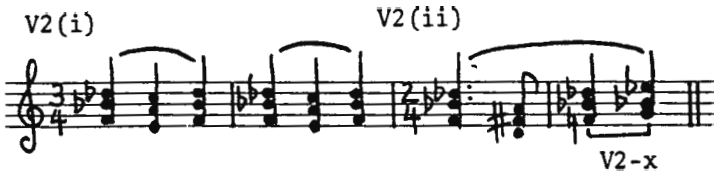


Figure 4. V'ger Theme 2.

So important are these last two chords within the structure of the score that they warrant mention as a thematic sub-group of their own. They form a motif which has both harmonic and melodic significance and appears most often in the rhythmic relationship of a short chord followed by a longer one. The harmonies of the chords however do not remain the same. Whilst always maintaining the interval of a rising tone in the upper notes of the chords, Goldsmith sometimes replaces the chordal figuration beneath. All chord motifs of this nature shall be referred to under the collective title of V'ger theme 2 - excerpt or V2-x (see Figure 5).

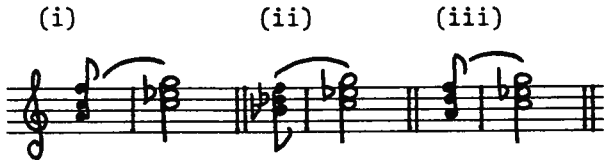


Figure 5. V'ger V2-x chords.

In V2-x(i), Goldsmith maintains the relationship of minor V to major I as it appears originally at the end of V2(ii), but reverses the order of the chords into a major I to minor V imperfect cadential relationship. V2-x(i) forms the basis of the passacaglia-like figure used in "The Meld," cue 30 near the end of the film.

Although order of the chords, i.e., major to minor or minor to major, may change as just illustrated, Goldsmith always keeps the harmonic relationship and rising interval between the highest notes of the chords constant.

Also played in a short-long configuration, the third of the V'ger themes, like the V2-x motifs, is a two-chord figure. The harmonies, however, are different to those in any of the V2-x combinations. Its opening chord is a minor triad with an added raised seventh on top. The root then drops a characteristic major third to form a root position minor chord with the top note of the second chord and the flattened third of the first chord remaining exactly the same due to enharmonic equivalence. This chordal motif shall be designated V'ger theme 3 (V3) (see Figure 6).

V3

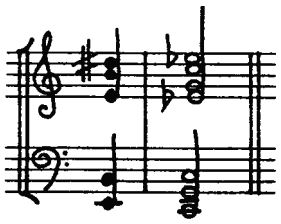


Figure 6. V'ger Theme 3.

As mentioned earlier, the fourth theme relating to V'ger is a transformation of Ilia's theme. This theme shall be referred to as V'ger's theme 4 or V4 (see Figure 7).

V4

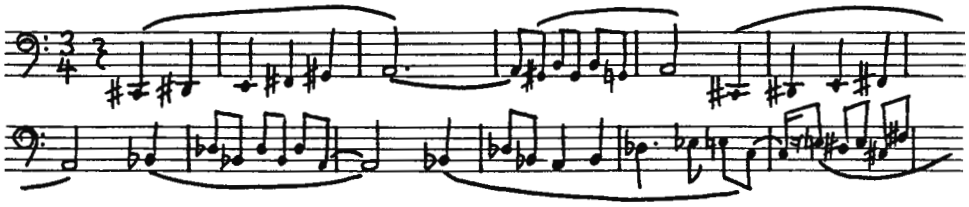
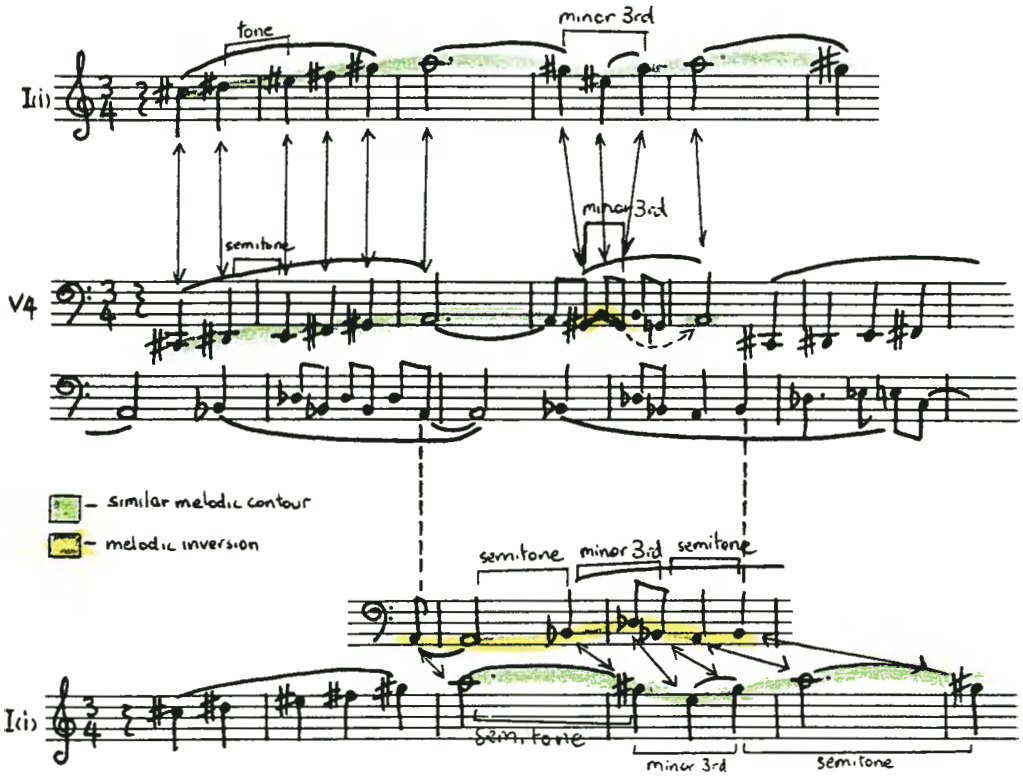


Figure 7. V'ger Theme 4.

From this theme, the most prominently-used portion is the characteristic rising six-note scale with which it opens (the first six notes of the harmonic minor scale). Certain of the intervallic relationships of the following notes can also be traced back to Ilia's theme (see Example 2). The note after the top note of the scale is a semitone lower as in I(i). This note forms the first of a three-note group which features, in I(i), the drop of a minor third before returning to the same note. In V4 however, Goldsmith inverts this figure, raising the central note a minor third before returning to the pitch of the first and rising a semitone to once again reach a long held note that acts as a "home" note, around which the melody line weaves.

Example 2. Comparison of I(i) and V4.



Bars nine and ten of V4 also form a perfect intervallic inversion of bars three, four and five of I(i) in a similar

manner to that just discussed. The note values in the two themes differ however (see Example 2).

This type of thematic inter-relation is expertly used by Goldsmith in unifying those elements of the drama which have some connection, in this case, the importance of Ilia within the framework of the V'ger concept and her relationship to Decker and the Enterprise crew. By creating the V4 theme from Ilia's theme, Goldsmith suggests musically the transformation of her character from flesh-and-blood to its more sinister robot double, while still maintaining the original musical link between the Deltan and her human lover. In a sense, he has found a way of tying the love aspect of Ilia and Decker's relationship into the larger structure of V'ger's relationship with mankind, - - two seemingly disparate aspects of the story which merge together eventually to form the climax of the film, where living machine and human, V'ger and its creator, join into one through Decker's love for Ilia.

The final but no less important V'ger theme, is the triplet quaver ostinato which is introduced when the Enterprise enters the Cloud for the first time. Exemplifying the concept of melodization of harmony, this motif consists of an arpeggiated form of a minor triad with an added raised seventh - - the first chord of theme V3. This triplet figure shall be referred to as V'ger theme 5 (V5) (see Figure 8).

V5

Figure 8. V'ger Theme 5.

The fourth thematic group on which the score is based, centres around the Vulcan, Mr Spock. Goldsmith devised for him a long theme played by the muted string section in octaves, employing no vibrato or dynamic changes and with each note bowed separately. In effect, these non-espressivo unisons, played without reference to a regular metrical beat, portray a sense of emotionless calm logic, a perfect musical representation of Spock's psychological make-up. This theme shall be designated Spock's theme 1 or S1 (see Figure 9).

S1

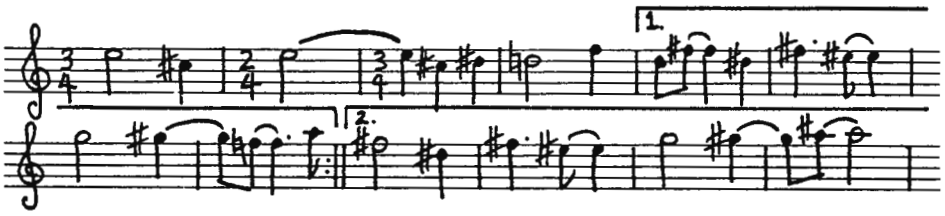


Figure 9. Spock's Theme 1.

Used whenever Spock senses V'ger's consciousness, the theme imbues the brief touching of minds with a certain mystique through its quasi-religious homophonic nature.

During the fourteenth cue in the score, "Spock's Arrival," where Spock unexpectedly re-joins the Enterprise crew, a short three-chord figure appears, first introduced by the two harps. This motif, quite jovial in character, underlines the reactions of the unsuspecting human crew as Spock first boards the ship. It does not appear anywhere else in the score, but for the purposes of analysis, shall be referred to as Spock's theme 2 (S2) (see Figure 10).

S2

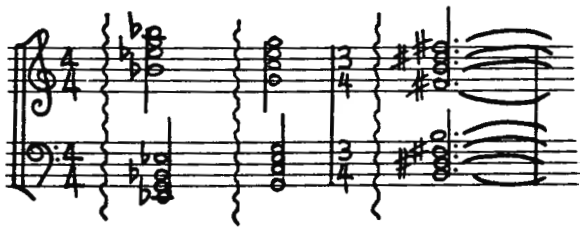


Figure 10. Spock's Theme 2.

Made up of only one theme, the fifth of the leitmotif groups is used for the Klingon battle scene at the beginning of the film. Consisting of a falling sequence of rising fifths, it is reminiscent of the cry of a battle horn, thus suiting very well the war-like nature of the Klingons and the scene in general. This theme shall be denoted by the term Klingon theme or the letter "K" (see Figure 11).

K

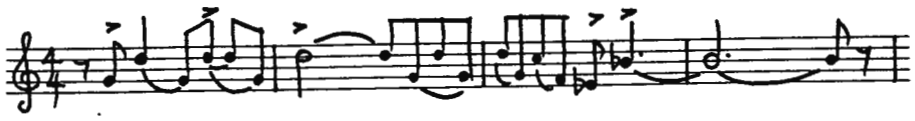


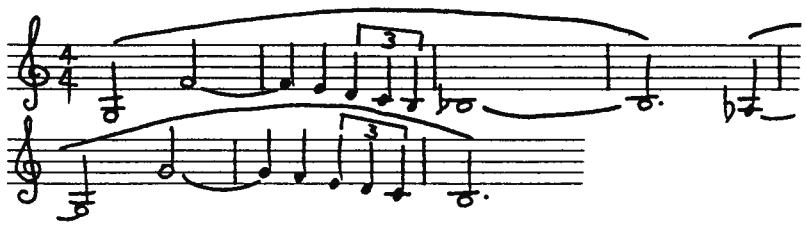
Figure 11. Klingon Theme.

As with motif S2, the Klingon theme appears in only one cue in the entire score.

The sixth and final thematic group is that derived from the main title of the Star Trek television series. Originally written by Alexander Courage, the decision to include references to it in the score for Star Trek - The Motion Picture came from producer Gene Roddenberry and director Robert Wise. Goldsmith was not at all happy about having to include it in the score and so left it

to Courage, who is also a close friend and orchestrator of Goldsmith's, to arrange it. Wise decided to add it discreetly under the Captain's Logs, where it would be as inconspicuous as possible.[16] It consists of two eight-bar sections, the first half of which shall be referred to as Television theme (i), or TV(i), and the second half, Television theme (ii), or TV(ii) (see Figure 12).

TV(i)



TV(ii)

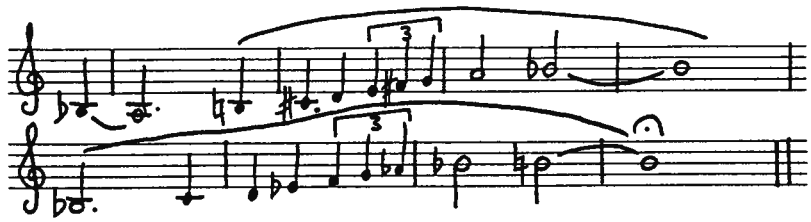


Figure 12. Television Series Theme.

Essentially repetition of the same material, this theme appears three times in the score, as cues 11, 15 and 22. In cue 11 (scene 121), it only appears as TV(i), but in the latter cues, it exists in its full form: TV(i) and (ii), both times.

For the purposes of the following analysis, the larger cues will be broken down into table form using the appropriate symbolic representations for each theme. This format will facilitate an easier over-all view of Goldsmith's use of the themes and their development.

[16] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, pp. 1476-78.

I. Cue 1 (1-1) - "Main Title"

The opening cue of the film is the "Main Title" march, based solely on the Enterprise themes: E1(i) and E1(ii). With no necessary synchronization points other than the opening and closing of the piece (which must coincide with the beginning and end of the title sequence), Goldsmith is granted a freedom of formal structure that does not present itself again until the end titles of the film. He organizes his use of the themes into a compound ternary structure, i.e., a, b, a', b', a'' (see Table 1 below). The loud fanfare-like character of the "Main Title" sets the mood for what is to follow - - a sweeping action-packed space adventure.

TABLE 1

CUE 1 (1-1) - "MAIN TITLE" - THEMATIC BREAKDOWN

1.	Introduction - E1(i) fragments - strings
2.	E1(i) x 2 - trumpets
3.	E1(ii) x 2 - horns/violas
4.	E1(i) - trumpets
5.	E1(ii) x 2 - strings
6.	E1(i) - strings/trumpets

II. Cue 2 (2-1) - "Klingons"

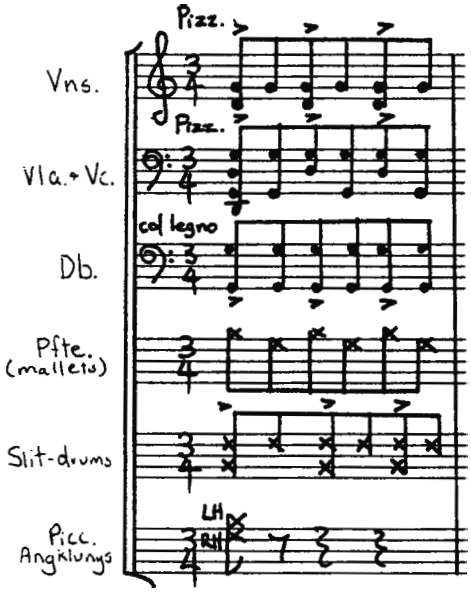
Following segue with a cue overlap, whereby the end of the first cue and the start of the next are mixed together by the recording engineer,[17] the Klingon battle sequence begins with a

[17] Earle Hagen, Scoring for Films: A Complete Text (New York: Criterion Music Corp, 1971), p. 125.

shot of the Cloud accompanied by a sustained string chord (the last chord of cue 1 which is gradually faded out), notes on the water-phone, overtone clusters on the beam and rumblings from the thunder sheet.

As the Klingon battle cruisers come into view on the screen, Goldsmith starts a relentless quaver ostinato of accented string pizzicato and double bass col-legno bow strokes. To this is added the sound of the large and medium slit-drums hit with super balls, combined with the peculiar timbre produced by mallets hitting the metallic frame inside the grand piano. This texture is punctuated by sharp taps on the piccolo angklungs, played by a percussionist holding at least three or four in each hand (see Example 3(a)).

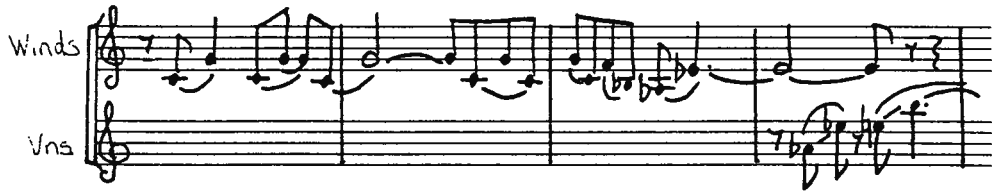
Example 3(a). "Klingons," bar 1.



Over the rhythmic drive of this quaver ostinato, the Klingon motif (K) is first introduced, played by oboes, cor anglais,

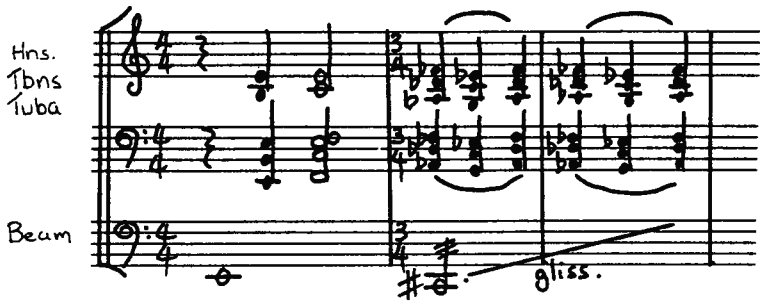
bassoons and tenor saxophone in unison. This motif is reiterated many times during the cue, usually whenever a Klingon ship features prominently in the screen action. Each time theme K appears, the orchestration is varied slightly building to a full brass rendition of the motif when only the Flagship of the Klingon fleet remains to battle the Cloud (see Table 2, section 11). Occasionally a statement of the motif is accompanied by fragmentary interjections of the opening interval of a perfect fifth (see Example 3(b)).

Example 3(b). "Klingons" excerpt.



First use of the V2(i) motif in the score appears in this cue, played by horns, trombones and tubas (see Example 3(c)).

Example 3(c). "Klingons" excerpt.



As stated earlier in the chapter, the Enterprise quaver/semiquaver figure (E2) is also introduced during this cue, whenever the Epsilon Nine station features on-screen.

Goldsmith employs use of some very avante-garde orchestral textural effects to underscore such events as energy bolts bursting from the Cloud. To achieve this hysterically busy orchestral sound, he uses a combination of techniques. Section 10 of Table 2 represents an excellent example. The woodwinds are instructed to play rapid sextuplets on the highest note on the instrument. The brass players reverse their mouthpieces and blow air through their instruments while clicking the keys as rapidly as possible. High note-clusters are featured in the harps, combined with the strings sounding their highest notes. To this texture, Goldsmith adds the sound of the beam bowed across its bridge, water chimes and waterphones, as well as two synthesizers: the OBX and the Serge, playing programmed effects and filtered white sound. Of the resulting cacophony of sound, it could be said that a more appropriate sound image would be difficult to imagine.

TABLE 2

CUE 2 (1-2) - "KLINGONS" - THEMATIC BREAKDOWN

1. V1 (beam)
2. Quaver ostinato - strings; K x 2 - winds; K fragments - winds
3. V1 (beam) + V3/V2(i) - lower brass
4. Quaver ostinato - strings; K - muted horns/trumpets
5. Quaver ostinato; K (augmented) - tubas; K - horns/trumpets
6. Quaver ostinato; K fragments - trumpets/winds
7. V1 (beam) + miscellaneous orchestral texture
8. E2 - violas/celli
9. (K - winds + K fragments - strings) x 2; V2(i) - horns

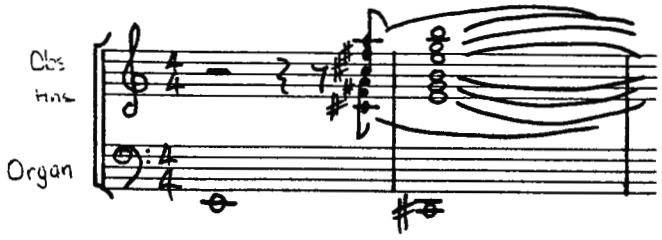
10. Miscellaneous orchestral texture; K fragments - trumpets; V1 (beam)
11. K - full brass
12. Bridge passage - repeated quaver ostinato
13. K fragments - horns/trombones/tuba over miscellaneous orchestral texture (including V1 - beam)
14. E2 - celli/bassi
15. V3 - full orchestra (including V1 - beam)

III. Cue 3 (28-R) - "Total Logic"

Following the film's second cue with only the slightest break, this particular cue underscores the scenes of Mr Spock on Vulcan, about to undergo the Kolinahr discipline before his Masters. Its purpose is to purge him of all human emotion. However, Spock senses V'ger's consciousness reaching out to the human part of his mind. He shuns the discipline and decides to re-join the Enterprise crew, in order to learn more about V'ger. The scene then changes from the planet Vulcan to Starfleet headquarters on Earth, where Admiral Kirk makes final preparations to leave for the Enterprise.

Beginning with a very dark orchestral texture, the cue's opening is made up of low note-clusters from both harps (one playing all naturals and the other all flats) and the two pianos (with one pianist striking the lowest strings with a bass drum stick), tremolos from the low angklungs and rumblings from the thunder sheet. Goldsmith interrupts this texture when Spock suddenly gazes up at the heavens, his meditation clouded by something unseen. It is revealed later in the scene that he sensed V'ger's consciousness at this moment, an event underlined as it happened by use of the beam and the chordal motif V2-x(iii) (see Example 4(a)).

Example 4(a). "Total Logic" excerpt.



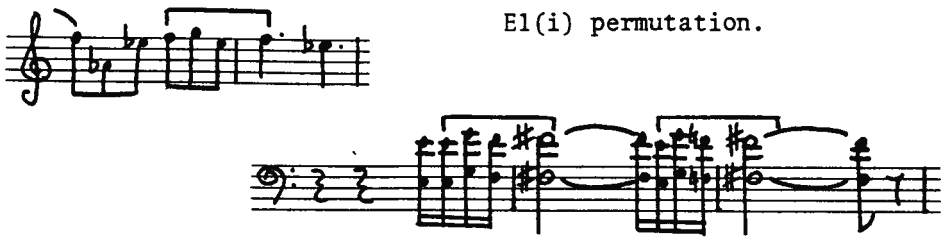
This is an excellent example of Goldsmith's ability to depict, through use of leitmotifs, the emotional and psychological aspects of a character in scenes with no dialogue or neutral facial expressions. Spock's theme S1 is introduced in this cue as the Vulcan approaches the ritual ground where his Masters shall grant him the attainment of Kolinahr. Unison strings are accompanied by low angklung tremolo, piano and harp clusters and the reverberant knocks of super balls on slit-drums similar to the opening of the cue. This accompaniment, with its strange subdued percussion sounds, conjures up mental images of and associations with non-Western traditional native rituals, providing an effective back-drop for this ancient alien ceremony.

V'ger invades Spock's mind once again as he kneels before the High Master T'sai. Goldsmith punctuates this event in a similar manner to before with the beam and chord motif V2-x(iii).

During the repeat of S1 which follows, a four-note figure is introduced as a small rhythmic counter-motif to the more sustained line of Spock's theme. Played in octaves by the clarinets, bassoons, CS-80 synthesizer and flutter-tongued flute, this figure reveals itself as a permutation of the intervallic relationships in bars 4 and 5 of the Enterprise theme 1(i) (see Example 4(b)).

Example 4(b).

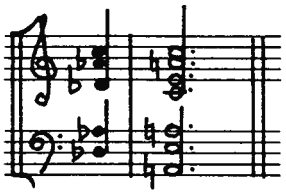
4(b)(i): E1(i), bars 4-5. 4(b)(ii): "Total Logic" excerpt, E1(i) permutation.

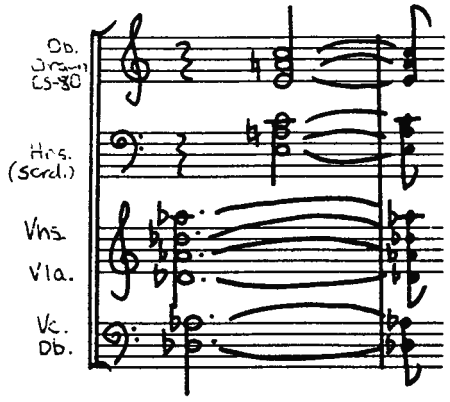


A reiterated chordal figure comprised of a superimposition of the two chords constituting the V3 motif accompanies the end of the Vulcan scene (see Example 4(c)).

Example 4(c).

4(c)(i): V3 chords. 4(c)(ii): "Total Logic" excerpt, V3 chord combination.





The two superimposed chords are contrasted by different orchestration: the d-flat sforzando chord played by the string section, while the instrumentation of the a-minor triad comprises oboes, organ, CS-80 synthesizer and muted horns.

Reprisal of the Enterprise themes 1(i) and 1(ii) accompanies the scene change to Starfleet's San Francisco headquarters. As Kirk's airtram lands, Goldsmith weaves the score from both full and fragmented statements of E1(i) and E1(ii). The music climaxes

into a full brass rendition of E1(i) as the camera zooms into a close-up of the Admiral's face (see Example 4(d)).

Example 4(d). "Total Logic" excerpt.

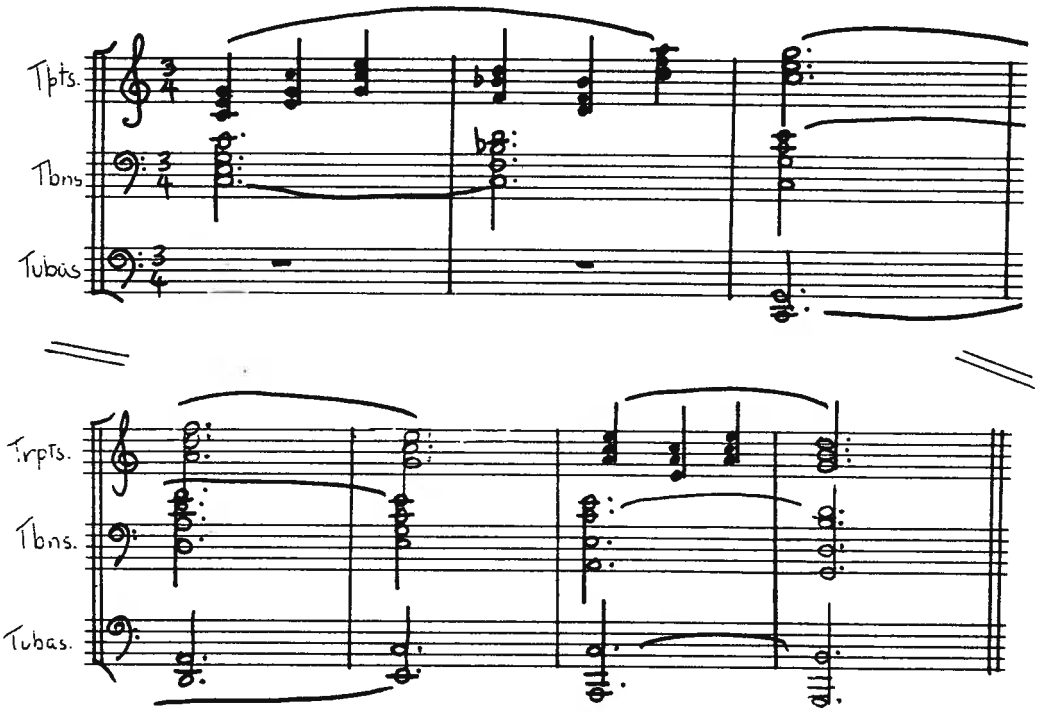


TABLE 3

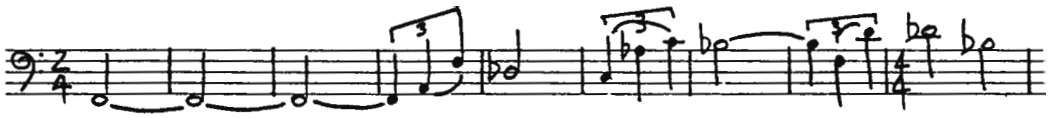
CUE 3 (28-R) - "TOTAL LOGIC" - THEMATIC BREAKDOWN

1. V1(beam) + V2-x(iii) - organ/oboes/horns
2. S1 x 2 - strings
3. V1(beam) + V2-x(iii) - organ/oboes/horns
4. S1 x 2 - strings
5. V3 combination (see Example 4(c)) - strings/winds
6. E1(i) - trumpets
7. E1(ii) fragments - strings/winds; E1(i) fragment - horns; E1(ii) fragments - strings/winds
8. E1(i) - full brass
9. E2 fragments - strings

IV. Cue 4 (38) - "Floating Office"

Scene 38 opens with an exterior view of the Centroplex space station which houses the administration of Starfleet's orbital dockyard, high above the earth. Beneath fluttering wind and string figurations, Goldsmith writes a long meandering tune in the 'celli, featuring a similar melodic contour in bars 6, 7, 8 and 9, to that of the first three bars of E1(i) (see Example 5).

Example 5. "Floating Office" excerpt.



The violins then take over the melodic interest in a tune distinguished by the leap of a sixth. This intervallic jump, characteristically occurring over two notes of relatively small rhythmic value, is a reference to the similarly-contoured melodic leap in bar two of E1(i).

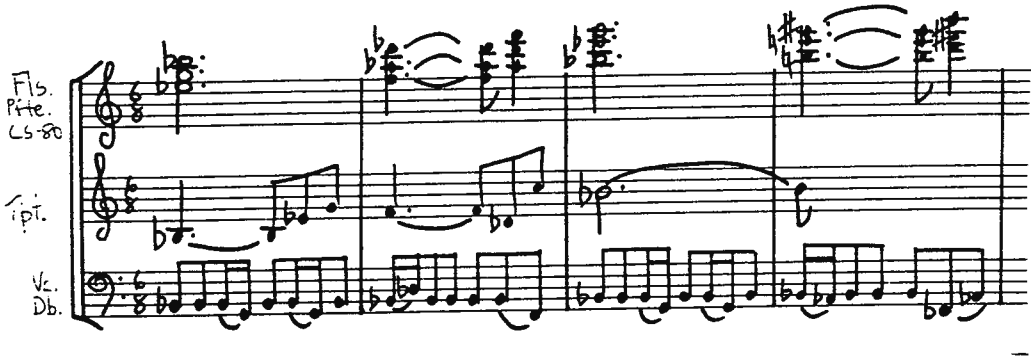
V. Cue 5 (40BR) - "The Enterprise"

When faced with the task of creating a particularly long piece of music, such as the five minutes and fifty-six seconds required for this cue (the sequence where Engineer Scott shuttles Admiral Kirk to the Enterprise while it awaits in orbital dry-dock), Goldsmith approaches the problem from a symphonic viewpoint. Taking the Enterprise theme and the Enterprise oscillating quaver/ semiquaver figure as his basic material, he produces a totally integrated piece of symphonic music. Varying the themes to suit

the character of the visual images, he expertly manages to maintain musical interest and momentum in a scene containing little dialogue and sparse sound effects.

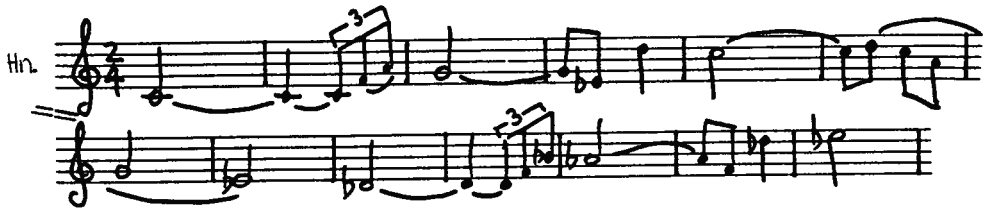
The cue opens with the E2 figure in the lower strings. This forms a rhythmic accompaniment for the solo trumpet which plays the first three bars of E1(i) (see Example 6(a)).

Example 6(a). "The Enterprise" excerpt.



A plaintive horn solo, also based on E1(i), soon follows, accompanied quietly by harp and string tremolo (see Example 6(b)).

Example 6(b). "The Enterprise" excerpt.

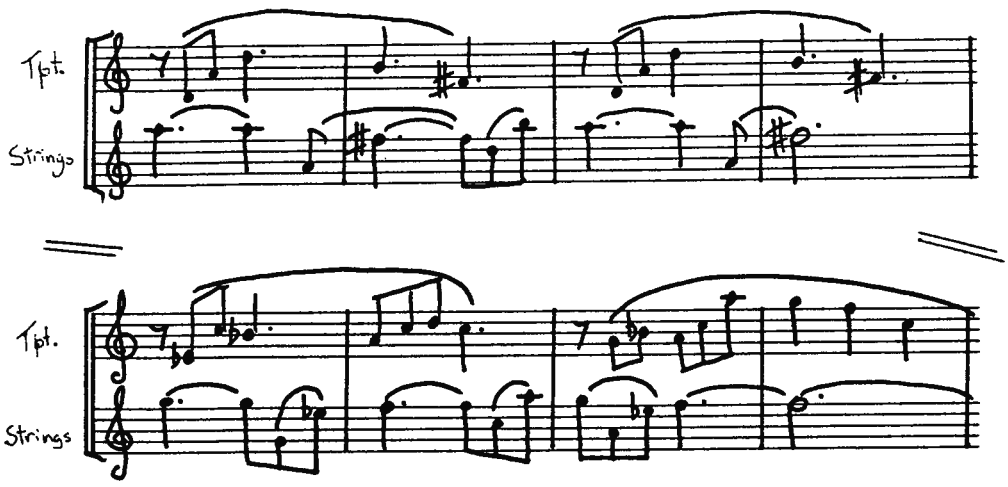


One of the loveliest variations of the Enterprise theme accompanies shots of the tiny shuttle moving slowly about the huge starship's graceful form. Played by the 'celli, E1(i) is accompanied by shimmering string tremolo (see Example 6(c)(i)). Taking over for the second section of the theme E1(ii), the violins

are accompanied by woodwinds, harps and a flowing counter-melody in the violas (see Example 6(c)(ii)). The effect is very pastoral, imbuing the scene with a sense of peace and calm as Kirk gazes upon his ship for the first time since returning to Earth over two and a half years ago. In this guise the theme is almost transformed into a love theme, expressing the bond between Kirk and his beloved Enterprise.

When Kirk finally sees a view of the newly re-furbished Enterprise head-on, the music surges into a full-orchestral rendition of the Enterprise theme. A counter-melody is played by a solo trumpet as the strings take up E1(ii) (see Example 6(d)).

Example 6(d). "The Enterprise" excerpt.



Towards the end of the cue, the Enterprise quaver/semiquaver figure becomes increasingly more prominent, forming a treble accompaniment to a sweeping version of E1(i) in the violins (see Example 6(e)), before being adopted by the whole orchestra for a triumphant finish.

Example 6(e). "The Enterprise" excerpt.

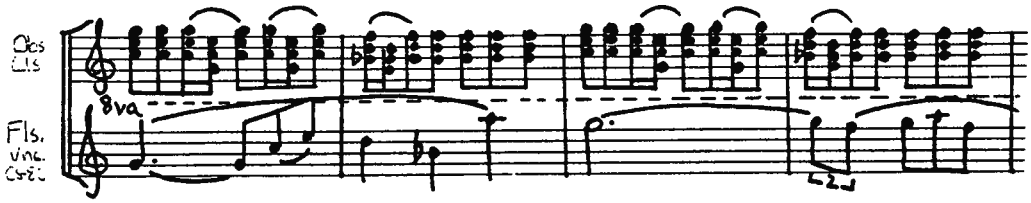
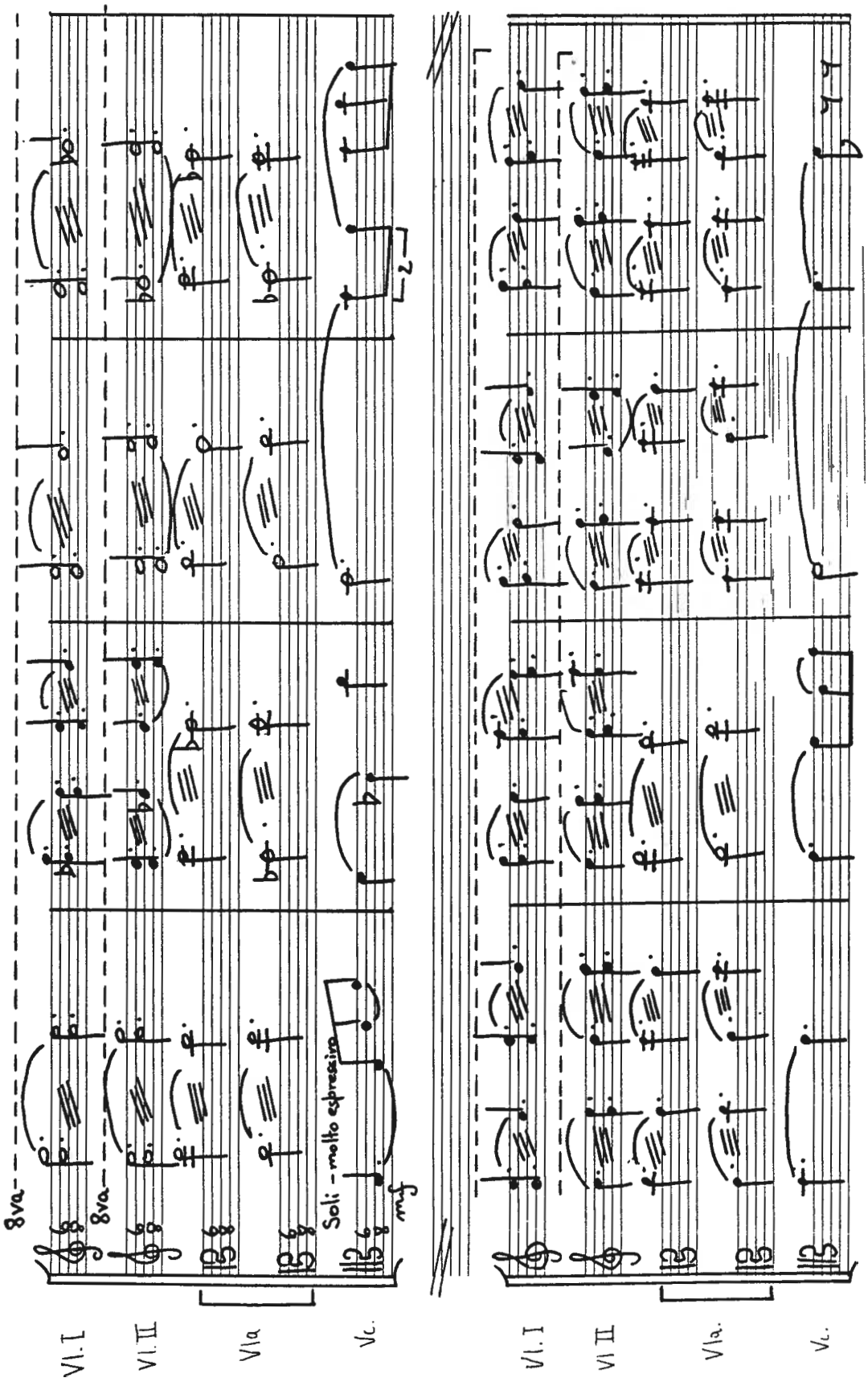


TABLE 4

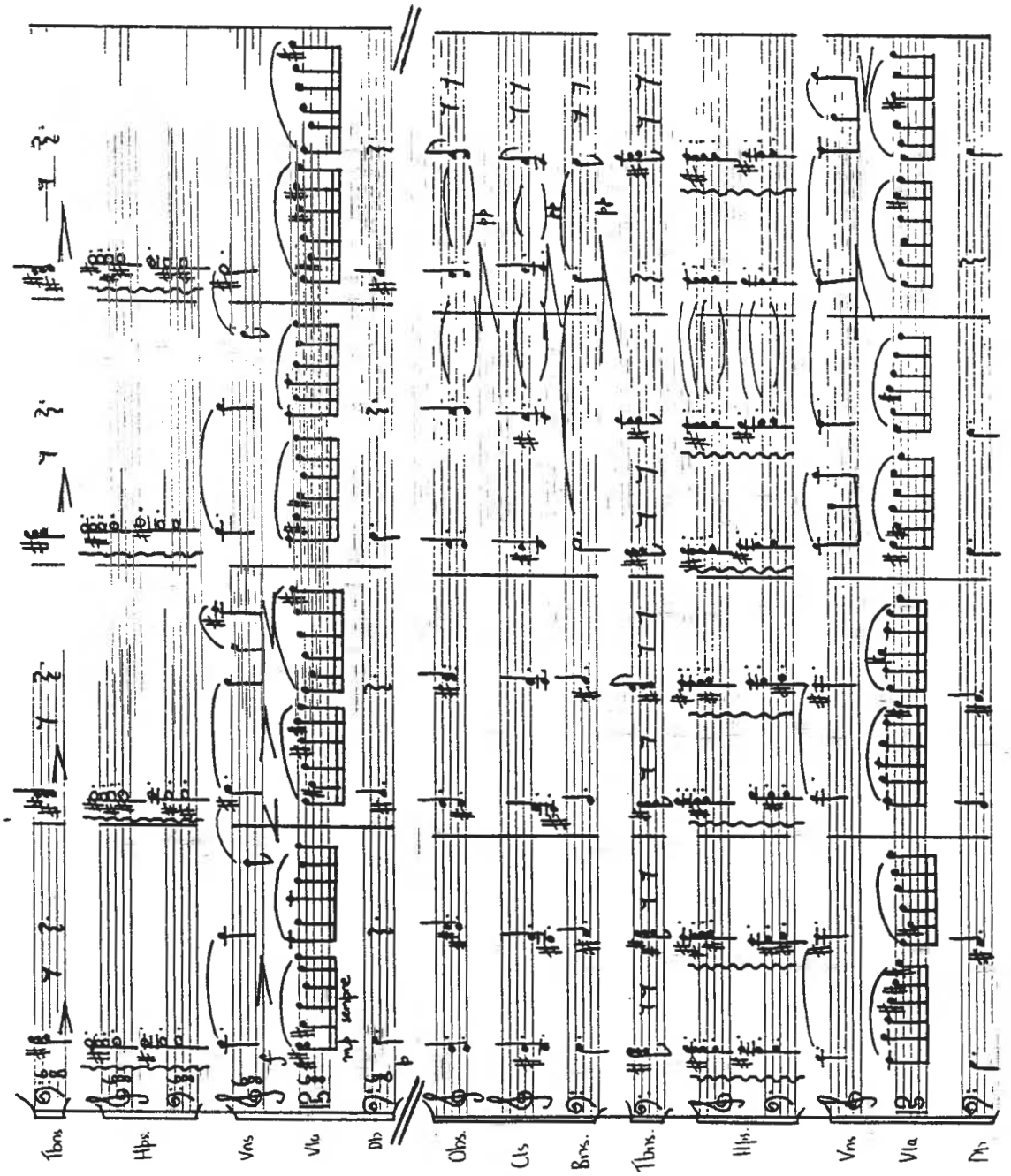
CUE 5 (40BR) - "THE ENTERPRISE" - THEMATIC BREAKDOWN

1.	E2 - lower strings; E1(i) - trumpet solo; E1(i) fragments - horn; E1(i) fragments - violins
2.	E1(i) - solo horn; E2 accompaniment
3.	Miscellaneous - trumpet solo
4.	E1(i) x 2 - 'celli solo
5.	E1(ii) x 2 - violins
6.	Miscellaneous - E-flat clarinet solo
7.	E1(i) fragments - violins; brass counter-melody
8.	E1(i) - violins
9.	Full Orchestra - E1(i) x 2 - trumpets; E2 accompaniment
10.	Full Orchestra - E1(ii) x 2 - strings; solo trumpet obbligato
11.	Bridge passage - E2 accompaniment
12.	E1(i) fragments - violins; brass counter-melody
13.	E1(i) - violins; E2 accompaniment in oboes and clarinets
14.	E1(ii) x 2 - violins/horns; E2 in percussion
15.	E2 - full orchestra

Example 6(c)(i). "The Enterprise" excerpt.



Example 6(c)(ii). "The Enterprise" excerpt.



Cue 6 (77) - "Malfunction"

Scene 77 is set in the Enterprise's transporter room, where the newly re-designed teleport system malfunctions, causing the deaths of the Science Officer and Navigator. The tone of the scene is one of remorse, for these sudden and violent deaths cast a shadow of gloom over Admiral Kirk's inspection tour of the new ship. Goldsmith uses fragmentary statements of E1(i), based on the intervals of a perfect fourth followed by a major third as found in the first bar of the Enterprise theme 1(i). (See Example 8 in Chapter 4 for the corresponding musical excerpt.)

VII.

Cue 7 (85) - "Goodbye Klingons" (Adapted by Fred Steiner)

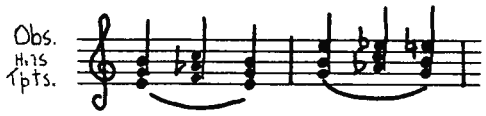
Adapted by Fred Steiner from Goldsmith's original material, this cue opens scene 85, set on the Enterprise's recreation deck. Here the ship's crew watch a huge monitor on which a visual replay of the Klingon fleet's destruction, recorded by Epsilon Nine is screened. Opening with a tone on the beam as the Cloud engulfs the Klingon flagship, the brass enter menacingly with a repeated statement of the chordal motif V2-x(ii) (see Example 7(a)).

Example 7(a). "Goodbye Klingons" excerpt.

These chords crescendo into a two-bar statement of the V2(i) chords as the monitor screen fades. In the first bar of this pair however, the figure is inverted; the centre chord rising up a semitone. Following this is a version of the three-chord figure

with the melodic contour of the upper line remaining true to the original, but the harmony of the middle chord changed (see Example 7(b)).

Example 7(b). "Goodbye Klingons" excerpt.



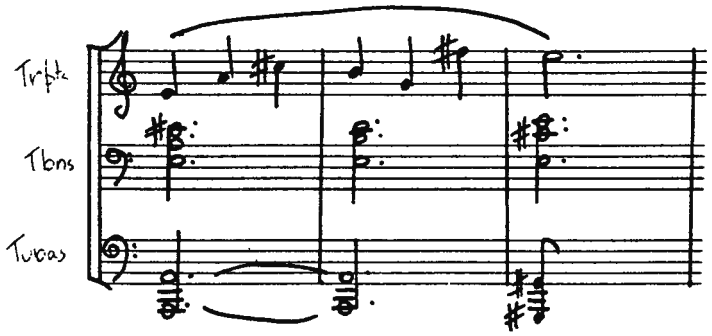
VIII. Cue 8 (92) - "Goodbye Epsilon Nine" (Adapted by Fred Steiner)

Also adapted by Fred Steiner from Goldsmith's themes, this following cue underscores the destruction of the Epsilon Nine station by the Cloud, as witnessed by the Enterprise crew in a live transmission to the ship's recreation deck. As with cue 7, the piece features use of the beam and permutations of the V2 and V2-x chords. It concludes with a violent chord employing the combined forces of the orchestra and the beam, synchronized with a shot of the Cloud.

IX. Cue 9 (93-R) - "Pre-launch Countdown" (Adapted by Fred Steiner)

Providing tension for the preparations to the ship's launch, the Enterprise quaver/semiquaver figure E2, played in the lower strings and percussion, opens this piece also re-written by Steiner. As the camera cuts from the crew leaving the recreation deck to a head-on shot of the Enterprise in dry-dock, the first seven notes of E1(i) are heard in the trumpet (see Example 8), the last note of which gradually fades out together with the E2 figure.

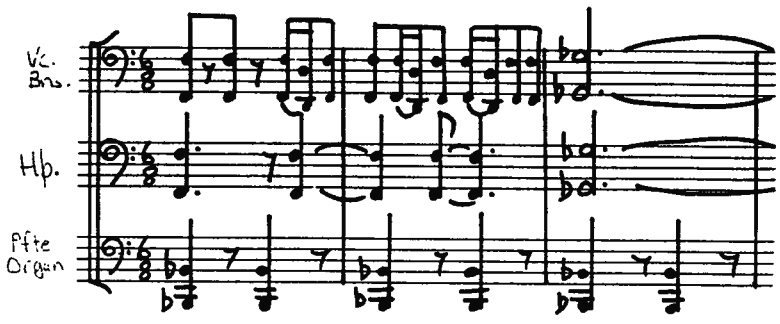
Example 8. "Pre-launch Countdown" excerpt.



X. Cue 10 (95-R) - "Leaving Dry-dock"

Based entirely on material from Enterprise themes E1 and E2, "Leaving Dry-dock" provides a suitably exciting and noble accompaniment to the sequence where the Enterprise leaves the orbital dock-yard to rendezvous with the Cloud. Above a constant two-in-the-bar pulse from the pianos, organ, harp and bass drum, the 'celli and bassoons enter with the oscillating quaver/semiquaver E2 figure, compressed into 6/8 rhythm (see Example 9(a)).

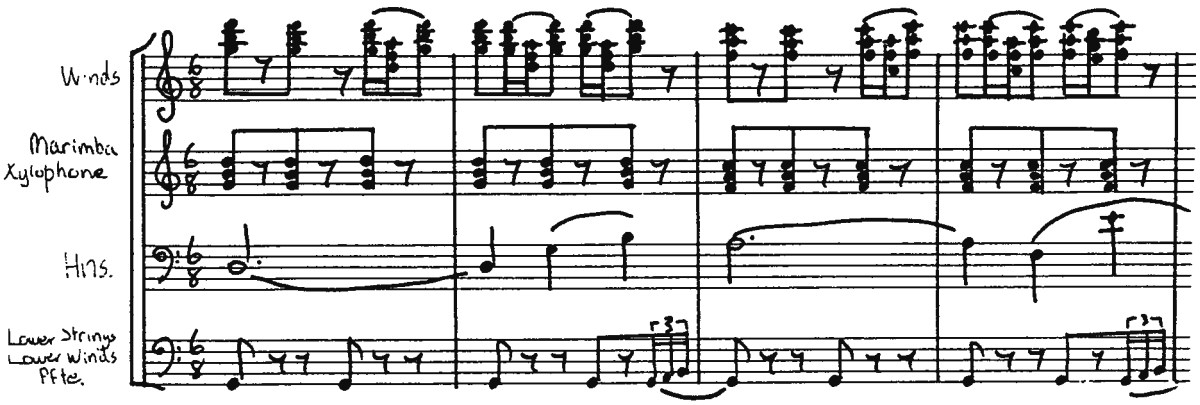
Example 9(a). "Leaving Dry-dock" excerpt.



The E2 figure then moves up into the treble register to become an accompanying figure in the flutes and oboes for E1(i), the first seven notes of which appear in the horns. Goldsmith

also employs a cross-rhythmic pulse in this section where the lower strings, bassoons and contrabassoon, second piano and timpani play an accented two-dotted-crotchet-beats-per-bar pulse against a three-crotchet pulse in the marimba and xylophone (see Example 9(b)).

Example 9(b). "Leaving Dry-dock" excerpt.



The composer changes between themes depending on changes in the visual material. In most cases, exterior shots of the Enterprise in flight are accompanied by references to theme E1, while the E2 rhythmic figure is generally reserved for shots of the crew, feverishly monitoring their respective stations as the mission begins (see Table 5).

TABLE 5

CUE 10 (95-R) - "LEAVING DRY-DOCK" - THEMATIC BREAKDOWN

1. E2 - different orchestral groups such as celli/bassoons; violins/oboes/harp
2. E1(i) fragment - horns
3. E2 - lower strings
4. Full Orchestra - E1(i) x 2 in trumpets; Accompaniment - E2 fragments

5. Full orchestra - E1(ii) x 2 in horns/CS 80/violins;
   Accompaniment - E2 fragments
6. E2 - lower strings
7. Full Orchestra - E1(i) - violins
8. E2 - violins
9. E1(i) fragment - trumpets
10. E2 - strings/woodwinds
11. E1(i) fragment - horns
12. Full Orchestra - E1(i) fragments in strings; E2 accompaniment

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XI. Cue 11 (121) - "Television Theme" (Written by Alexander Courage)

As Admiral Kirk records the first of the mission's Starlogs, reference is made to the television series theme music. Written by Alexander Courage, this cue consists of only the first eight bars of the theme TV(i) played by vibraphone, cor anglais, clarinet and flute in octaves.

XII. Cue 12 (125) - "Warp Point Eight" (Adapted by Fred Steiner)

The fourth of the cues adapted by Fred Steiner is based almost entirely on the E2 quaver/semiquaver figure. It accompanies the first attempt by the crew to boost the Enterprise's new untested engines into warp drive. A brief reference to E1(i) sounds in the trumpet as the starship disappears into hyperspace but the E2 rhythmic figure pulses uneasily beneath in a minor key, suggesting that all is not well.

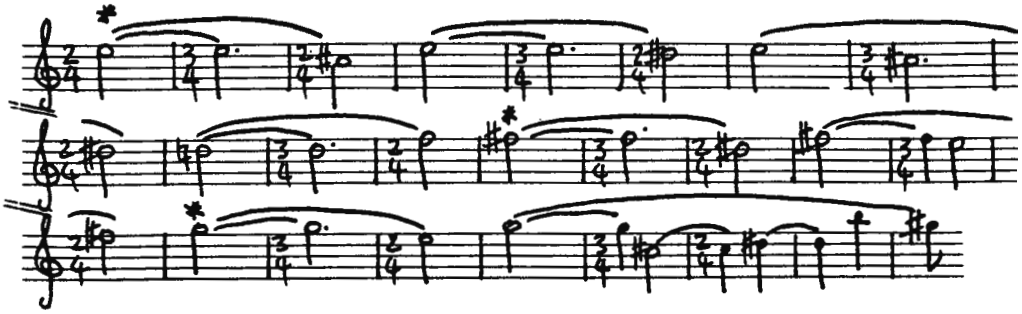
XIII. Cue 13 (143-R) - "No Goodbyes"

After being reprimanded by Admiral Kirk for countermanding an order and overstepping his authority, Captain Decker meets Ilia in a corridor outside Kirk's quarters. Alone for the first time since boarding the Enterprise, they talk briefly of the past, Decker apologizing for running out on her on Delta Four. Goldsmith introduces the love theme (Ilia's theme) in this cue, first with a statement of I(i) in the solo oboe, then I(ii) in the solo horn, with a triplet quaver counter-melody in the violas. I(i) is re-stated to close the piece. Accompanied by a velvety string texture, the cue has a certain introspective quality, expressing the melancholy borne of lost love.

XIV. Cue 14 (144-AR) - "Spock's Arrival"

Opening with a quiet melody from the 'cello section which accompanies a shot of Admiral Kirk reflecting on the hostile words just exchanged between himself, Captain Decker and Doctor McCoy, this cue underscores Spock's unexpected arrival and re-joining of the crew. As Spock's shuttle Surak cruises into view preparing to dock with the Enterprise, Goldsmith re-introduces Spock's theme S1. Doubled in the electric piano, piccolo, bassoon and cimbalon across four octaves, the texture of the melody over each major harmony change is sharpened by a tone from the rub rod, which plays in unison with the piccolo (see Example 10(a)).

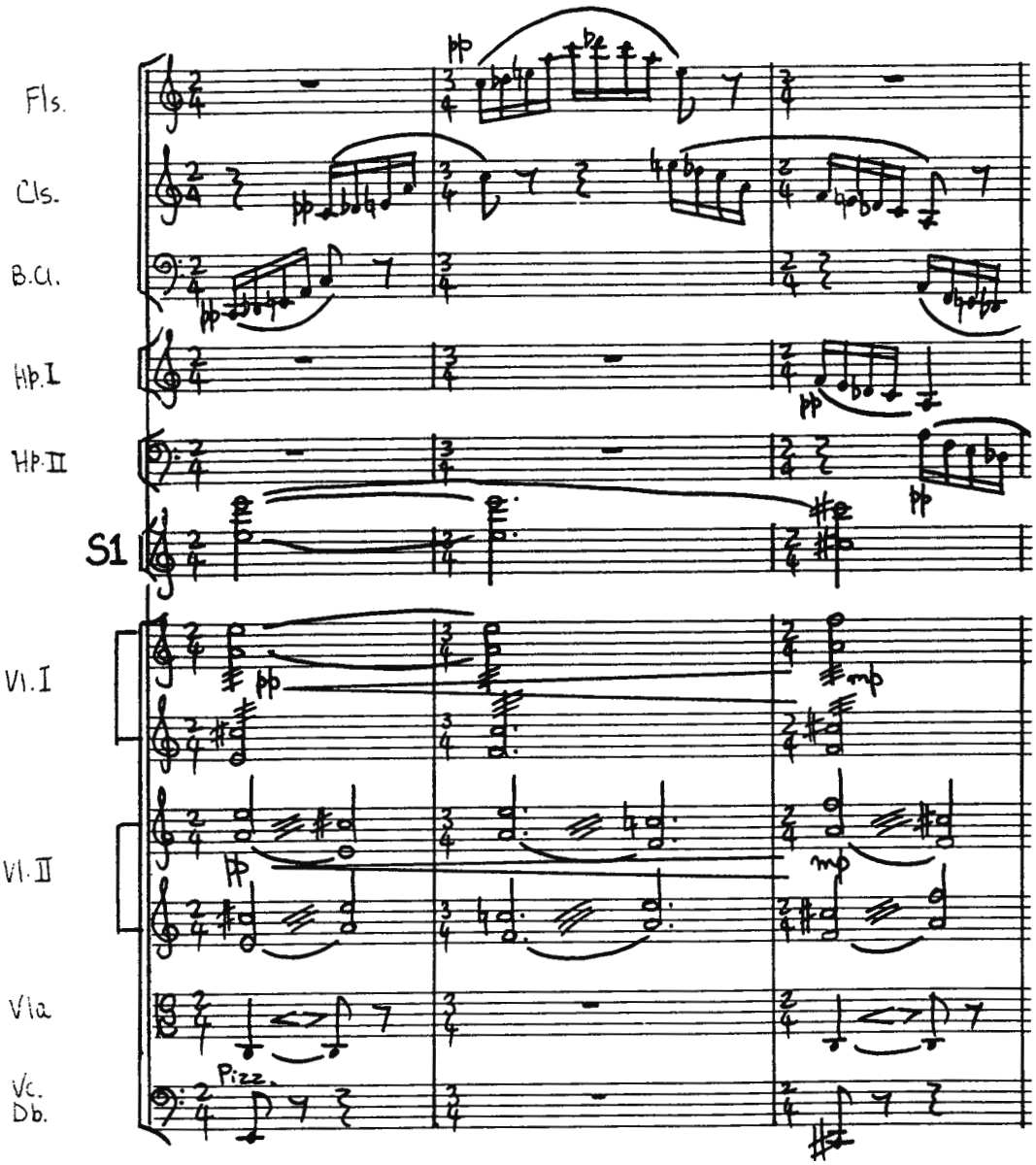
Example 10(a). "Spock's Arrival" excerpt.



* rub rod note

This theme is disguised in a filigree of fluttering interweaving woodwind patterns and muted string tremolos (see Example 10(b)).

Example 10(b). "Spock's Arrival" excerpt.

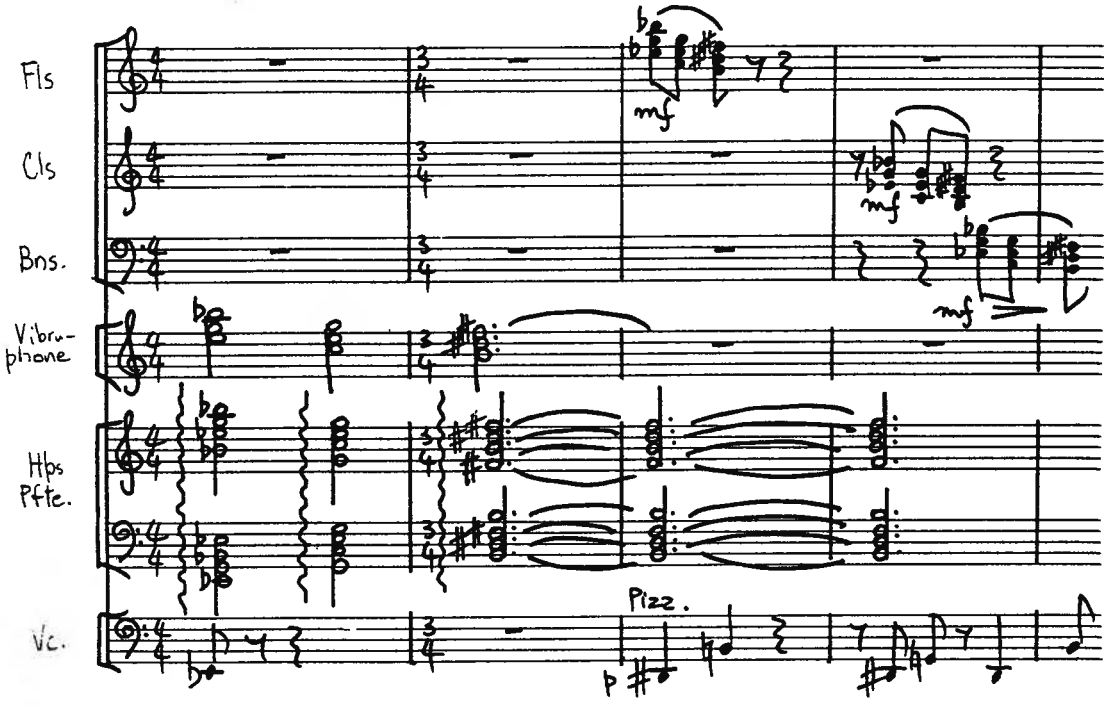


When S1 is re-stated, its texture is thickened by the addition of divisi violins, basses and the two harps playing in octaves.

Goldsmith introduces the three-chord motif S2 as Spock first boards the Enterprise and is greeted by Lieutenant Chekov. Similarly, when he steps onto the bridge, much to the disbelief and amazement of the crew, S2 re-appears, this time with the violins accompanying the harps and electric piano, followed by short interjections of the motif on the CS-80 synthesizer.

In both cases, Goldsmith compresses the theme rhythmically after its initial statement, moving it as a triple-voiced triadic motif through different instrumental choirs (see Example 10(c)).

Example 10(c). "Spock's Arrival" excerpt.



The cue closes with a reference to E1(i) (its first four notes) in a chorale-like treatment played by the strings.

XV. Cue 15 (152) - "Television Theme" (Written by Alexander Courage)

Admiral Kirk's second Captain's log is chronologically placed after "Spock's Arrival." Like the first one, this log is accompanied by an arrangement of the television series theme adapted by Alexander Courage. It is exactly the same as cue 11 except that it also makes use of the second half of the theme TV(ii), the melody continuing in the same instruments as in TV(i).

XVI. Cue 16 (155) - "Warp Point Nine" (Adapted by Fred Steiner)

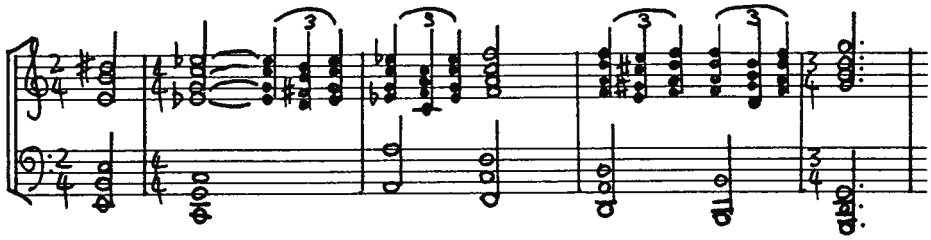
This cue, the fifth adapted by Fred Steiner, stands as the film's only cue from which material was edited out in the final mix. With the first twenty-five bars removed, the music begins as the Enterprise surges into warp drive, her engines successfully repaired with Mr Spock's assistance. It consists of triumphant fragments of E1(i) in the brass followed by string unison treatment of the oscillating quaver/semiquaver figure E2. The last major thematic reference concerns the first seven notes of E1(i) played by the winds.

XVII. Cue 17 (7-1) - "Meet V'ger" (Adapted by Fred Steiner)

As the Enterprise reaches the Cloud's boundary, the V'ger themes are gradually introduced in full into the score. In this cue, another of Steiner's adaptations, the motifs V1, V2 and V3 appear in various forms. The first shot of the Cloud is punctuated by the harsh tones of the beam playing in unison with the organ pedal. This note, a low "e," provides the bass for the first

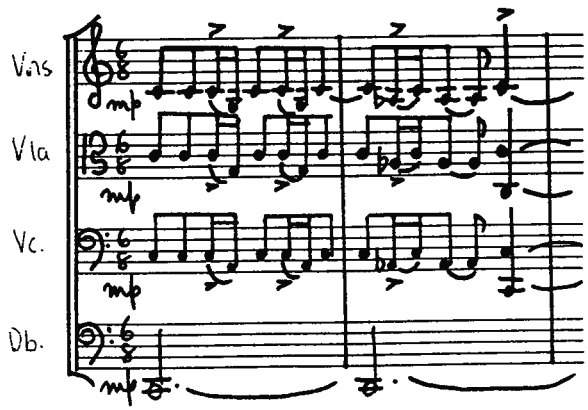
chord of the V3 motif which is played by the full orchestra using the same chords as in Figure 6 earlier in the chapter. These same two chords appear twice more during this cue, accompanying both external shots of the Cloud and tactical computer representations on the Enterprise's main view-screen. The second re-statement of the chords is juxtaposed against an orchestral development of the V2 motif, the second chord of V3 becoming the first chord of V2 (see Example 11(a)).

Example 11(a). "Meet V'ger" excerpt.



As the crew busily prepare the ship for the possibility of an attack from the Cloud, Steiner uses Goldsmith's E2 quaver/ semiquaver figure played by the strings in octaves (see Example 11(b)).

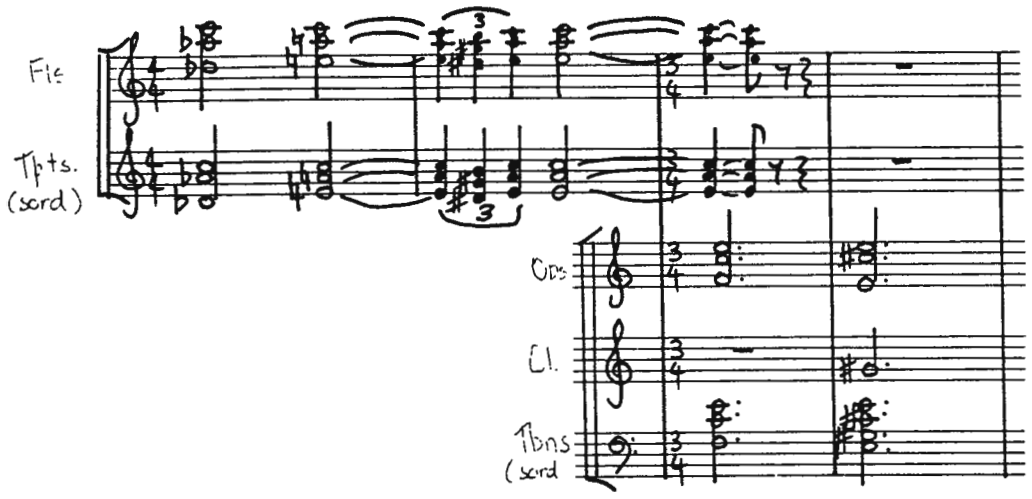
Example 11(b). "Meet V'ger" excerpt.



Before the previously-mentioned combination of V1/V3 and V2 is played by full orchestra (see Example 11(a)), it appears in the

winds and muted brass, using only the first three chords of V2 (i.e. V2(i)), which are interposed between modulating versions of the V3 motif (see Example 11(c)).

Example 11(c). "Meet V'ger" excerpt.



At the end of the cue, when Spock senses V'ger's consciousness touching his mind, the theme S1 is played, employing a similar combination of unison strings and slit-drums as used by Goldsmith in cue 3: "Total Logic."

TABLE 6

CUE 17 (7-1) - "MEET V'GER" - THEMATIC BREAKDOWN

---

1. Miscellaneous - Full Orchestra
2. V1(beam)/V3 - Full Orchestra
3. E2 - strings
4. V1/V3 - Full Orchestra
5. E2 - strings
6. V3 - winds

7. V3/V2 - winds; V3 - winds
8. E2 - strings
9. V1/V3 + V2 - Full Orchestra
10. V2(ii) - winds
11. S1 - strings

XVIII. Cue 18 (8-1) - "The Cloud"

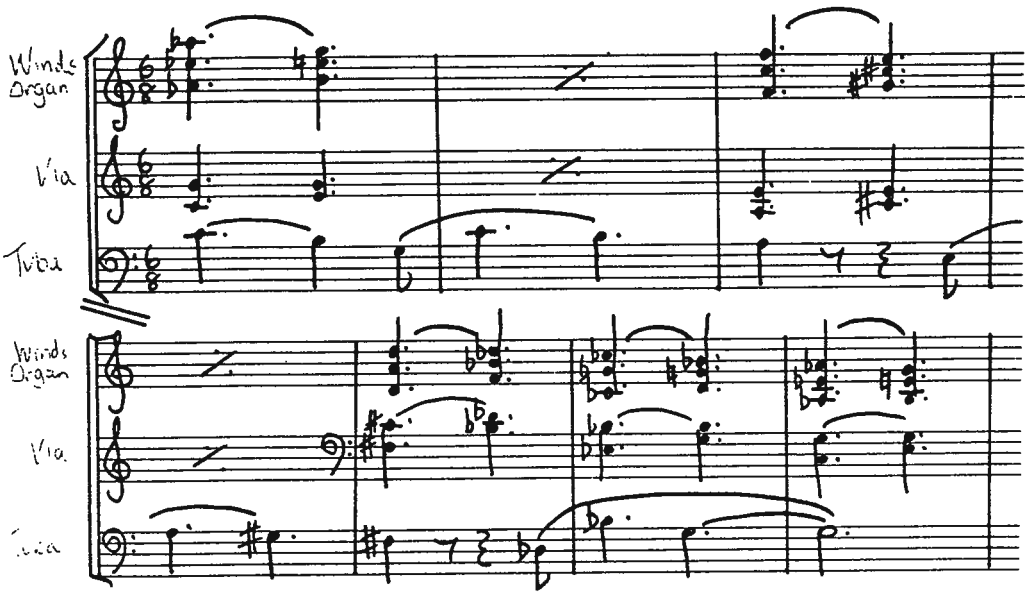
At this point in the score, where Admiral Kirk decides to enter the Cloud in order to discover its secrets, Goldsmith begins to weave the score entirely out of his basic thematic V'ger material. Cues 18, 19 and 20, which comprise the bulk of the V'ger sequences musically, were some of the few sections of the film actually delivered to the composer in order.[18] Thus he was able to build tension through all three sequences, using all of his skills as a symphonic writer to develop the themes as the Enterprise probes deeper and deeper into the depths of the mysterious alien vessel.

The cue begins with the introduction of the triplet quaver ostinato V5 played by the two harps in octaves beneath a texture of flutter-tongued flutes, string tremolos and sustained organ chords. A "whooshing" sound (produced through the combined effects of the six horns reversing their mouthpieces and blowing air through the instruments, together with the Serge synthesizer playing filtered white noise and the tam-tam being rubbed with a super-ball) permeates the opening. Goldsmith follows this with a modulating sequence based on the V3 chordal motif beneath which the tuba plays a melodic figure that features the interval of a

[18] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, p. 1583.

descending semitone (see Example 12(a)).

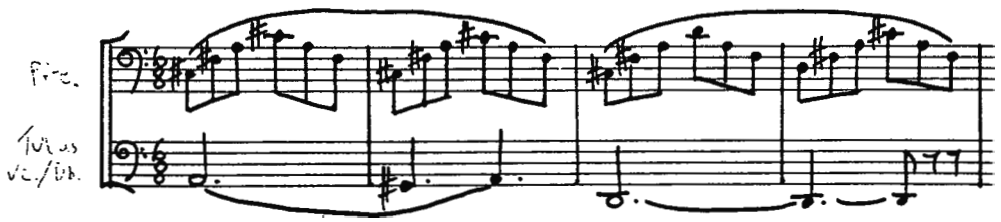
Example 12(a). "The Cloud" excerpt.



This combination of V5 and tuba counter-melody represents the first example of counterpoint using different V'ger themes. Through this counterpointing of thematic fragments Goldsmith develops the complexity of the score, gradually increasing the thematic "layering" as the Enterprise explores further into the Cloud and the giant V'ger spacecraft.

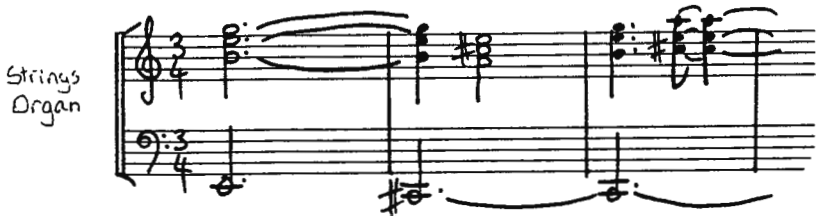
Developing Example 12(a) further, the tuba melody over the V5 ostinato is extended into a rendition of the top line of the V2(i) three-chord motif, the semitone drop acting as a pivot for the notes around it (see Example 12(b)).

Example 12(b). "The Cloud" excerpt.



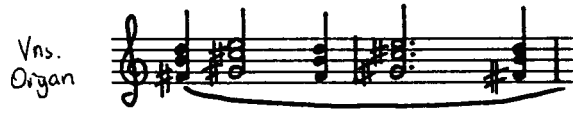
As the scene changes from exterior views of the magnificent luminescent patterns of the Cloud to the interior of the Enterprise, the music suddenly changes to a quiet statement of the V2(ii) motif in the organ and strings (see Example 12(c)).

Example 12(c). "The Cloud" excerpt.



Another interesting feature of this cue is the section in which the violins and organ repeat the two-chord figure V2-x(ii) (see Example 12(d)) for many bars beneath a seemingly chaotic avante-garde orchestral texture that includes short percussive interjections on the flute, xylophone, piano, harps and 'celli (in harmonies); random tones on the waterphone and overtone clusters on the beam.

Example 12(d). "The Cloud" excerpt.



Development of the six-quaver V5 arpeggio occurs later in the cue, wherein Goldsmith expands the figure into longer groupings in the organ and piano to fit over the triple meter of the V2(i) chords in the lower brass (see Example 12(e)).

Example 12(e). "The Cloud" excerpt.

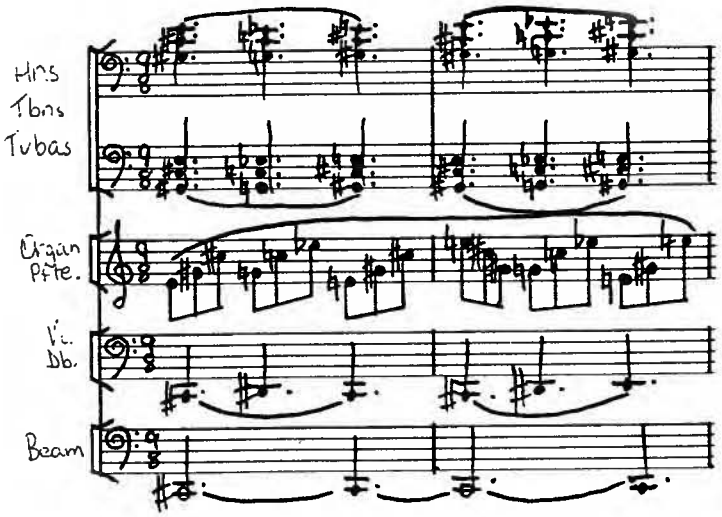


TABLE 7

CUE 18 (8-1) - "THE CLOUD" - THEMATIC BREAKDOWN

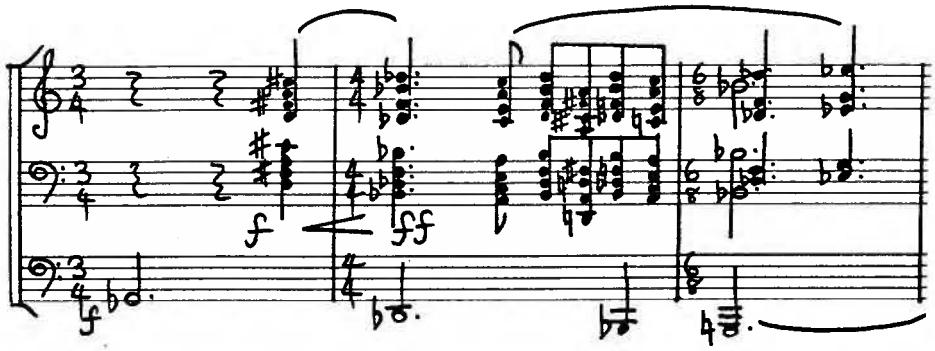
---

1. V5 - harps
2. V3 - modulating sequence in winds/organ/violas; tuba counter-melody
3. V5 - pianos
4. V5 - pianos + V2(i) melodic line in tubas/lower strings
5. V2(ii) - strings/organ
6. Bridge passage - V2(i) + V2-x(i) in winds
7. V3 - modulating sequence in horns/bassoons/trombone
8. V2-x(ii) in violins and organ under miscellaneous orchestral texture
9. V2 (i + ii) in lower brass/strings
10. V1(beam) + V5 - pianos + V3 - winds
11. V2(i) - lower brass/strings + V5 piano/organ
12. V5 - string pizzicato
13. V2(i) development - horns
14. V5 - harps/pianos

XIX. Cue 19 (9-1) - "V'ger Flyover"

Once the Enterprise has penetrated the protective layering of the Cloud, the enormous V'ger spacecraft is revealed, dwarfing the Earth ship with its gigantic proportions. As the Enterprise skims the surface of the alien vessel, Goldsmith once again combines the V3 motif with theme V2 into a menacing brass statement (see Example 13(a)).

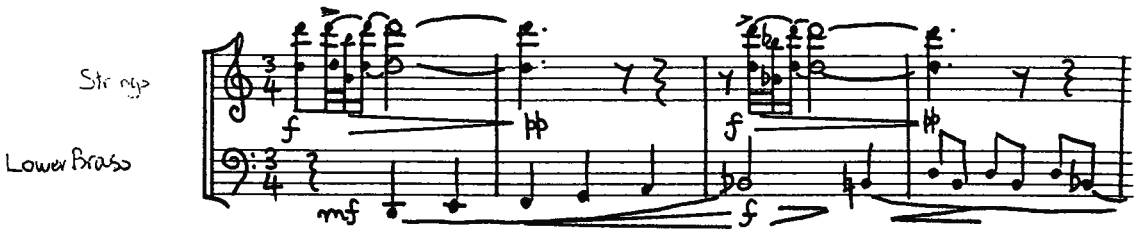
Example 13(a). "V'ger Flyover," bars 1-3.



He then introduces theme V4, the modified version of Ilia's theme I(i), played in octaves by the horns and tuba (see Figure 7 earlier in the Chapter).

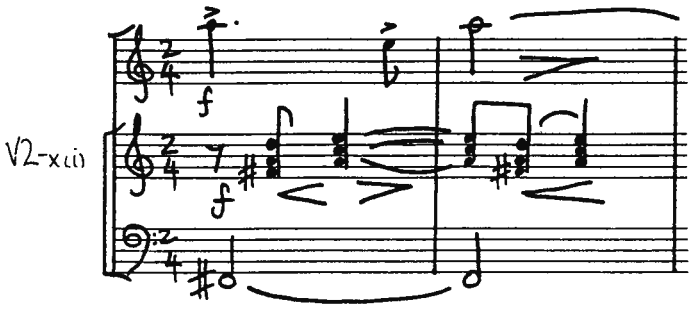
In terms of thematic counterpoint, this cue is more involved than the last. An interesting example is the combining of V4 in the lower brass and winds with a rhythmic figure in the strings derived from the E2 oscillating quaver/semiquaver figure (see Example 13(b)).

Example 13(b). "V'ger Flyover" excerpt.



This is followed by a repeated statement of the chordal motif V2-x(i) in the upper winds and brass, organ, piano and harp which sounds beneath a figure in the violins and violas structured on a perfect fourth (see Example 13(c)).

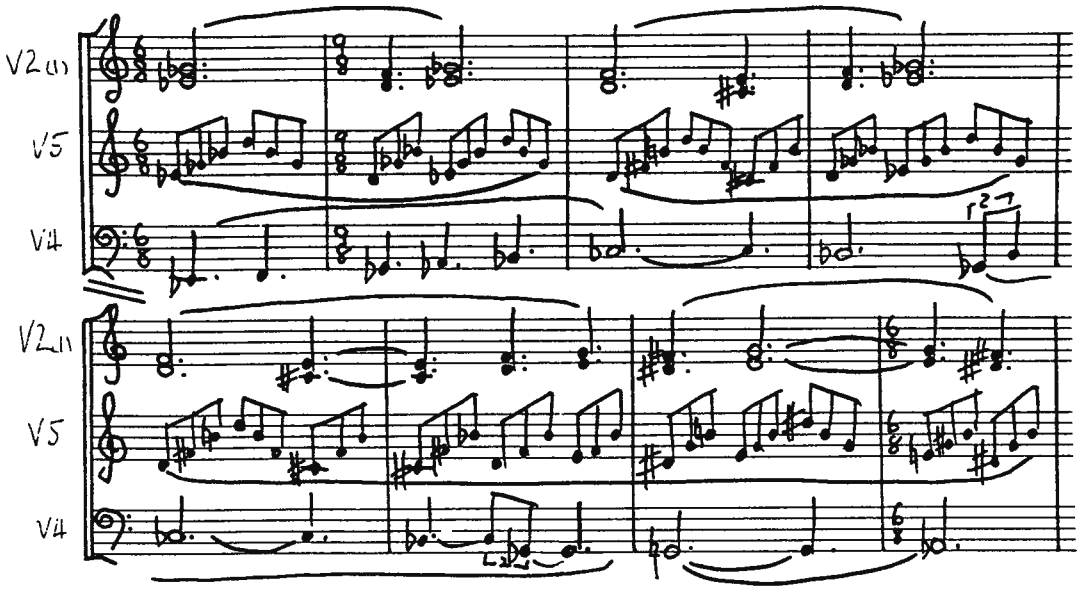
Example 13(c). "V'ger Flyover" excerpt.



Cue 30, "The Meld," is based on a similar combination of the V2-x(i) chords and a repeated drop of a perfect fourth, however in this later case, the fourths figure forms the bass line of the piece, not a treble obbligato.

Two examples of three-part counterpoint can be found in this cue (see Table 8, sections 6 and 8). In the first section for instance, Goldsmith changes the number of triplets in the quaver ostinato, alternating the meter between compound double and compound triple time. This arpeggiated figure played by the harps and pianos, is joined by a development of V4 in the 'celli, bassi, tuba and beam. Over the top of these two lines, Goldsmith adds a development of the V2(i) chords in the electric alto flute, bass clarinet and vibraphone (see Example 13(d)).

Example 13(d). "V'ger Flyover" excerpt.



Another use of the Ilia theme, cleverly cloaked within a carefully-constructed musical camouflage is noted in Table 9, section 12. Here Goldsmith scores each note of the theme homophonically in the brass with the top line (i.e. the tune) disguised by an interweaving string obbligato (see Example 13(e)).

Example 13(e). "V'ger Flyover" excerpt.

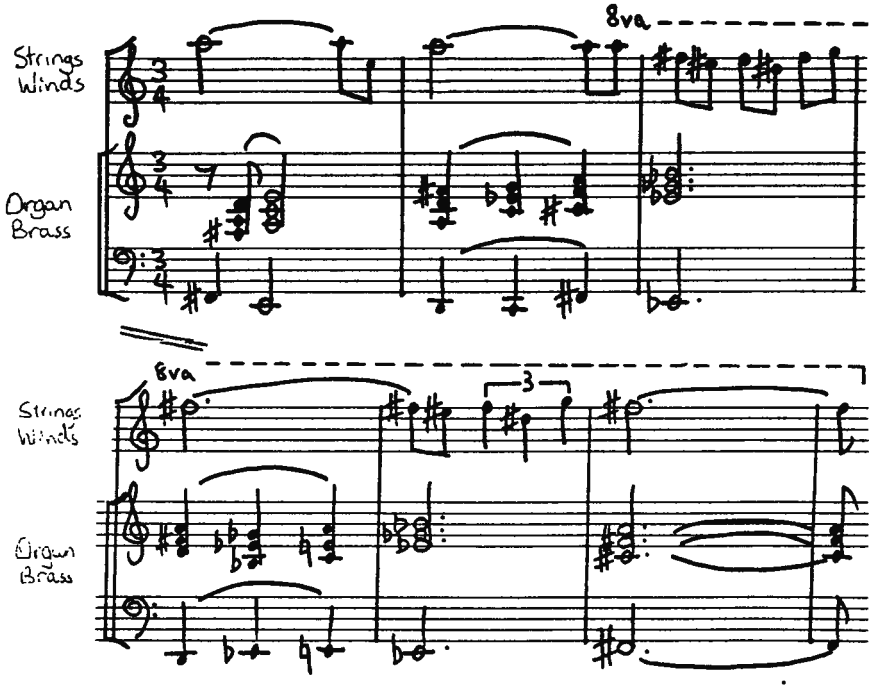


TABLE 8

Cue 19 (9-1) - "V'GER FLYOVER" - THEMATIC BREAKDOWN

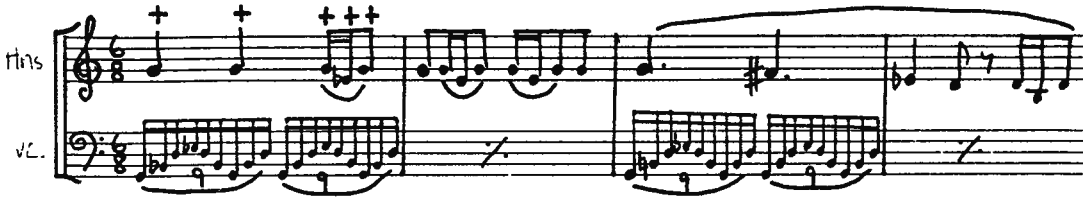
1. V1(beam); V3 + V2 development - brass
2. V1 + V4/Ilia's theme - horns/tuba
3. V2 - organ/winds
4. V4 - lower brass/wind + E2 fragment - strings
5. V2-x(i) - winds/upper brass/piano/harp/organ;
   I(i) fragment - brass
6. V5 - harps/pianos + V4 - lower strings/brass/V1(beam) +
   V2(i) development - winds
7. V5 - violin tremolo + V4 lower strings/brass/V1
8. V5 - violin tremolo + V2(i) fragment - pianos/harps +
   V4 - trumpet obbligato
9. V5 - winds + V2(i) fragment - lower brass
10. V2(i) + (ii) - full orchestra
11. V2(i) fragment - low brass over miscellaneous orchestral texture
12. I(i) development - brass

XX. Cue 20 (10-1) - "The Force Field"

In this cue, the Enterprise is seized by a tractor beam and drawn into the very heart of V'ger. As the tractor beam takes hold of the helpless craft, an ad-lib cadenza-like sequence is violently played on the musical beam using a metal rod. A nine-semiquaver figure, a diminution and harmonic permutation of the triplet quaver ostinato V5 follows in the lower strings. Above this rapid accompaniment, the quaver/semiquaver E2 figure is sounded by stopped

horns, played as a melodic figure in its own right (see Example 14(a)).

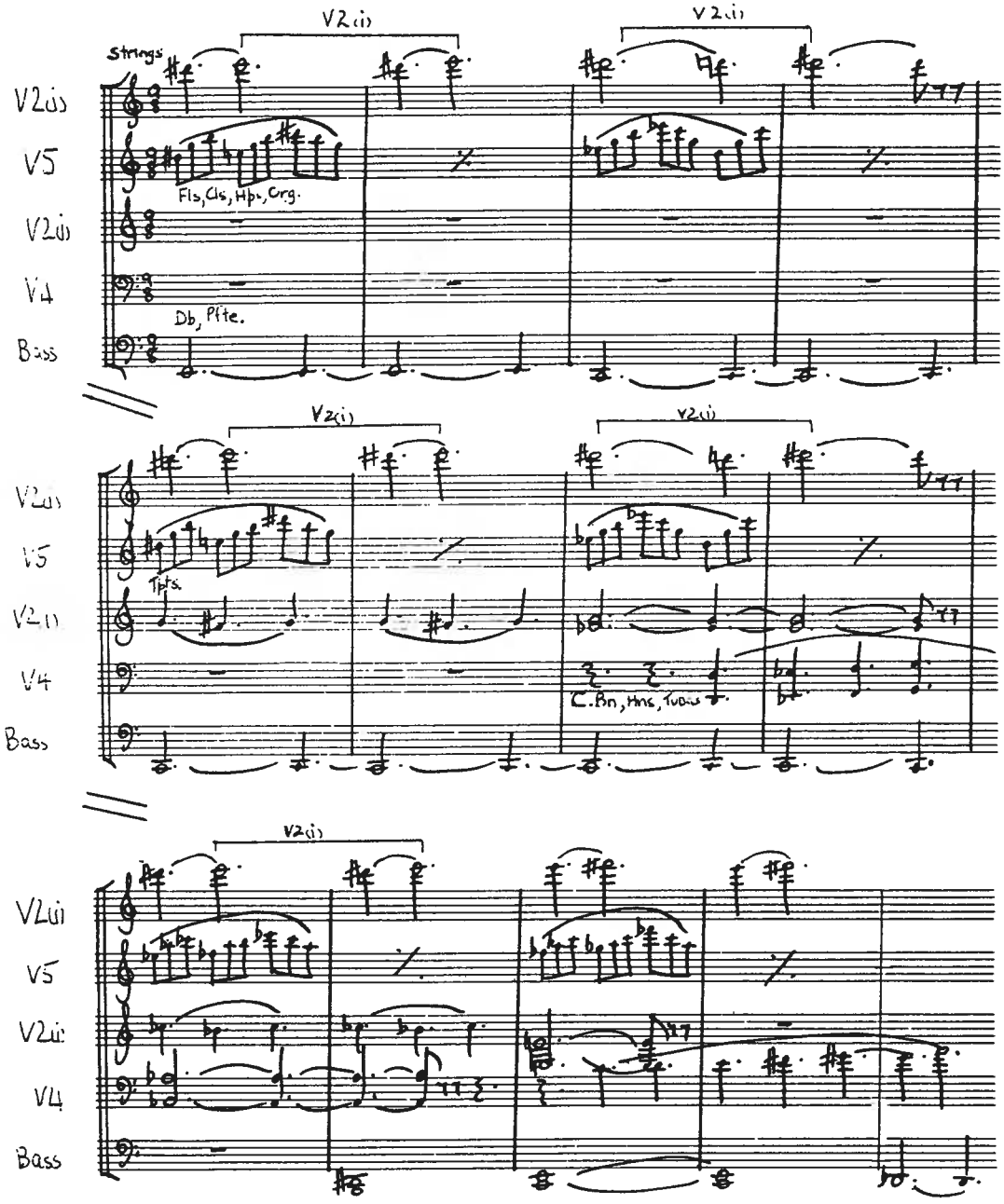
Example 14(a). "The Force Field" excerpt.



Thematic development continues as the Enterprise presses forward, Goldsmith artfully moving between sweeping full-orchestral statements of various V'ger themes and interspersed sections of ever-increasing and ever-varied thematic counterpoint.

A masterly combination of four different versions of certain V'ger signature themes can be found in this cue. Goldsmith begins with a four-bar development of the V5 triplet ostinato figure in the flutes, clarinets, harp and organ. Over the top of this he assigns the strings a two-note figure involving the upward step of a semitone. This figure represents the second and third notes of the top line of V2(i), as opposed to the tuba figure in Example 24 which features the first and second notes of this figure. To this is added a trumpet line consisting of the complete upper line of the triple-chord V2(i) figure. In order to connect this four-bar phrase with the next, Goldsmith weaves into the three-part fabric the opening scalic sequence of the V'ger/Ilia V4 theme in the contrabassoon, horns and tuba. The next four bars are based on the same principle, this time including all six notes of V4's opening (see Example 14(b)).

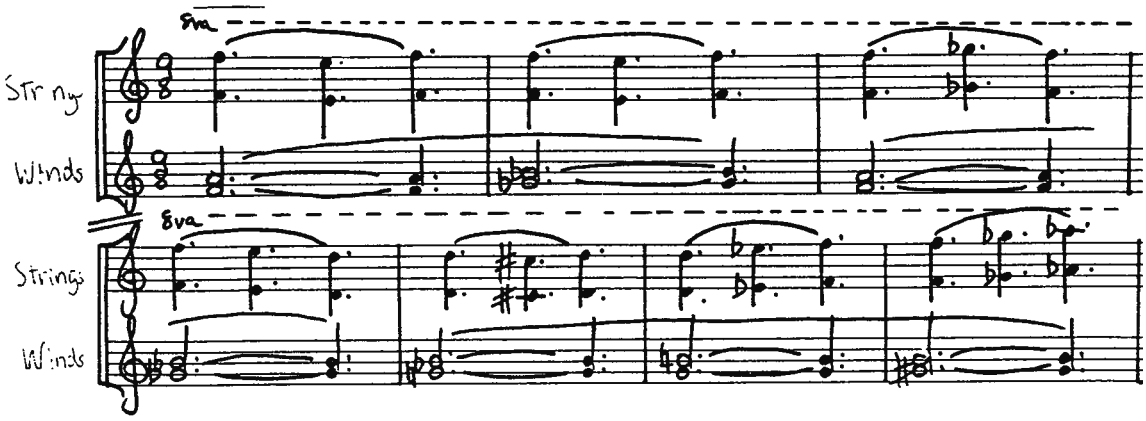
Example 14(b). "The Force Field" excerpt.



Following this is an example of counterpoint in which the figures used are developed from the same theme. The strings play in octaves the top line of V2(i) in various forms: original, inverted and fragmented. Beneath this, the oboes, clarinets, bassoons, horns and vibraphone hold a series of sustained thirds.

These thirds move up and down in steps of a semitone, representing various augmented permutations of the V2(i) chordal figure (see Example 14(c)).

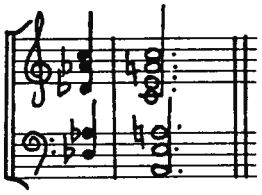
Example 14(c). "The Force Field" excerpt.



In a technique similar to that discussed in cue 3 ("Total Logic"), Goldsmith superimposes two chords against each other, contrasting each by different orchestration. These chords when juxtaposed individually, form a development of the V3 motif. Instead of the first chord being a minor chord with added seventh however, the composer employs a pure second inversion minor chord (see Example 14(d)).

Example 14(d).

14(d)(i): Original V3 form (d♭minor - a minor)



14(d)(ii): "The Force Field" excerpt.

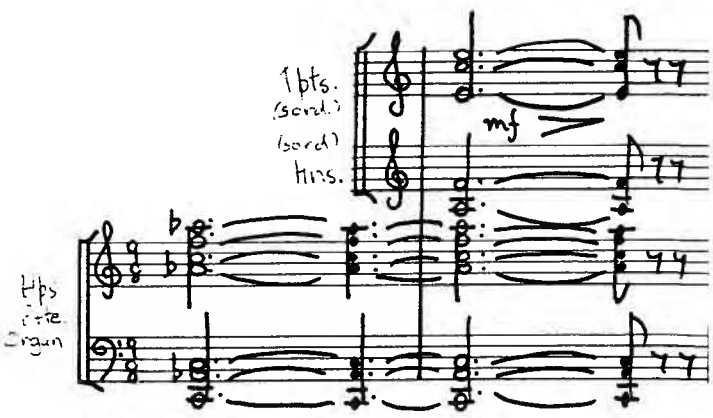


TABLE 9

CUE 20 (10-1) - "THE FORCE FIELD" - THEMATIC BREAKDOWN

1. V1(beam)
2. V5 development - lower strings + E2 - horns
3. E2 - lower strings; V5 development - winds
4. V2(i) development - full orchestra
5. V5 development - pianos/harps + E2 - strings
6. V2(i) development - strings
7. V5 - upper winds/harp/organ + V2(i) fragment - strings + V2(i) - trumpet + V4 - lower winds/brass
8. V2(i) development - strings + V2(i) development - winds
9. V3 - divided chords (in harps/piano/electric piano/organ and trumpets/horns) x 3
10. V3 - full orchestra x 2
11. V2(i) development - strings
12. E2 - lower strings + V2(i) lower strings; V2(i) oboes
13. Full Orchestra - V5 in lower brass
14. Miscellaneous orchestral texture + V2(i) development - strings

XXI. Cue 21 (257-R) - "Micro Examination"

Soon after the appearance of the V'ger probe, which has assumed the bodily form of Ilia, Spock suggests that it be medically examined in order to discover more about those who manufactured it. The probe is taken to the Enterprise's sick bay/medical centre where it is thoroughly scanned. After a percussive note from the beam, the opening of the cue features use of the waterphone and V2-x(ii) chords played by violins (in harmonics) and the organ.

As Decker enters the room and sees the figure of Ilia for the first time since her disappearance, Goldsmith introduces the first seven notes of Ilia's theme I(i). Following a brief interjection from the beam and waterphones, the theme is stated in full twice by the violins as the android seems to recognize the Commander. When Decker's brief daze is interrupted by the other officers, the beam, waterphone and V2-x(ii) violin-harmonic chords are re-introduced, establishing V'ger's control over the probe.

XXII. Cue 22 (261) - "Television Theme" (Written by Alexander Courage)

Admiral Kirk's third and final Captain's log details Decker's attempts to revive Ilia's memory patterns within the alien probe. It is accompanied by an arrangement of the television theme, an exact repetition of cue 15, employing both TV(i) and TV(ii).

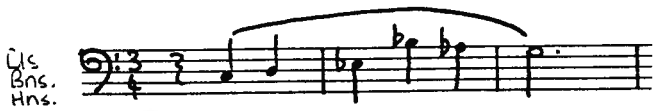
XXIII. Cue 23 (268-R) - "Games"

Based mainly on permutations of Ilia's theme, this cue underscores various attempts by the Enterprise crew to stimulate emotional responses in the V'ger probe by referring to objects and activities from Ilia's past.

Goldsmith's aforementioned ability to suggest through leit-motifs the emotional and psychological aspects of a character is used very effectively in this scene. One example in particular is set on the Enterprise's recreation deck, where Decker is shown trying to revive Ilia's thought patterns and emotions within the robot probe by referring it to a game she once played. As Ilia's memories flood back into the mechanism's consciousness, Goldsmith

brings in Ilia's theme I(i) in its original form in the winds, symbolizing the love she and Decker once shared. But no sooner do the recollections begin than V'ger once again regains control of the probe, returning it to its original highly-logical robotic state. As always, Goldsmith cleverly manipulates the emotions of the scene, shattering the hope borne briefly out of the love theme with the harsh tone of the beam and a repeated statement of the V2-x(ii) chords in the low brass. He follows this with a statement of the first six notes of I(i), similarly scored in the lower brass registers. In this version of I(i) however, he divides the theme in half, inverting the last three notes so that they still retain the same intervallic relationship with each other but move downwards in step-wise fashion rather than upwards (see Example 15(a)).

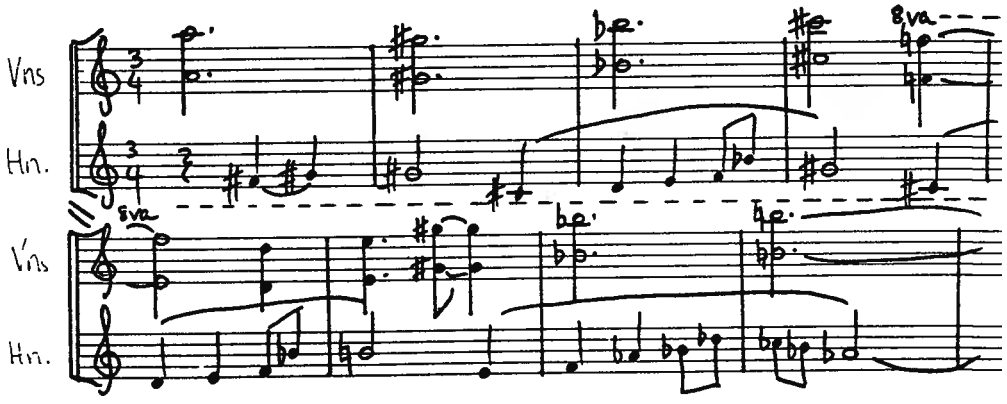
Example 15(a). "Games" excerpt.



This figure also appears later in the cue, played twice in different instrumental groups (see Table 10 section 12).

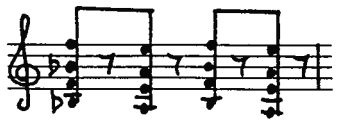
The second half of Ilia's theme (I(ii)) is referred to only nce in the cue, played by a solo horn with violin obbligato (see Example 15(b)).

Example 15(b). "Games" excerpt.



Later in the scene, Spock steals a thruster suit and leaves the Enterprise to try to infiltrate the next chambers of the enormous alien craft. As he sneaks up behind the airlock technician, a repeated chordal figure based on the V2(i) chords is used, played by flutter-tongued flutes, xylophone, cimbalon, harp and ARP 2600 synthesizer. These chords differ from the originals (in V2(i)) insofar as they are in root position and in each case lack the minor third (see Example 15(c)).

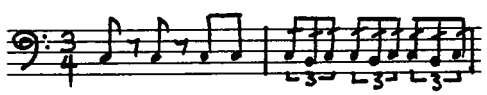
Example 15(c). "Games" excerpt.



While Spock floats in space, preparing to ignite his thruster-pack, Goldsmith employs an avante-garde orchestral texture which makes use of rapid high chromatic scales on the violins, percussive tones on the beam and a use of the slit-drums reminiscent of that heard in the Vulcan scenes.

As V'ger and the Enterprise close in on Earth, Lieutenant Uhura reports the increase in strength of signals from Starfleet headquarters. At this point, Goldsmith introduces a rhythmic quaver figure in the 'celli based on the oscillating quaver/ semiquaver figure E2 (see Example 15(d)).

Example 15(d). "Games" excerpt.



Over this, the first seven notes of the Enterprise theme sound in the muted horns as the realization of what Spock is

attempting dawns on Admiral Kirk.

TABLE 10

CUE 23 (268-R) - "GAMES" - THEMATIC BREAKDOWN

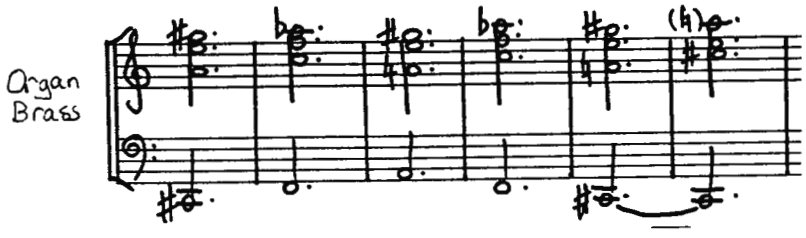
1. I(i) - winds
2. V1(beam) + V2-x(ii) - low brass
3. I(i) fragment (including inversion) - low brass
4. V2-x(ii) - low winds/organ
5. I(i) - violins
6. Miscellaneous bridge passage - V1 + short reference to I(i) in trumpets
7. V2(i) fragmented quaver figure - xylophone/cimbalon/harp/flutes/ARP 2600
8. I(i) - 'celli
9. I(ii) - solo horn with violin obbligato
10. I(i) fragment - violins
11. V1(beam) + V2-x(ii) - lower winds
12. I(i) fragment (including inversion) - clarinet/bassoon/horns; violins
13. I(i) fragment - strings/upper winds
14. Miscellaneous orchestral texture - strings/slit-drums/V1(beam)
15. I(ii) fragment - horns
16. E2 development - strings; V2-x chords development - winds
17. E1(i) - muted horns; E2 development - lower strings

XXIV. Cue 24 (273) - "Spock Walk"

Cue 24 continues on from the end of "Games" with only a split-second break, accompanying shots of Spock priming his thruster-suit for ignition. Goldsmith opens the cue with a high-frequency orchestral texture comprising very high, rapid chromatic scales on the violins; ad-lib. pizzicati in free rhythm from the violas; tones on the waterphones and water crotales; and a "sample-and-hold" effect from the OBX synthesizer. He then shifts orchestral focus down into the lower registers with a reference to the opening of cue 3: "Total Logic." Here, Goldsmith once again employs low angklung tremolos and low note-clusters on the harps and piano against a texture of held notes in the 'celli, bassi and organ pedal.

When Spock's rocket-thrusters burst into life, the orchestra (including the beam), explodes into a flurry of tumultuous movement, pounding out chords based on fleeting references to those that make up V2(i) and V3. A sequence of orchestral chords follows, consisting of repetitions of the V3 chords in the brass and organ (see Example 16(a)).

Example 16(a). "Spock Walk" excerpt.



As Spock penetrates various stages of V'ger's interior, he sees a series of dimensional images, representations of all that V'ger has seen and recorded over its entire journey. Goldsmith

accompanies this with the repetition of a sequence from cue 18: "The Cloud." In this latter case however, while the harmonies and melodic figurations remain the same, the tempo is doubled. This suggests musically the difference between the initial awe-inspiring experience of the Enterprise cautiously entering the Cloud and witnessing a slow unravelling of its mysterious secret, and Spock's rather reckless "leap" into the unknown, where he observes a compressed representation of V'ger's journey - - the whole truth revealed in a matter of seconds (see Example 16(b)).

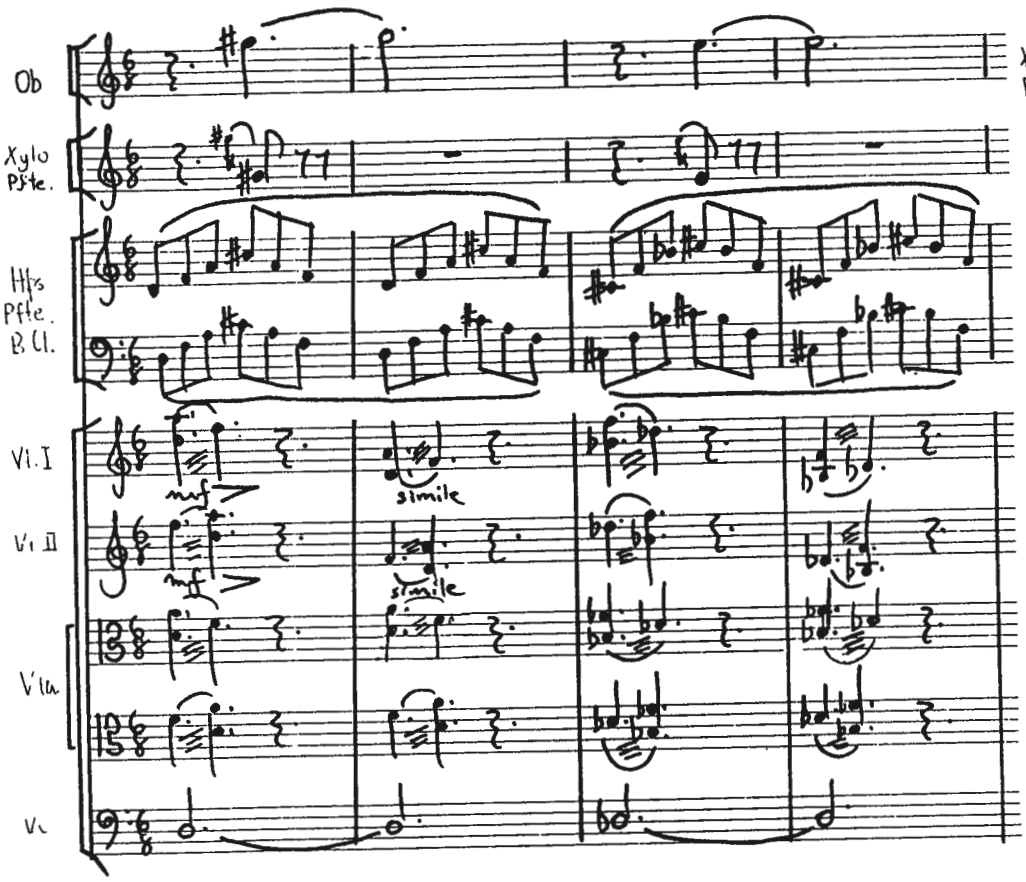
The V5 triplet ostinato, with its increased tempo, moves from the harps into the organ and pianos, beneath which the tubas re-introduce a melodic rendition of the top line of the V2(i) three-chord motif using exactly the same notes as in Example 12(b) from cue 18.

As Spock floats past images of planets, moons and stars, Goldsmith dispenses with the V5 figure and employs long sustained versions (stretching over several bars at a time) of the V3 chords in the violins and flutter-tongued flutes. Beneath this, the trombones, bassoons and tubas play short interjections of the V2(i) chords.

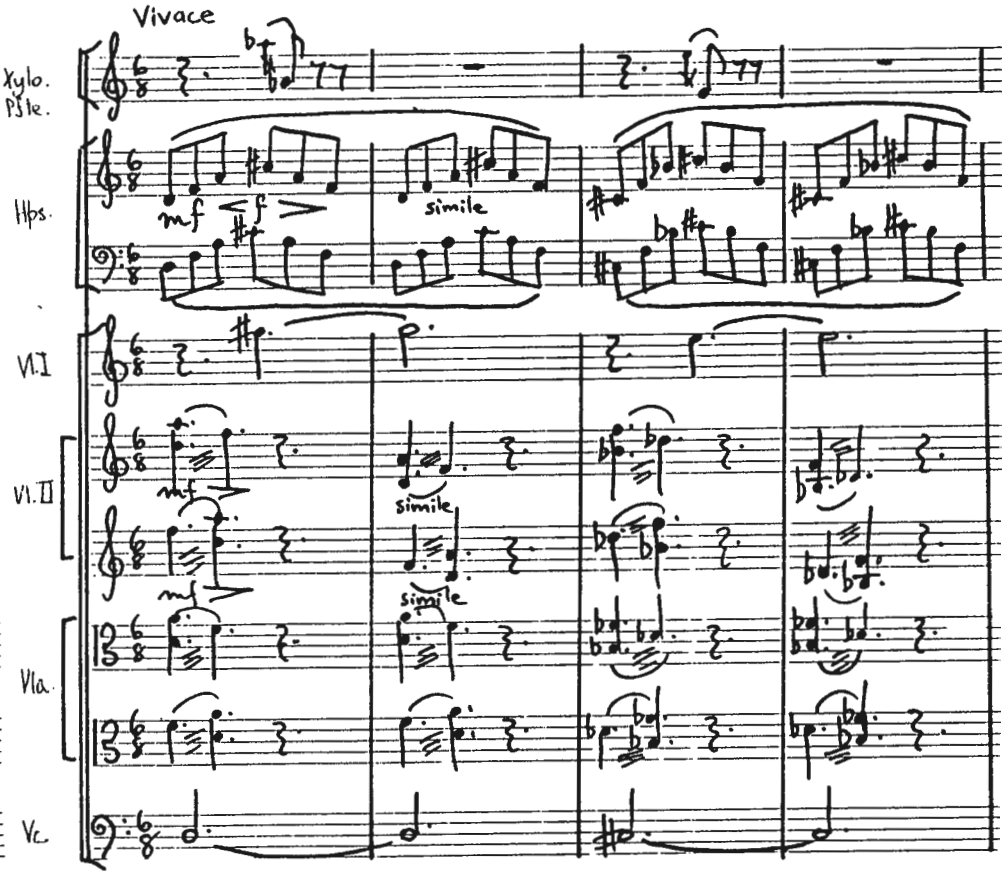
The last dimensional image Spock witnesses is one of Ilia, floating death-like in space. At this moment, Goldsmith introduces a rendition of the I(i) theme scored homophonically as a brass chorale around which the strings and winds weave a unison counter-melody (see Example 16(c)).

Example 16(b).

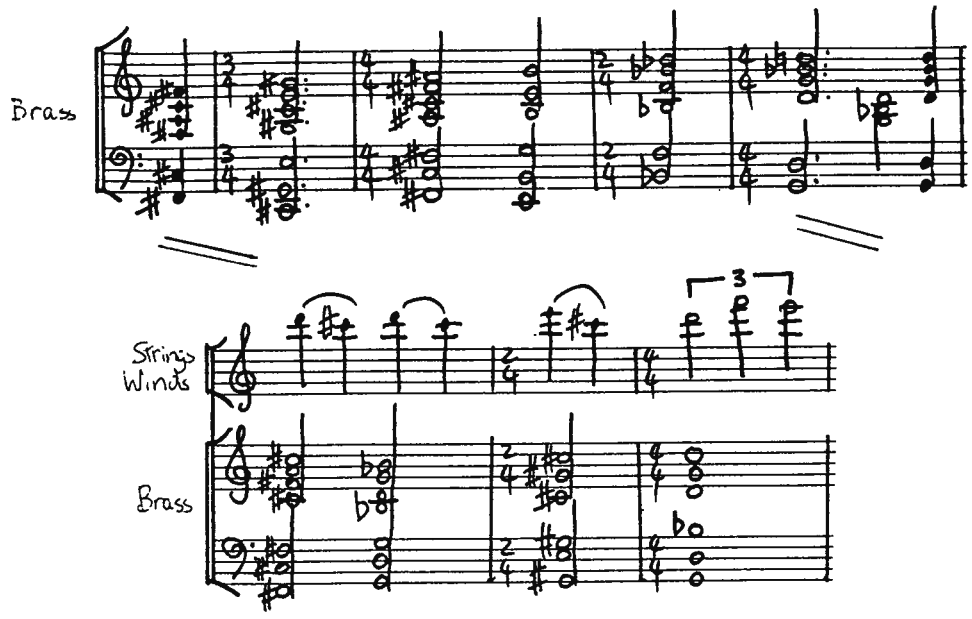
16(b)(i): "The Cloud" excerpt.



16(b)(ii): "Spock Walk" excerpt.



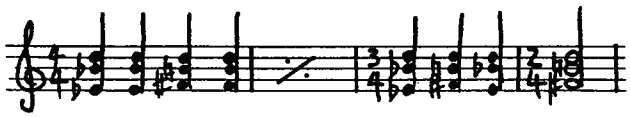
Example 16(c). "Spock Walk" excerpt.



Treatment of I(i) here is similar to that used in Example 13(e) from cue 19 ("V'ger Flyover").

In order to learn the truth about the alien intruder directly from V'ger itself, Spock attempts a Vulcan mind-meld with the image of Ilia. As the staggering power of V'ger's consciousness pours through Spock's brain, the V3 chords are forcefully announced in crotchets in the percussion section (see Example 16(d)).

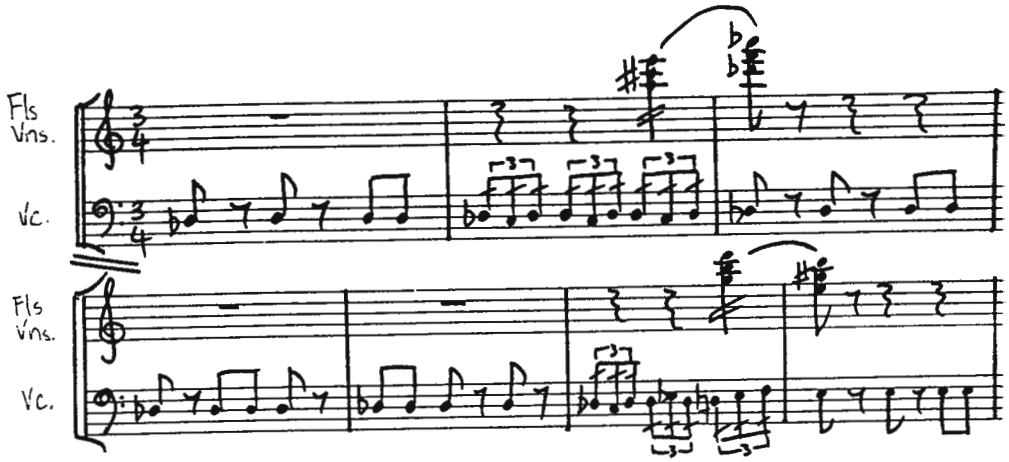
Example 16(d). "Spock Walk" excerpt.



When Spock's inert body is "sent" back to the chamber in which the Enterprise floats trapped, a development of the quaver/semiquaver E2 figure is used similar to that introduced at the end of the previous cue. Short chordal motifs related to the V2-x chords punctuate this line, played by flutter-tongued flutes

and violins (see Example 16(e)).

Example 16(e). "Spock Walk" excerpt.



The scene ends with Admiral Kirk, also equipped with a thruster-suit, retrieving Spock back to the ship. As in the previous cue, the Enterprise theme E1(i) is re-introduced over the E2 development in the lower strings, but this time it is sounded by a muted solo trumpet (see Example 16(f)).

Example 16(f). "Spock Walk" excerpt.

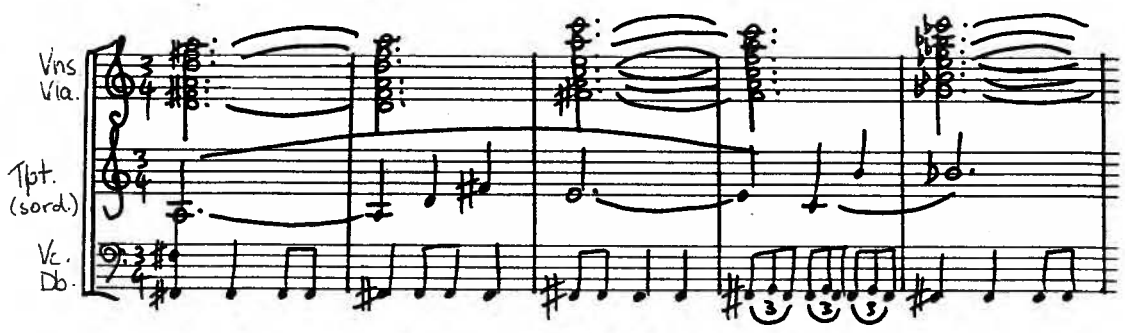


TABLE 11

CUE 24 (273) - "SPOCK WALK" - THEMATIC BREAKDOWN

1. Miscellaneous high-frequency orchestral texture
2. Miscellaneous low-frequency orchestral texture
3. Miscellaneous orchestral chords - V2(i)/V3 fragments
4. Full Orchestra - V3 chords
5. V5 - harps (double speed)
6. Miscellaneous orchestral chords
7. V5 - organ/piano (double speed) + miscellaneous orchestral texture + V2(i) development - tuba
8. V3 chords held in violins/flutes + V2(i) chords - trombones/bassoons/tubas
9. I(i) - brass chorale
10. Full Orchestra - percussive V3 chords
11. E2 development - 'celli + V2-x chords development - flutes/violins
12. E1(i) - muted trumpet solo + V2 development - 'celli/bassi

XXV. Cue 25 - "V'ger Signals the Creator"

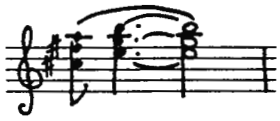
This cue, which accompanies V'ger's arrival in Earth orbit and subsequent transmission of radio signals, consists of a re-tracking of the closing section of Cue 24 (i.e. Table 11, sections 11 and 12).

XXVI. Cue 26 (14-2) - "Systems Inoperative"

In order to wipe out the "carbon unit" (i.e. human)

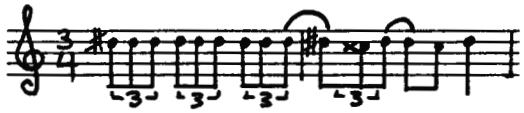
infestation of the planet, which it believes is interfering with the Creator's answer, V'ger fires a number of energy devices around the Earth. These plasma energy bolts deactivate all planetary defensive systems, leaving Earth helpless in the face of any impending attack. Goldsmith introduces the V2-x motif in its third version V2-x(iii) at the opening of this cue, played first by the flutes, oboes and clarinets, then by the bassoons and horns (see Example 17(a)).

Example 17(a). "Systems Inoperative" excerpt.



The top line of the V2(i) three-chord pattern provides the basis for a short repeated quaver figure, featured twice in this cue and played by flute and piano in octaves (see Example 17(b)).

Example 17(b). "Systems Inoperative" excerpt.



As most of this scene contains dialogue, it is scored very thinly, with long sustained lines such as the first four bars of Spock's theme S1. This thematic fragment appears three times, played by the clarinets, bass clarinet, bassoons and contrabassoon across three octaves, with slit-drum accompaniment. A unison string figure based on a permutation of bars 4 and 5 of the Enterprise theme 1(i) (as seen in Example 2(a)(i)) is used to connect statements of the S1 fragments (see Example 17(c)).

Example 17(c). "Systems Inoperative" excerpt.

TABLE 12

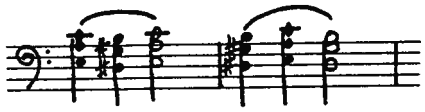
CUE 26 (14-2) - "SYSTEMS INOPERATIVE" - THEMATIC BREAKDOWN

1. V2-x(iii) - flutes/oboes/clarinets; bassoons/horns
2. V1(beam) + V2-x(ii) - winds
3. V2(i) repeated quaver figure - flute/piano
4. S1 fragment - clarinets/bass clarinet/bassoons/contrabassoon
5. V2-x(ii) - horns
6. V2(i) repeated quaver figure
7. S1 fragment (as per section 4) + E1(i) fragment (semiquaver-figure) - strings
8. S1 fragment (as per Section 4)

XXVII. Cue 27 (14-3) - "Hidden Information"

After tricking V'ger into believing that he knows why the Creator has not answered, Kirk persuades the alien to move the Enterprise into its central brain complex. Goldsmith uses many of the figurations developed in the previous cue, scoring lightly under the important dialogue. As the Enterprise is drawn into the very heart of V'ger, Goldsmith increases the number of longer V'ger thematic references. For instance, he uses a repeated statement of the V2(i) chords in the muted horns, reversing the second bar so that it starts on the lower chord, rises a semitone and then returns to the first chord again (see Example 18(a)).

Example 18(a). "Hidden Information" excerpt.



When the Ilia probe points at the Enterprise view-screen, confirming that the complex ahead contains V'ger itself and the source of the radio signals, a full rendition of the V2 motif is sounded in the flutes and oboes (see Example 18(b)).

Example 18(b). "Hidden Information" excerpt.

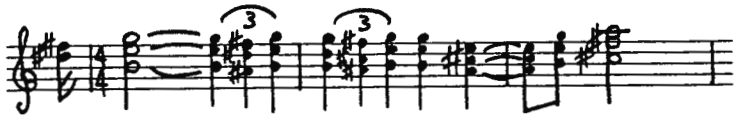


TABLE 13

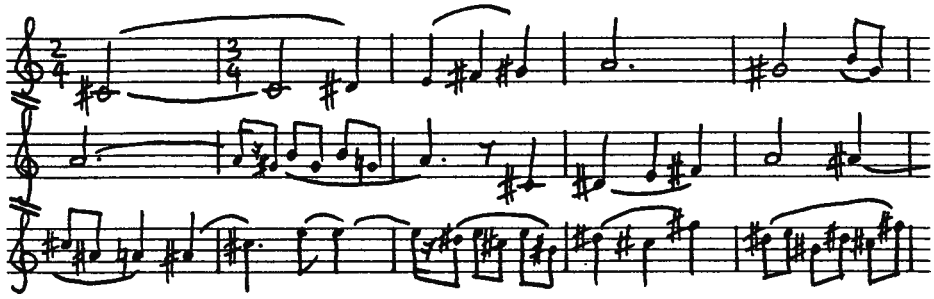
CUE 27 (14-3) - "HIDDEN INFORMATION" - THEMATIC BREAKDOWN

1. Sustained string chord
2. V2-x(ii) - low brass + V2(i) repeated quaver figure - piano/flute
3. S1 fragment - clarinets/bassoons + E1(i) fragment (semiquaver figure) - strings
4. S1 fragment (as per section 3)
5. V1(beam) + repeated orchestral pulse
6. Horns - V2(i) chords + inversion
7. S1 fragment (as per section 3)
8. V1(beam)
9. Sustained string chord
10. V3 + V2 - flutes/oboes
11. V2-x(ii) development - horns; winds

XXVIII. Cue 28 (367-R) - "Inner Workings"

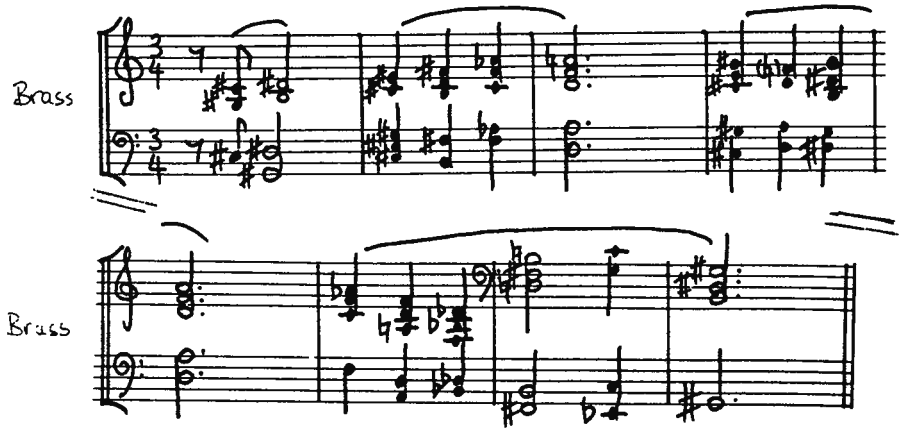
By forming an oxygen/gravity envelope about the Enterprise, V'ger allows a select group of humans to leave the confines of the ship to travel on foot to its central brain complex. Kirk, Spock, McCoy, Decker and the Ilia probe step onto the exterior hull of the Enterprise to the accompaniment of the beam, V2-x(iii) chords in the winds and tones from the waterphone. As they walk across a metallic plain towards the brightly-lit structure that houses V'ger itself, Goldsmith introduces the V4/Ilia theme, played in octaves by the strings (see Example 19(a)).

Example 19(a). "Inner Workings" excerpt.



Discovery of the Voyager space-craft nestling sentinel-like within the central complex is heralded by a brass chorale version of I(i) surrounded by a meandering counter-melody in the winds and strings (see Example 19(b)).

Example 19(b). "Inner Workings" excerpt.

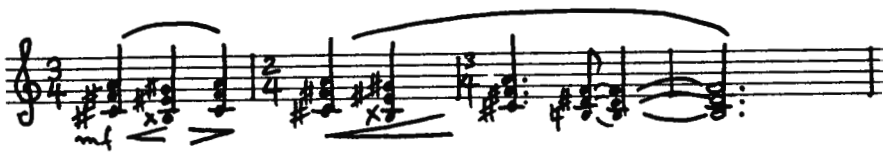


Although similar treatment of Ilia's theme is employed previously in the score (see Examples 19(e) and 24(c)), it is not until this point in the film, where V'ger is revealed to the humans for what it is, that Goldsmith harmonizes each note of the melody across all eight bars of I(i).

The love theme I(i) also appears in its original form in this cue, when Decker's eyes meet those of the Ilia probe as he descends into the recessed V'ger chamber. Played by the electric alto flute, cor anglais and CS-80 synthesizer, this thematic reference serves as a reminder of the not-too-distant past, a brief recollection that is soon lost in the reality of the situation.

Of the cue's various statements and references to the V'ger themes, the most dramatic occurs when Admiral Kirk reaches V'ger's side and discovers its true name. To punctuate Kirk's oral spelling of the space-probe's abbreviated name, an accented tone is struck on the beam, followed by a statement of the V2(i) and first half of the V2(ii) chords in the winds and the muted horns (see Example 19(c)).

Example 19(c). "Inner Workings" excerpt.



As the Admiral rubs the carbon-scoring from the obliterated letters of the craft's name, Goldsmith builds tension through use of rising piano and string scales accompanied by the wind machine. When Kirk reads out the full title of the space-probe: Voyager Six, a slightly varied version of the V2(i) chords is juxtaposed with

the V2-x(ii) chords to complete a full statement of the V2 theme (see Example 19(d)).

Example 19(d). "Inner Workings" excerpt.

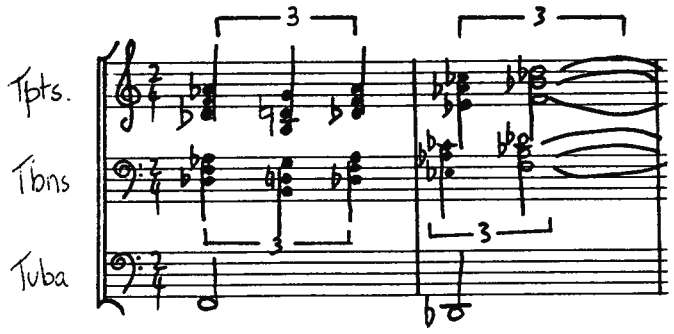


TABLE 14

CUE 28 (376-R) - "INNER WORKINGS" - THEMATIC BREAKDOWN

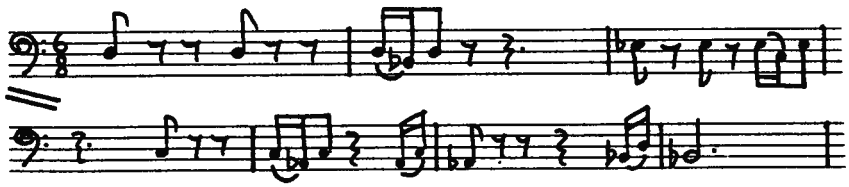
1. V1(beam) + V2-x(iii) - winds
2. V2 - muted horns
3. V4 - strings
4. I(i) (complete) - brass chorale
5. V2-x(iii) chords - muted horns
6. V4 fragments - harp
7. I(i) fragments - electric alto flute/cor anglais/ CS-80 synthesizer
8. V4 fragments - harps/winds; V2-x development - strings
9. V1(beam) + V2(i) + V2-x(i) - winds/muted horns
10. Miscellaneous bridge passage - piano/violins/wind machine
11. V1 + V2(i) + V2-x(ii) - winds/muted horns
12. V2(i) + V2-x(i) - horns

XXIX. Cue 29 (17-2) - "V'ger Speaks" (Adapted by Fred Steiner)

Finally finding themselves in a position to communicate directly with V'ger, the humans discover the truth about the probe. This is expounded in the dialogue delivered in this scene. In order that the audience hears all of this information, Fred Steiner, who adapted this cue, keeps the music very soft and sustained. A very dark menacing orchestral texture, which combines a held organ pedal note and slow chord changes in the bass clarinet, contrabass-clarinet, bassoons, contrabassoon, muted trombones and muted tubas, undulates slowly through most of the cue.

This is interrupted when Kirk orders Uhura, over his communicator, to search the Enterprise's computer records for the NASA code signal which instructs the Voyager probe to transmit its data. At this point, a permutation of the oscillating quaver/semiquaver figure E2 is heard in the lower strings and bassoons (see Example 20(a)).

Example 20(a). "V'ger Speaks" excerpt.

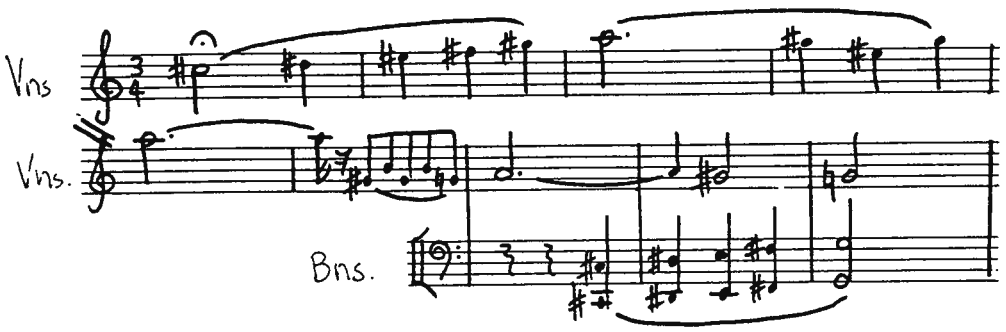


Reappearance of this figure occurs when the Enterprise, having unearthed the code signal, transmits it to the probe.

To prevent reception of the code's final number sequence, V'ger destroys its own antenna leads. In an almost emotional plea (which is aimed at Decker), the Ilia probe explains that

the Creator must join with V'ger, in order that its data be transmitted in person. As their eyes meet, the love theme is introduced, but after five bars is transformed into its V4 form, moving from the violins into the bassoons (see Example 20(b)).

Example 20(b). "V'ger Signals" excerpt.



As the realization of what must happen in order for V'ger to evolve dawns upon Decker (i.e., the physical joining of man and machine), the V2 theme is presented softly by the woodwinds, in its complete form.

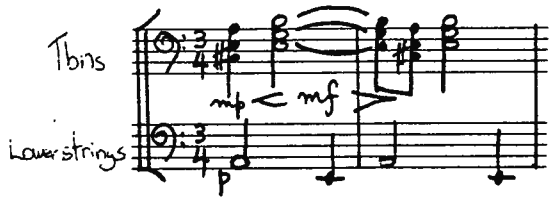
XXX. Cue 30 (16-3R) - "The Meld"

Built around a passacaglia-like ground bass and repeated chordal pattern, this cue accompanies the scene where Decker and the Ilia probe "meld" together in a brilliant exchange of energy, evolving in the process into a new life-form. The beam opens the cue with a repeated bass figure characterized by the tonic of the chord dropping a perfect fourth to the dominant in the rhythmic relationship of a minim followed by a crotchet. Repeated almost consistently throughout in four-bar patterns, this figure modulates to a different key centre after the end

of each segment. The chordal figuration featured above the bass line consists of the chords V2-x(i) (i.e., major I followed by minor V, or vice-versa). As the cue progresses, each statement of these chords with their repeated bass notes increases in grandeur, either through changes in orchestration or the addition of counter-melodies.

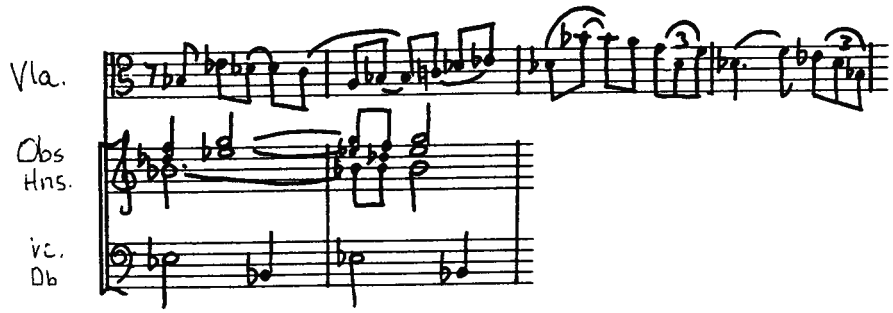
The first statement is in A major, and is performed in a subdued dynamic by the trombones and lower strings playing the V2-x(i) chords and bass line respectively (see Example 21(a)).

Example 21(a). "The Meld," Segment 1.



Following this, the key centre changes to E-flat major and the V2-x(i) chords move into the oboes and horns. Goldsmith reverses the order of major I to minor V however, and adds a viola counter-melody to the texture (see Example 21(b)).

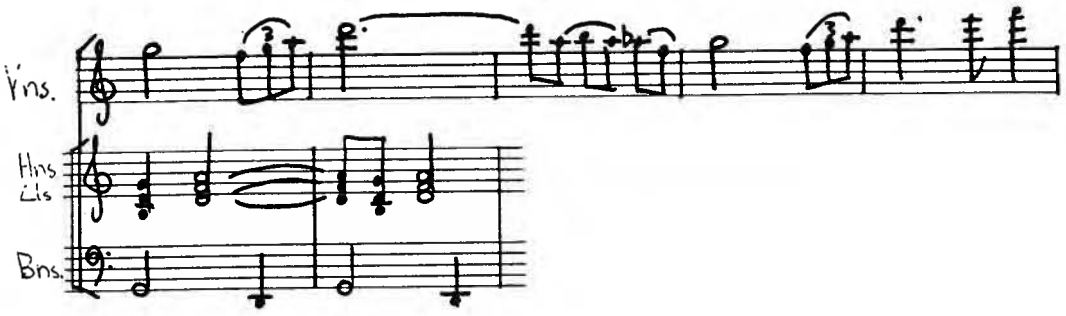
Example 21(b). "The Meld," Segment 2.



With the order of the V2-x(i) chords resuming their original

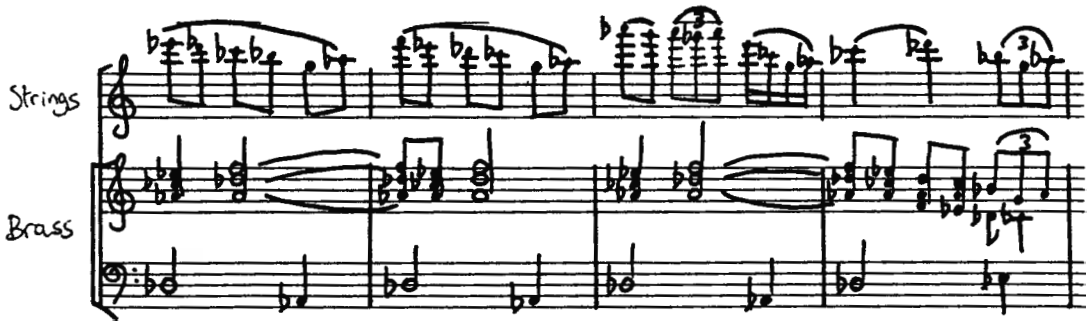
form, the third segment (in G major) features yet another counter-melody, this time in the violins (see Example 21(c)).

Example 21(c). "The Meld," Segment 3.



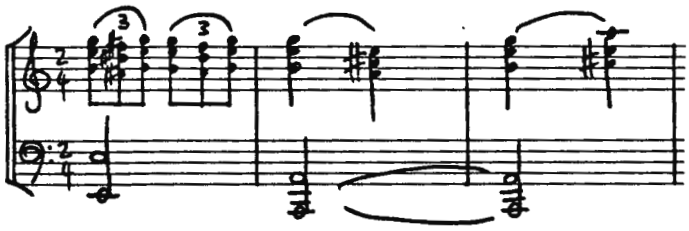
As in the case of Segment 2, the fourth segment has the minor dominant chord preceeding that of the major tonic. Written in D-flat major, this version reaches the dynamic level of forte and is accompanied by a counter-melody scored for the entire string section playing in octaves (see Example 21(d)).

Example 21(d). "The Meld," Segment 4.



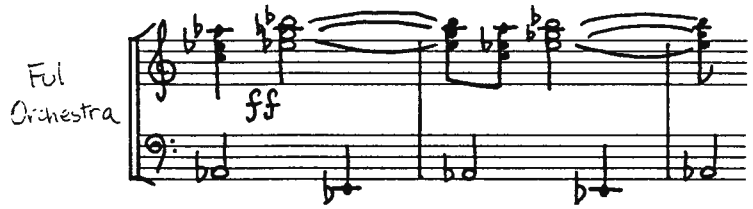
At this stage in the cue, the passacaglia-like flow is interrupted by a full statement of the theme V2 in the strings and organ (see Example 21(e)).

Example 21(e). "The Meld" excerpt.



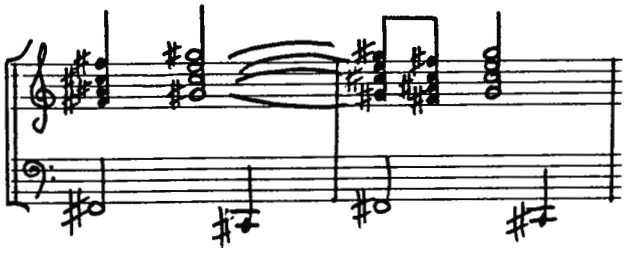
Soon though, the passacaglia figure returns in a fortissimo statement in A-flat major. In this case, the order of the chords remains true to that of the original (see Example 21(f)).

Example 21(f). "The Meld," Segment 5.



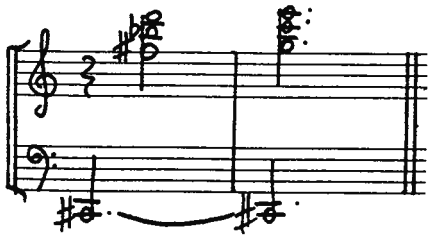
As the energy from the meld begins to engulf the alien vessel, Kirk, Spock and McCoy retreat back to the Enterprise. In underscoring this, Goldsmith re-introduces theme V5 (the triplet ostinato) made up in this case of semiquavers instead of quavers. Passing from the organ, harp and winds to a tremolo version in the violins and violas, this figure builds to a very grand statement of the V2-x(i) passacaglia chords from the full orchestra in F-sharp major (see Example 21(g)).

Example 21(g). "The Meld," Segment 6.



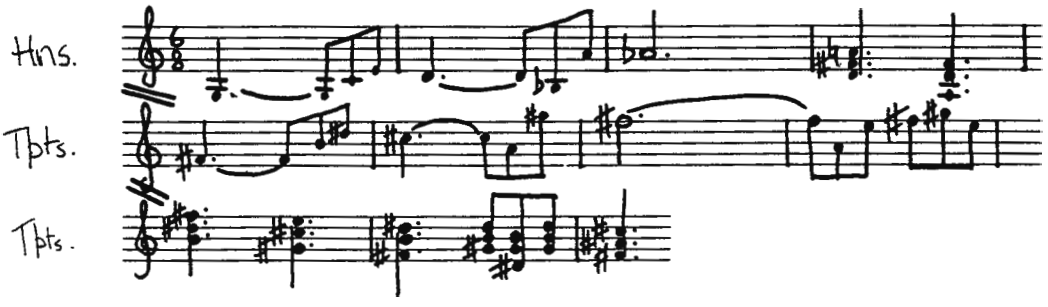
The final and loudest version of the passacaglia figure is heard as the enormous V'ger spacecraft consumes itself in a burst of plasma energy. After a flurry of string scales and measured wind tremolos, the full orchestra (including the beam), sounds a harmonic variation of the two chords three times consecutively. These statements represent the climax of the entire scene, indeed, of the film itself (see Example 21(h)).

Example 21(h). "The Meld," Segment 7.



Following this, a shot of the Enterprise fills the screen, free once more to travel the cosmos as she pleases. The first three bars of the Enterprise theme E1(i) are heard, sounded by the horns in C major. This figure is taken over by the trumpets, the thematic fragment now extended to encompass the first seven bars of the original in B major (see Example 21(j)).

Example 21(j). "The Meld" excerpt.

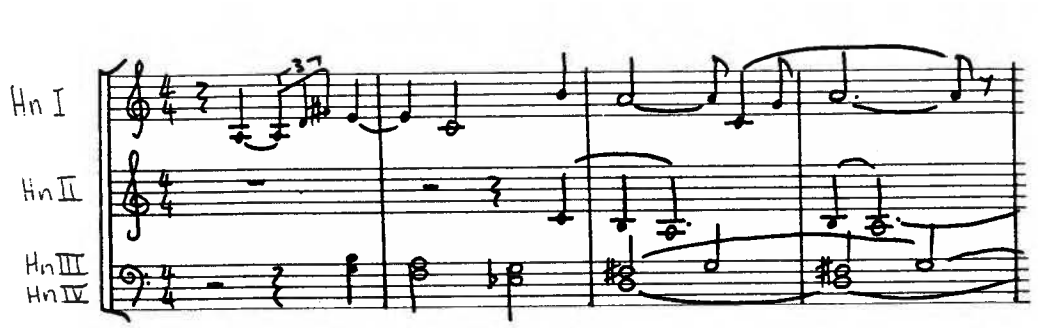


XXXI. Cue 31 (16-4/5) - "A Good Start"

With their mission completed and the Earth saved, Admiral Kirk, Mr Spock and Doctor McCoy return to the bridge of the Enterprise. Passing through different instrumental choirs, the Enterprise theme 1 sounds through this scene in almost complete form.

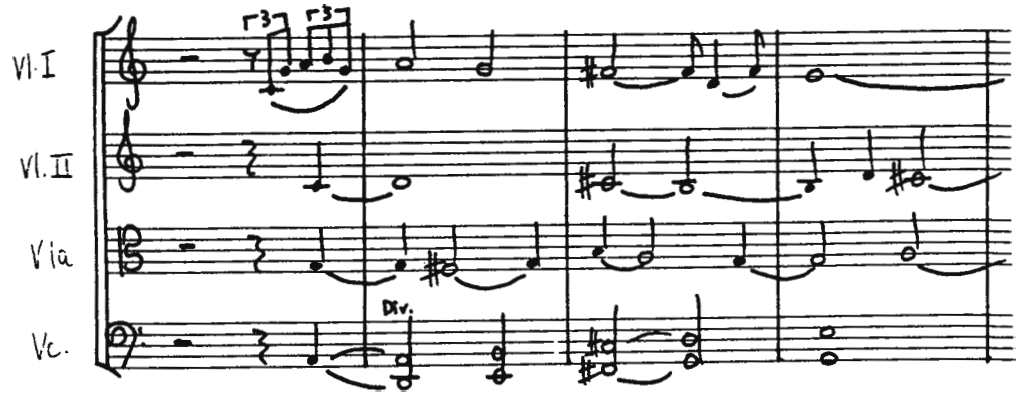
Firstly, bars 1 to 4 of E1(i) are stated and developed by the horn section (see Example 22(a)).

Example 22(a). "A Good Start," bars 1-4.



Bars 4 to 7 of E1(i) are then taken up, after a slight overlap, by the strings in a chorale-like treatment (see Example 22(b)).

Example 22(b). "A Good Start," bars 4-7.

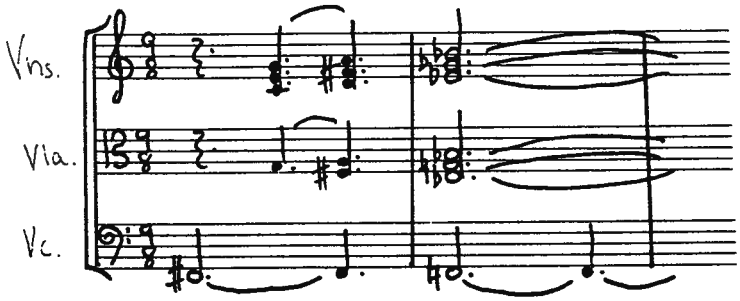


The woodwinds play bars 2 to 5 of the second half of E1 (E1(ii)), accompanied by the 'cello section (see Example 22(c)).

Example 22(c). "A Good Start," bars 8-11.

Bars 6 and 7 of E1(ii) then move from the winds back into the strings (see Example 22(d)).

Example 22(d). "A Good Start," bars 12-13.



The rest of this cue comprises restructured sections of cue 5: "The Enterprise." Sections 1, 13, 14 and 15 of Table 5 appear exactly as they are in this latter cue, with the exception of a repetition of E1(ii) in the violins and horns from Section 14.

Such re-usage of music from cues much earlier in the film acts as a unifying element, building the score into an integrated unit, in much the same way as the recapitulation section functions in sonata form.

TABLE 15

CUE 31(16-4/5) - "A GOOD START" - THEMATIC BREAKDOWN

1. E1(i) (bars 1-4) development - horns
2. E1(i) (bars 4-7) development - strings
3. E1(ii) (bars 2-5) development - winds
4. E1(ii) (bars 6-7) development - strings/harp
5. E2 - lower strings; E1(i) fragments - solo trumpet; solo horn; violins
6. Full Orchestra - E1(i) - violins; E2 accompaniment in oboes and clarinets
7. Full Orchestra - E1(ii) - violins/horns; E2 in percussion
8. E2 - full orchestra

XXXII. Cue 32 (16-6) - "End Titles"

The "End Titles," being essentially a repeat of the "Main Title," also serves in the recapitulatory capacity discussed above. Much longer than the piece of music which opens the film, this cue includes a rendition of Ilia's theme. The appearance of this theme acts as a middle section in a basically ternary structure.

TABLE 16

CUE 32 (16-6) - "END TITLES" - THEMATIC BREAKDOWN

1. E1(i) x 2 - trumpets
2. E1(ii) x 2 - horns/violas
3. E1(i) x 2 - trumpets

4. Bridge passage
5. I(i) x 2 - violins
6. I(ii) - solo trumpet
7. I(i) - violins
8. E1(i) fragment - horns/oboes
9. E1(i) x 2 - trumpets
10. E1(ii) x 2 - strings
11. E1(i) - trombones
12. E1(i) - trumpets

Chapter Four

Influences on the Evolution of Style

Stylistically, Jerry Goldsmith's music is somewhat enigmatic. Unlike many other composers for film, his music is not always instantly recognizable as particularly "Goldsmithian." There are of course certain signposts in his writing, but in general, his ability to successfully change musical genre and idiom to suit the needs of a particular film is quite remarkable. The bulk of the score for Star Trek - The Motion Picture is written in a late-nineteenth century orchestral style characteristic of the last stages of the Romantic era. Other influences abound, including concepts from the Impressionist school and some very avant-garde twentieth-century techniques.

Detailed study of the orchestral repertoire, especially from the Romantic period forward, will inevitably reveal thematic similarities and parallels in music for film. After all, when dealing, as in the case of Star Trek, with a basically tonal idiom, it is very difficult for the contemporary composer to write totally original thematic material. Thus, the film composer chooses the style and approach from the vast storehouse that comprises the history of music. Goldsmith is no exception, selecting seemingly disparate styles and juxtaposing them alongside one another in a pastiche that he manages to integrate into a unified score. Whether this choice of suitable styles is a conscious process is difficult to judge. However, it seems likely that during the "spotting" of a picture (deciding where music should be placed), certain pieces probably spring from the sub-conscious and shape

the composer's thinking. When faced with the prospect of producing a symphonic score in the space of five to six weeks, this would probably be a worthy ability to have.

Another factor which could shape the composer's stylistic thinking is guide- or temp -tracking, whereby the director or producer places excerpts of existing music on the soundtrack, to give the studio executives and the composer an idea of what he is looking for. Goldsmith does not use this technique as he feels it psychologically constricts his creative imagination.[1]

Whatever the process, Goldsmith uses his tremendous sense of drama to find just the right musical ideas to enhance the film subject. His skill lies not so much in being an innovator of new musical styles (though he is almost endlessly inventive in the complex colouristic sound textures and effects he creates in his film scores including new sounds on traditional instruments), but a master synthesist who can combine the right mixture of musical styles to create a perfect marriage between music and film.

In comparing the strong effects of cross-influence among the works of the great past composers, Irving Kolodin discusses this concept of musical synthesis across the centuries. He sums up the composer/synthesist idea in the following quote:

> A mating of two sources seemingly remote from each other may grow the flower and bear the fruit in which the seed of a wholly new strain is contained: [for example] a blend of Schubert and Wagner producing Wolf, or Chopin and Liszt

[1] Derek Elley, "The Film Composer: Jerry Goldsmith," Films and Filming, 25 (June 1979), p. 21.

> becoming Scriabin, or Mussorgsky-Tchaikovsky-Debussy emerging as Stravinsky.[2]

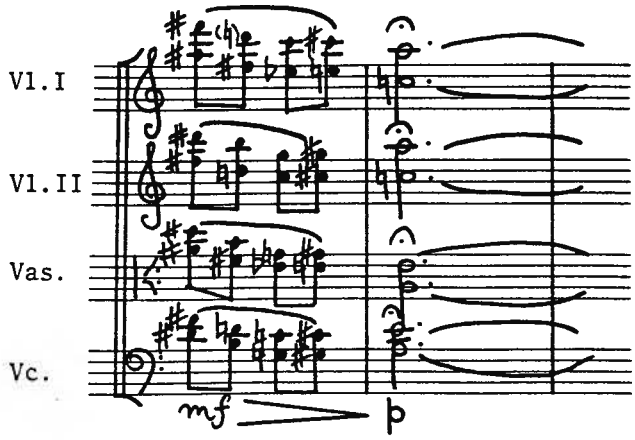
This statement applies unquestionably to Goldsmith who with each score, has the opportunity to draw from the enormous collection of music written not only in the Western tradition, but from all over the world.

It is interesting to note in the search for major influences on the music for Star Trek - The Motion Picture, that Goldsmith has in the past fondly referred to this score as his "Vaughan-Williams score." An investigation of the nine symphonies of Ralph Vaughan-Williams reveals unmistakable influences in orchestration and certain thematic references which are very similar in style and structure to those in Star Trek.

In terms of orchestration, Goldsmith, like Vaughan-Williams, uses the string body of the orchestra very effectively. There are numerous passages for divided strings in which homophonic chordal structures are played with every note of the chord doubled in different octaves by different instruments. Scoring of this type produces very lush thick string textures similar to those frequently employed by Vaughan-Williams in his symphonies and the Fantasia on a theme of Thomas Tallis (see Example 1).

[2] Irving Kolodin, The Continuity of Music: A History of Musical Influence (New York: Knopf, 1969), p. 3.

Example 1. "V'ger Flyover" excerpt.



This technique of separating orchestral forces into distinct families or choirs is derived from French Impressionism and is one which Vaughan-Williams most probably learned through his study with Ravel.[3]

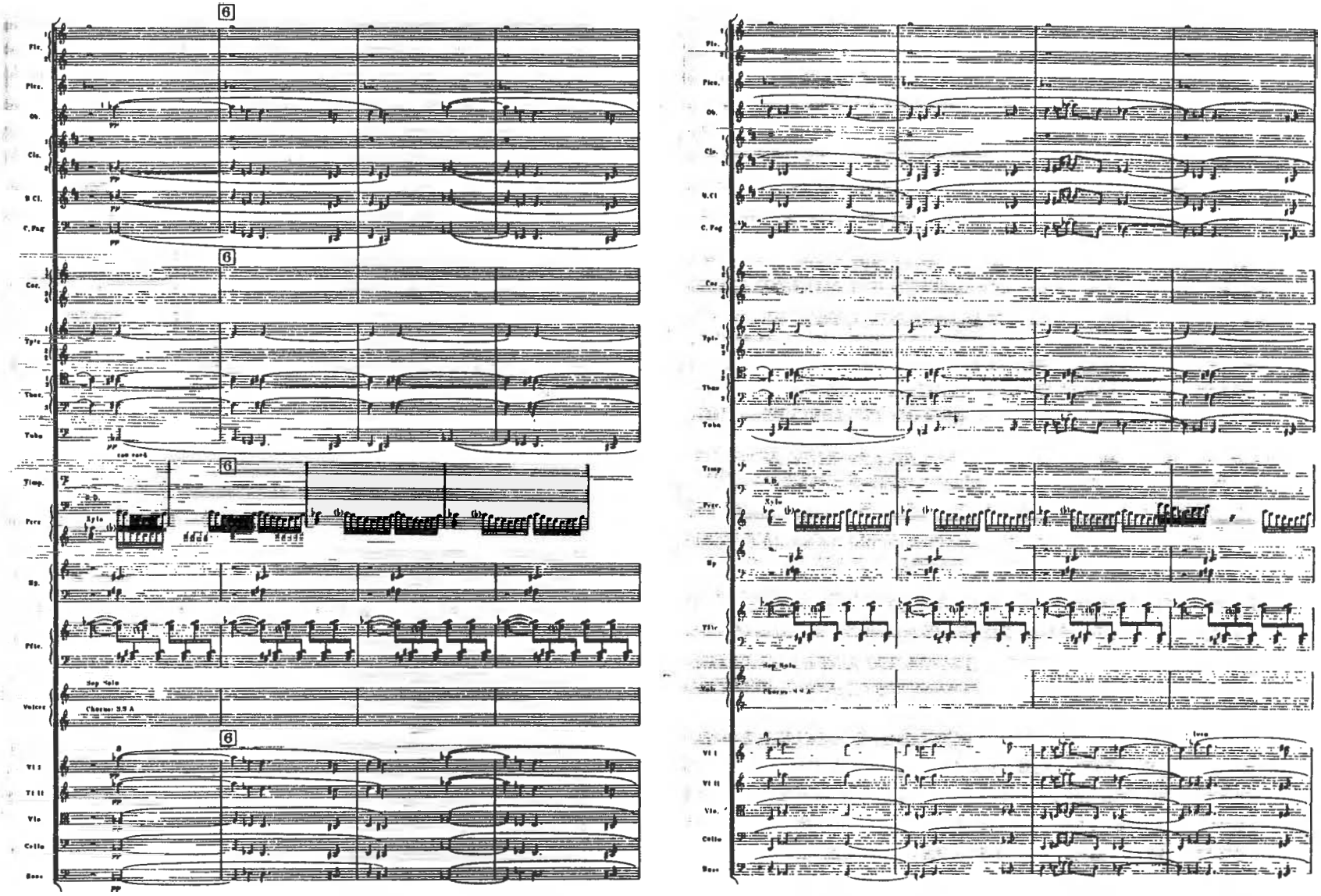
Use of the string section in unison or octaves is also employed frequently by Goldsmith, particularly at climaxes or other dramatic moments where the scoring is very rich. He also features string unisons in quiet thematic writing, such as Spock's theme 1 for example. Evidence of this style can be found in the middle section of the second movement of Vaughan-Williams' Symphony No. 6 in e minor (1948) where a melodic line featuring string unisons and doublings very similar in textural colour to S1 appears in bar 30 (see Appendix C).

Other such similarities to Spock's theme occur in the first movement of Vaughan-Williams' Sinfonia Antartica (1952), where again the strings are used in very still octaves (see Example 2).

[3] Elliot S. Schwartz, The Symphonies of Ralph Vaughan-Williams (Amherst: University of Massachusetts Press, 1964), p. 183.

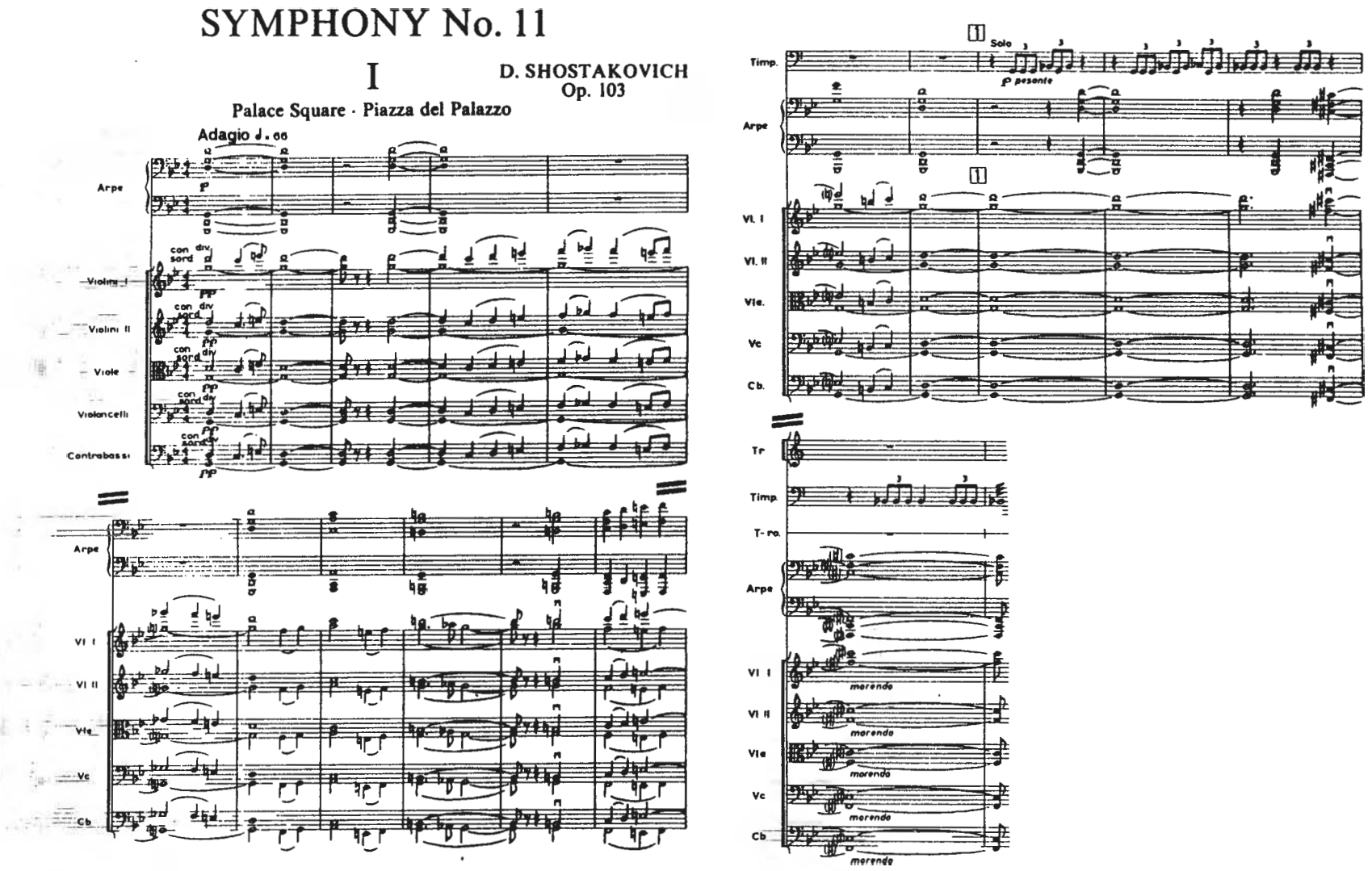
Example 2. Vaughan-Williams, Sinfonia Antartica,

First movement, bars 59-67.



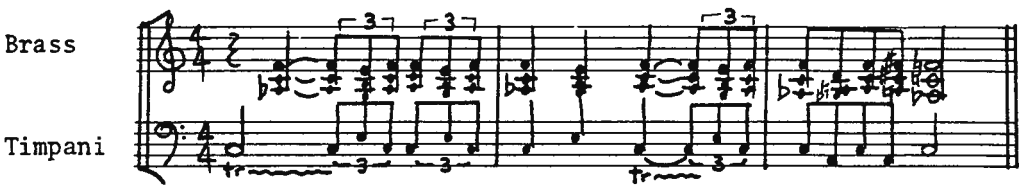
Further examples of such unison string textures can be found in Shostakovich's Symphony No. 11 opus 103 (1957) (see Example 3).

Example 3. Shostakovich, Symphony No. 11, First movement, bars 1-18.



In terms of specific thematic references to works by Vaughan-Williams, a striking example can be found in the same section of the second movement of the Symphony No. 6 as the afore-mentioned reference to Spock's theme. A triplet figure, first stated by the brass and timpani, and later the strings and winds, is very similar in architecture both harmonically and rhythmically, to the V'ger theme V2 (see Example 4).

Example 4. Vaughan Williams, Symphony No. 6, Second movement, bars 27-29.



(See Appendix C for Vaughan-Williams' characteristic placing of this thematic material in different orchestral choirs.)

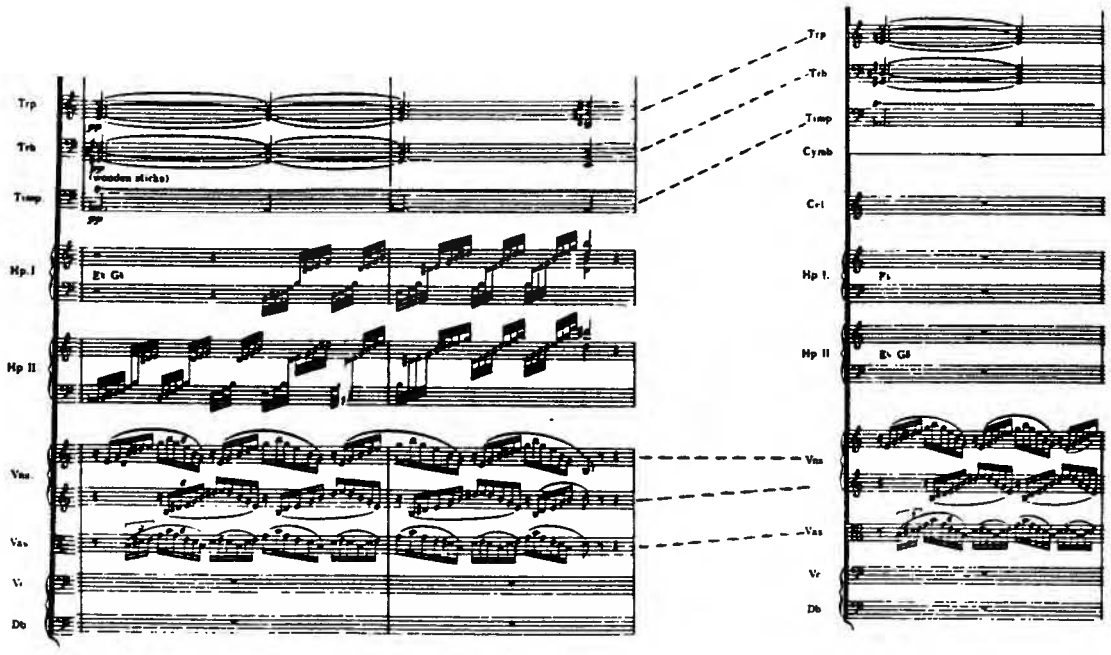
Further examples of V'ger-style music can also be found in the opening of Sinfonia Antartica's third movement, entitled "Landscape."

Goldsmith's use of the V'ger/Ilia theme V4 as a melody characteristically played in the lower registers can be parallelled with the long slow brass lines in this section. The chord changes based on mediant relationships (e minor to C-sharp major) in bars 32 to 37 are also characteristic of the harmonic style Goldsmith chose for certain V'ger sequences (see Appendix D). It is difficult to tell what mental processes may have inspired Goldsmith to write in this extremely effective style, i.e., whether they were purely intuitive or borne of psychological audio/visual associations with

the score from Scott of the Antarctic (1947) on which Sinfonia Antartica is based. Perhaps he felt that Vaughan-Williams' musical depiction of the endless landscapes of snow and ice at the South Pole could be successfully transferred into similar scenes of vastness in outer space.

Vaughan-Williams though was not the only composer to experiment with such orchestral atmospheres. This style of music is also found in a famous work of another well-known British composer, Gustav Holst. In "Neptune," the last of The Planets opus 32 (1915), long, slow, mysterious harmony changes move beneath rising sextuplet figures in the violins based on a minor triad with an added raised seventh like the V5 triplet ostinato (see Example 5).

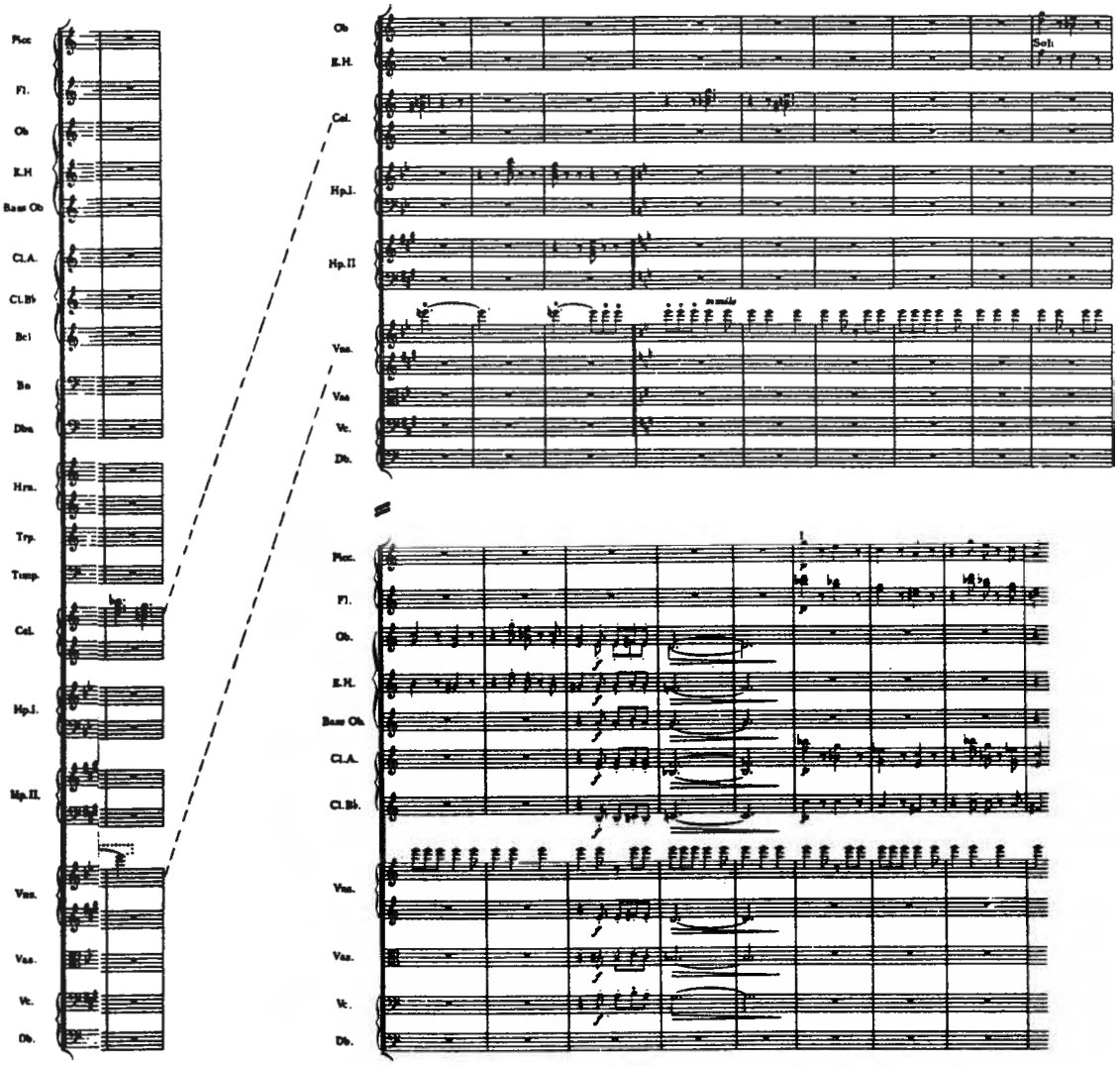
Example 5. "Neptune," bars 22-24.



Another similarity with themes from Holst can be found in Goldsmith's "jovial" three-chord S2 figure, played when Spock

first joins the Enterprise. These chords are very reminiscent of a similar figure which appears frequently in "Mercury." Even their treatment, moving as a three-chord motif from one instrument or instrumental group to another, is similar (see Example 6).

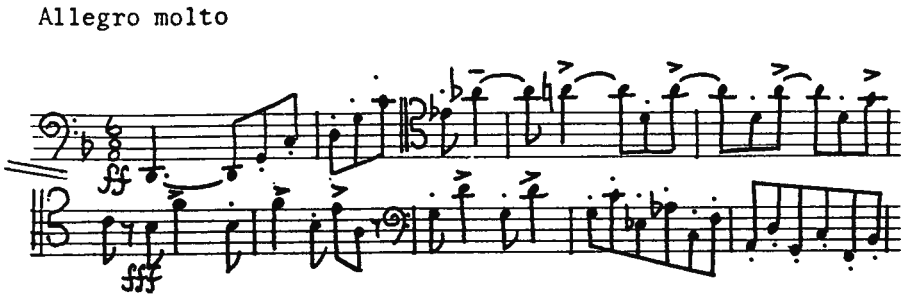
Example 6. "Mercury," bars 38-56.



(See Example 10(c) in Chapter 3 for an excerpt from the relevant section of Goldsmith's score.)

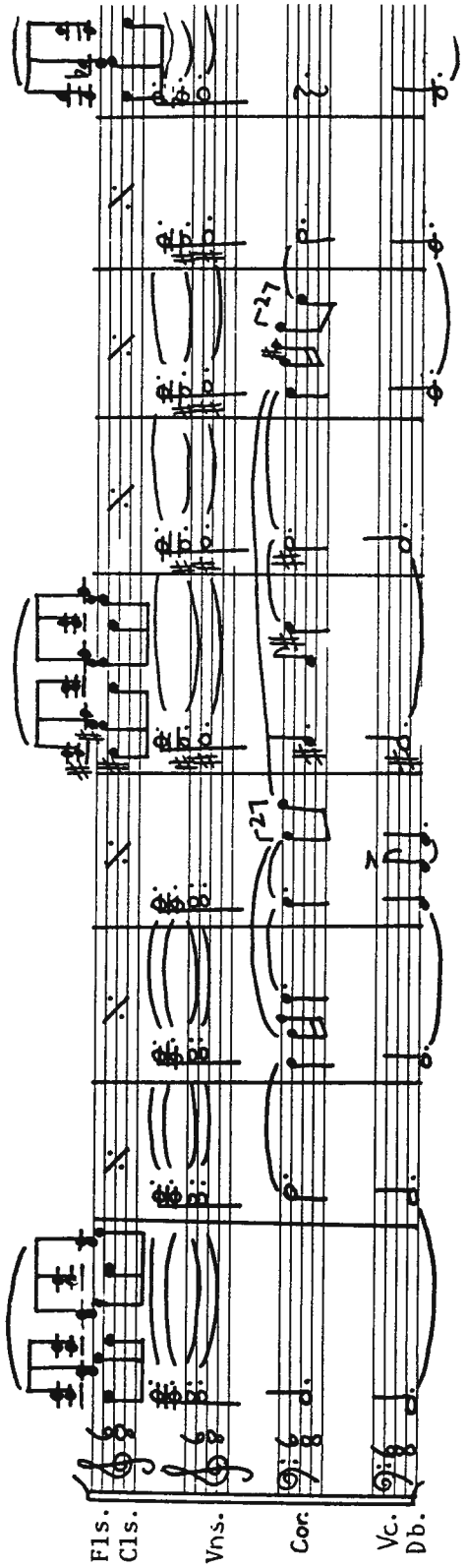
Before leaving Vaughan-Williams completely, two more striking similarities between parts of his symphonies and the Star Trek score should be mentioned. Goldsmith's Klingon theme, for example, is very similar in architecture to the theme introduced by the bassoons at the very beginning of the Scherzo from Vaughan-Williams' Fourth Symphony (1935), employing similar use of the interval of a perfect fifth (see Example 7).

Example 7. Vaughan-Williams, Symphony No. 4, bars 10-18.



The next comparison concerns not so much a theme, but a harmonic and orchestrational similarity with the Epilogue at the end of the last movement of the London Symphony (1914, rev. 1920). This section strongly resembles cue 6 in the film, where two crew members are killed by a malfunction in the transporter room. Both pieces consist of long textural chords over which play slow brass lines, each starting with an interval of a perfect fourth (in the Vaughan-Williams played by three trombones and in the Goldsmith, solo horn). These chords are sustained for a number of bars each before suddenly shifting to the next. The harmony of each chord is emphasized by moving triplet or sextuplet figures based on the triad of that chord (see Example 8).

Example 8. "Malfunction" excerpt (Concert pitch).

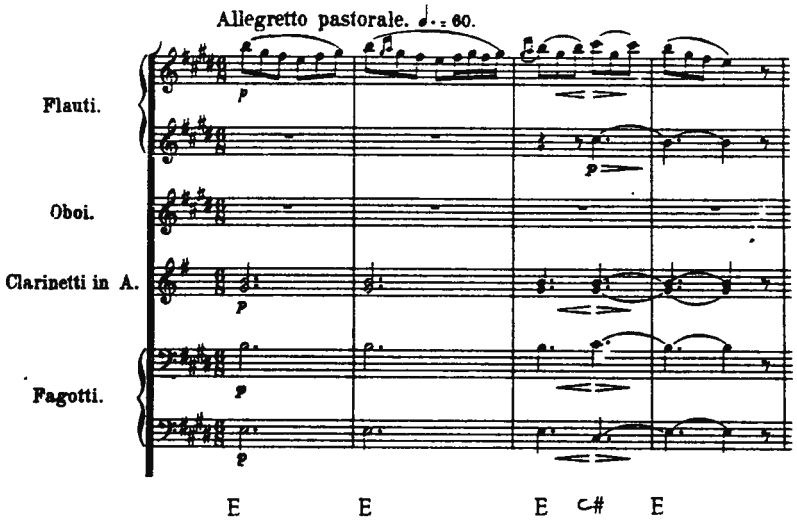


(For the corresponding examples from the London Symphony see Appendix E.)

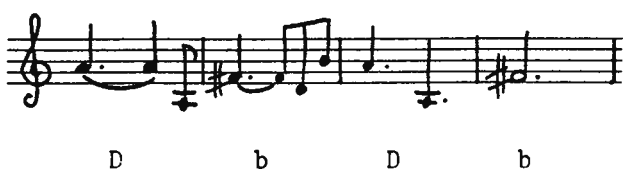
Influences from other composers abound in the score, some more obvious than others. For example, elements of Ravel and French Impressionism are strong in the "Meld" sequence at the end of the film. "Morgenstimmung" or "Morning Mood" from Grieg's Peer Gynt Suite No. 1, opus 46 (1876) contains traces of both the main Enterprise theme and the Ilia love theme. The parallels are manifold and include harmonic, melodic and orchestrational characteristics.

For instance, the chord change from E major to c-sharp minor in bar 3 of "Morgenstimmung" is the same harmonically as the changes from D major to b minor which characterize bars 2 to 5 of E1(ii), both examples featuring harmonic displacement of a minor third (see Examples 9(a) and (b)).

Example 9(a). Grieg, "Morgenstimmung," bars 1-4.

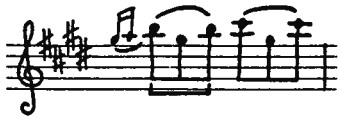


Example 9(b). E1(ii), bars 2-5.



This interval of a minor third also plays an important role melodically. The third bar of the Grieg features the downward leap of a minor third from B-natural to G-sharp and back to B-natural (see Example 10(a)). Bar 4 of I(i) features a similar structure, this time in crotchets moving from E-natural to C-sharp and back again (see Example 10(b)).

Example 10(a). Grieg, "Morgenstimmung," bar 3.

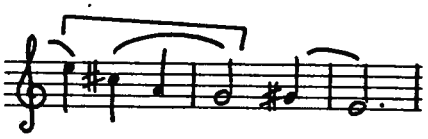


Example 10(b). I(i), bar 4.

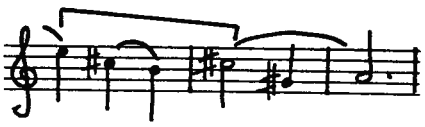
A minor third is also prominent in bar 4 of "Morgenstimmung" (see Example 11(a)) which has a similar melodic contour to both the first- and second-time bars of I(i) (see Example 11(b)).

Example 11(a). Grieg, "Morgenstimmung," bar 4.

Example 11(b). I(i), bars 6-8;



bars 14-16.



Returning briefly to the concept of psychological association, it is interesting to compare what Goldsmith does in Star Trek with other great film composers. Goldsmith is a self-confessed admirer of past greats such as Alex North, Alfred Newman and Bernard Herrmann,

and one section of the Trek score in particular contains a combination of images and music which pays more than a passing homage to Bernard Herrmann. The music accompanying the Enterprise's first venture into the Cloud is based around theme V5, the triplet quaver ostinato figure built on a minor triad with an added raised seventh. On seeing the images and patterns from the V'ger Cloud on the screen during the spotting of the picture, it seems apparent that somewhere in Goldsmith's sub-conscious, the geometrical designs used in the titles for Alfred Hitchcock's 1958 classic Vertigo surfaced, together with Herrmann's opening music. Like the V5 theme, Herrmann's idea is based on an arpeggiated triplet ostinato with the same harmonic structure.

Sections of the music composed by Herrmann for the film Mysterious Island (c. 1960) display characteristics drawn from Vaughan-Williams, similar to those used by Goldsmith in the Star Trek score. Goldsmith's first use of this harmonic and orchestrational style, perfect for underscoring both the numinous and the awe-inspiring was not a new discovery made in 1979 however. There is evidence of it in his score for the Twilight Zone television episode: "Back There" (1961).

Not confining himself to a tonal orchestral language, Goldsmith also devises orchestral textures and colouristic effects inspired by such twentieth-century masters as Penderecki and Ligeti. Examples of these techniques have already been discussed in Chapter 3.

Referring back to Kolodin's quote earlier in this text concerning the synthesis of compositional styles, it is clear that Goldsmith draws inspiration not from one or two composers, but from an enormous number of styles. In the case of Star Trek - The Motion Picture, these include Wagner, Grieg, Richard Strauss, Debussy,

Ravel, Vaughan-Williams, Holst, Bartok, Prokofiev, Stravinsky and Penderecki, to name only the major influences.

Chapter Five

I. Mechanics of Scoring A Film

In deciding whether or not to score a particular motion picture, the composer may have the opportunity of reading the film's script beforehand. This was the case with Goldsmith, when hired to score Star Trek - The Motion Picture. He found certain musical ideas sprang to mind throughout his perusal of the screenplay, but most of these had very little to do with the eventual score produced.[1] As a matter of policy, Goldsmith's main purpose in reading a script is to confirm his commitment to score the film, thus confining his involvement to a strictly post-production function.[2]

> I can't even write a theme for a picture from the script for the simple reason that we are dealing in a visual medium. I am making an attempt to comment on the emotional elements that are not visible on the screen. You can't get that from a script because you have no idea what's going to appear on the screen. I have to wait until I see it.[3]

In post-production, the composer firstly views a print of the nearly-finished film (called a "rough cut"). As discussed in Chapter 2, the initial version Goldsmith worked with was dramatically incomplete. Besides the absence of special optical

[1] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, p. 1582.

[2] Donald Chase, ed., Filmmaking: The Collaborative Art (Boston: Little, Brown, 1975), p. 288.

[3] Chase, p. 287.

effects, the rough cut may lack some of the sound effects not recorded during the actual filming of the movie, and of course, the score. In a futuristic science-fiction movie like Star Trek - The Motion Picture almost all of the sound effects are engineered and dubbed onto the soundtrack during post-production.

At the first screening, the composer attempts to absorb the style and content of the film, usually without any conscious consideration of the musical problems involved. He then runs the film again, reel by reel. (Each reel contains nearly 1000 feet of film and lasts about ten minutes.) At this second running, called the "spotting session," the producer and director are present as well as the film editor and music editor.[4] It is here that decisions are made by general discussion concerning which parts of the film are to receive music.

Spotting is an exacting task that demands great precision. Once it is decided, the music editor makes up what is called a "cue breakdown." To do this he runs the film on a machine called a Movieola, "which permits the action to be observed through a small viewing screen, about four inches wide, while the sound issues from a speaker mounted next to the viewer."[5] Counters, connected to the driving mechanism by means of gears, show the length of film footage that has passed through the machine and the time elapsed. The music editor sets both counters at zero

[4] "The music editor does not, as the name implies, edit music but he edits film containing music. He assists the composer with the many technical problems that arise in the course of preparing a movie score and at the recording sessions, as well as thereafter." Ernest Gold, "Ernest Gold on the Mechanics of Scoring, or The Sheer Hell of Trying to Fit Music to a Picture," in Music for the Movies, Tony Thomas (South Brunswick: A.S. Barnes, 1973), p. 27.

[5] Gold, p. 27.

and works through every cue, writing out a minutely-detailed description of everything that can be heard and seen for the entire duration of the cue in question. He attaches precise timings to every bit of description down to fractions of a second (usually one-tenth of a second).

After breaking down the picture, the music editor prepares "cue sheets" for the composer, indicating all of this vital information (detailed descriptions of action and music and the relevant timings) in written form.[6]

While this is being done, the composer starts working on thematic material and determining the general mood, style and atmosphere of the score. Goldsmith composes at the piano and frequently refers to the Movieola in his studio, running sections with numerous repetitions to accurately judge changes of scene, mood or pace. Before commencement of composition, a decision has to be reached as to which timings on the cue sheet warrant musical emphasis - - these usually coincide with places of dramatic importance. "It is at this point in the process of scoring a film that a composer's sense of drama, and especially drama as it relates to the cinema, is of the utmost importance."[7] As the musical sketches are completed, timings are added directly into the score. These serve as signposts for the conductor during recording sessions.[8]

In scoring a particular scene, a great deal of care must be taken to avoid a conflict between music and dialogue, as such a

[6] Gold, pp. 27-28.

[7] Roy M. Prendergast, Film Music: A Neglected Art (New York: Norton, 1977), p. 239.

[8] Gold, p. 28.

conflict would prove harmful to both. Scoring under dialogue is a very delicate art, determined ultimately by the question of aural clarity.

On the subject, Goldsmith says:

> Naturally I'm not going to write full brass or wild percussion under dialogue. I think that the timbre of the voice - the placement of the voice range of the actors is extremely important. If you have characters speaking in the middle range, you're not going to write in the middle range. You must stay out of their tonal range with the orchestra. One must keep [the] music as simple as possible, but while it may sound contradictory, there are times when a certain emotional involvement of the music helps too.[9]

By this, he means that music can add the necessary emotional input to a scene with weak or poorly-delivered dialogue. He adds:

> I like to use strings and woodwinds - in many cases I'll use nothing but strings or a solo woodwind and strings under dialogue. I like to make it as sustained as possible and as simple as possible . . . I don't like to get too complicated contrapuntally or rhythmically under dialogue. If it is a very melodic treatment of a theme, I might try to do it in the simplest, cleanest way."[10]

Sound effects are also an area to be treated with care. Musical excitement and punctuation can interfere with these carefully designed and engineered sounds, especially when the

[9] Earle Hagen, Scoring for Films (New York: Criterion Music Corp., 1971), p. 161.

[10] Hagen, p. 161.

registers used by the orchestra encompass the frequency range of the effect.

Owing to the great pressure under which a composer must work, it is the usual practice to make more or less comprehensive indications of orchestral intentions on his sketches but to leave the job of actually writing out the full orchestral score to an orchestrator.[11] Goldsmith's orchestrator, Arthur Morton, gets a totally-complete eight-stave sketch from the composer with all parts and instrumentation specified. Goldsmith says:

> I've been with him so long, we have a very smooth working relationship. I give him a complete sketch of whatever I'm doing and he takes that off the white paper and puts it onto the yellow paper as we say." [12]

Morton's role is really that of a musical confidant and glorified copyist, who converts the short-score sketches into a conductor's score.

When the score is finally completed, orchestral parts are copied by studio copyists and the instrumentalists hired by a contractor. The contractor is responsible for contacting the musicians the composer wants in his recording session. He is responsible for knowing the union contracts for employing union musicians, and must be familiar with appropriate pay scales. In addition, the contractor ensures that the musicians bring their proper instruments to the recording sessions. He controls

[11] Gold, p. 28.

[12] Jones, p. 1589.

their rest breaks and advises the composer how much rehearsal time has been used and how much is left.[13]

In preparation for the days of recording, the music editor makes ready certain aids to synchronize music and picture, which are at the disposal of the composer and conductor during the recording session. These aids, such as "click tracks" and "picture cueing," are integrated into the print of the film that is projected on a screen mounted behind the orchestra while the score is being recorded. The conductor can, if he wishes, follow the dialogue by means of ear-phones while conducting the music. He also has a large stop-watch mounted on the podium which is started simultaneously with the music and affords him a close check on the timings indicated in the score.[14]

The click track mentioned above is, in effect a metronome beat that is run simultaneously with the film for the conductor and orchestra to follow using ear-phones. Click tracks are made by hand by the music editor using the following process:

[13] William Broughton, "Studio Musicians in Hollywood," The Instrumentalist, Sept. 1978, p. 45.

[14] Gold, p. 28.

> Film runs through the camera and projector at a rate of 24 frames per second. The material used to record music for films is called magnetic track (or "mag track") and looks exactly like standard 35 mm film except that it is coated with an oxide surface like that on commercial sound tape . . . Magnetic track has the same number of sprocket holes (four per frame) as optical film, and the machine that plays this magnetic track (they are called playback dummies) move the track over the sound head at the same rate of speed at which film passes through a projector: 24 frames per second. To make a click track, 35 mm opaque leader is used. When a hole is punched in opaque leader, and when this hole passes over the optical playback head, a "pop" can be heard in the sound system. This "pop" is equivalent to a "tick" on a metronome.[15]

Punching holes in the leader at equidistant intervals ensures absolute accuracy with respect to the composer's intended tempo but makes for a certain rigidity of performance that is not always desirable.

Picture cueing is a method of "free timing," or timing without use of a click track. It involves physically marking the film of a scene that the composer is writing music for. Two devices are used in this method: punches and streamers.

"Punches" are actual holes punched in the film. When the film is run through a projector, these holes give off flashes of light which are bright enough for the composer or conductor to see without taking his eyes off the score. "Punches are usually used by composers to check . . . timings within a cue, in order to make sure they are where they should be." [16]

[15] Prendergast, pp. 239-40.

[16] Prendergast, p. 243.

"Streamers" are made by scraping a long diagonal scratch over a three-to-five-foot length of film. (The lengths vary according to the composer's needs in a particular cue.) When projected, the visual effect of the streamer is a vertical line panning across the screen from left to right. When the line reaches the right-hand side of the screen (the side opposite that of its origin), it indicates to the composer the exact spot of his cue, which may be "punched" to ensure perfect synchronization.[17]

Besides the practicalities of combining film and music, one of the major problems in the recording studio is securing a balance between different sections of the orchestra which is both satisfactory to the composer and conforms to the technical processes involved.[18] This has a lot to do with microphone and orchestra placement, a responsibility assigned to the sound engineer.

Use of electronic instruments as an integrated part of the orchestra can also create difficulties. In the case of Star Trek, the individual amplifiers on the synthesizers and beam were turned down very low and all of the balancing was done in the booth where the sound signals were sent directly, out of the conductor's ear-shot. It was for this reason of balance that Goldsmith chose to spend most of the recording time in the recording booth. He wanted to

[17] Prendergast, p. 243.

[18] Roger Manvell and John Huntley, The Technique of Film Music (London: Focal Press, 1957), p. 187.

produce a cohesive performance, unhampered by the hassles of pre-dubbing the orchestra and overlaying and synchronizing the electronics afterwards.[19]

The recording stage can also be the scene of disagreements between composer and director over stylistic considerations. As Goldsmith does not usually play themes on the piano for the director or his associates,[20] it is here on the stage that the executives hear most of the music for the first time. Star Trek - The Motion Picture was not without its dramas, but most disputes were usually dissolved through artistic compromise or a little re-writing by Goldsmith. The music for such segments as the Vulcan scenes and those showing the Enterprise in its orbital dry-dock had to be completely re-written due to pressure from Robert Wise (the director).[21]

After recording is successfully completed, the music is mixed with the dialogue and sound effects onto the film's soundtrack. Known as "dubbing," this process involves the combination of all sound elements and individually-recorded tracks onto one single track. There may, for example, be a number of tracks each for dialogue, music and sound effects. Dubbing is done reel by reel, the picture being projected on a screen while from two to four "dubbing mixers" combine the sounds using a huge mixing panel.[22]

[19] Jones, p. 1591.

[20] Derek Elley, "The Film Composer: Jerry Goldsmith," Films and Filming, 25 (June 1979), p. 21.

[21] Jones, pp. 1391-92.

[22] Gold, p 29.

This stage in the recording process can be the most frustrating for the composer, for he sees much of his music "lost in the melee of other tracks." [23] Prendergast says: "Dialogue rules supreme on a film soundtrack." [24] Thus, the music is mixed in correspondingly softer or louder to suit the dramatic demands of the film. Very often a music cue is laid into the final track at a very low level so as not to cover the dialogue. Goldsmith is such a skilled craftsman, however, that he can anticipate the problems likely to be encountered on the dubbing stage, and tailor the score to suit both the requirements of the picture and the other sound elements that eventually find their way into the soundtrack.

Other functions performed on the dubbing stage include cue-overlapping and editing. As discussed early in section II of Chapter 3 (see the discussion of cue 2: "Klingons"), cue-overlapping is a device whereby long cues, recorded in shorter takes, can be overlapped by the sound department to seem like one continuous piece of music. This way, if an error is made by the musicians or the conductor, they simply repeat a two-or-three-minute take, rather than starting all over again with a longer cue that would prove a much costlier exercise.[25]

When the picture is finally finished, it is often previewed in an out-of-the-way cinema to test audience reaction. Depending

[23] Prendergast, p. 248.

[24] Prendergast, p. 248.

[25] Prendergast, pp. 247-48.

on the problems uncovered, minor or major changes are made. Many of these may necessitate changes in the music as some of the affected scenes may have to be shortened or lengthened or even may be transposed with respect to their sequence.[26]

Due to the enormous pressure of the unswaying December 7 release deadline, the makers of Star Trek - The Motion Picture were not afforded the luxury of a preview, so it was released into the cinemas "cold."

This did not mean however that editing on the original soundtrack tape did not take place. At the last minute, cue 24: "Spock Walk" was shortened slightly to accommodate a change in the length of some special effects footage.[27] The end of this cue was also "re-tracked" (used again) in the film's next musical cue, when V'ger arrives in Earth orbit. This was made necessary by the fact that Goldsmith did not have time to score the inserted shot, due to the lateness of its addition.

[26] Gold, p. 30.

[27] Jones, p. 1495.

II. The Soundtrack Album

Preparing the record album of a film soundtrack for commercial release is an aspect of the film composer's art that should not be overlooked.

When the long-playing (LP) record was first invented in 1948, it represented an event that changed the music world forever. To quote Tony Thomas: "The recording industry grew into a multi-million dollar giant, with the music business becoming a major industry." [28]

It did not take producers long to realize that records were a powerful means of publicity for their films. A melodious theme or instantly recognizable song soon became the best and cheapest forms of film promotion.[29] While this encouraged a veritable explosion of scores in the sixties from poorly-talented composers writing "pop"-orientated music, it also provided the cinema public with a small number of recordings of symphonic scores from Hollywood's greatest film composers.

With the increased exposure the film and its producers received through record sales and radio broadcasts, the record album "became a major factor in scoring and composers found they were subject to at least as much, if not more pressure from the record company executives as from film producers." [30]

[28] Tony Thomas, Music for the Movies (South Brunswick: A.S. Barnes, 1973), p. 22.

[29] Thomas, p. 23.

[30] Thomas, p. 23.

If a film turns out to be a commercial success, the composer is almost guaranteed success in producing a record album. This was certainly the case with Jerry Goldsmith and Star Trek - The Motion Picture.[31] The fact that the film had a large enthusiastic fan audience before it even opened was one of the factors that lured Goldsmith into taking the project on in the first place.

The soundtrack album itself is produced from the multi-track stereo master tape made during the recording sessions. In the case of Star Trek, the album was produced from a digitally-recorded two-track stereo tape.[32] If the composer himself is producing the album, as did Goldsmith for Star Trek - The Motion Picture, he has not only the responsibilities of deciding whether or not the musicians' performances and quality of the reproduction is satisfactory, but also of choosing which cues to include on the album and in what order they should be placed. Of the process (as it applied to Star Trek), Goldsmith says:

> . . . it was like playing dominoes, . . . [taking] this piece out here, and [putting] it [back in] there . . . . Of course, certain pieces you know you're going to use. I knew I was going to use the main title and Klingon sequence, the Enterprise-in-dry-dock sequence, the end titles, and the love theme, so they were like the four corners, . . . [the] starts and stops for both sides [of the album] . And then you keep playing [around with the cues] until you feel that [the album] moves.[33]

[31] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, p. 158.

[32] Jones, p. 1738.

[33] Jones, p. 1738.

The task of actually editing the chosen cues together in the order in which they appear on the album lies with the editing engineer. No editing within cues or re-mixing was done for any of the cues - - they were placed on the album in exactly the same form in which they appeared in the film.[34]

(For details of the production personnel and the cues used on the album, see Appendix F.)

[34] Jones, p. 1738.

Chapter Six

I. The Composer's Role as Part of the Filmmaking Team

The composer of music for a motion picture is only a small cog in the enormously large wheel that is the production team. This team is organized into a strict hierarchical structure, one which is almost standard in the production of any feature film. Manvell and Huntley outline the team as follows:

> The initiation of a picture and the overall financial responsibility for it lie usually with the producer. [He guides the film's production] through from beginning to end, either personally or by delegation of authority. The actual creative process of making the picture is the responsibility of three main groups, represented by the director, the scriptwriter (who may be a professional screenwriter providing original material, a novelist, or a playwright), and the actors (stars, featured players, small-part actors and crowds). In order to carry through the technical processes involved, this team is backed by the four technical branches of film production, i.e., design (including art direction, set construction, costume design, make-up, hairdressing, property work and set decoration), photography (including special effects), sound (including floor recording, effects, post-synchronization, re-recording and music), and editing (including assembly cutting, track-laying, laboratory liaison, and post-production processes).[1]

The film's composer may have to interact with people in each of these groups and technical branches at some stage during the

[1] Roger Manvell and John Huntley, The Technique of Film Music (London: Focal Press, 1957), p. 178.

process. In order that the production runs as smoothly and amiably as possible, it is vital that he always recognizes the importance of his role as a member of a larger creative team.

The most important relationship for a composer in film, is that between himself and the picture's director. Nobody knows more about the film, its subtleties of plot, characterization and overall feel than the director, who is ultimately responsible for the artistic presentation of the film. He is the filmmaker and together with the composer, must discuss the style of the music, in what scenes it is used, whether or not a particular sketch works in a particular scene and so on.

Untroubled dialogue between director and composer is absolutely vital in order to achieve a desired and unified end-product. To quote Goldsmith: "It does not follow that a great artist in one field is necessarily sensitive or aware of the other art forms, especially music." [2] A free exchange of ideas, whether good or bad, must take place in an atmosphere of mutual artistic respect as both artists constantly work towards a common goal - - the film's total and final effectiveness.[3]

In interviews, Goldsmith talks frequently about the director-composer relationship, for he believes very strongly in total understanding between composer and director. He has worked with many directors and found a great variation in the levels of their appreciation and knowledge of music. Some want to use music in

[2] Jerry Goldsmith, "Vital Dialog in Film Making Between Director and Composer." Variety, No. 275 (May 15, 1974), 61.

[3] Goldsmith, p. 61.

their film, but lack any real understanding of it, often giving the composer a relatively free hand to mould and shape the score. Others, who have had marginal musical training or experience, assume a very dominant role in the director-composer relationship, often forcing composers like Goldsmith to write music with which they have little artistic sympathy.[4] Just as the composer must learn to adapt to the creative vision of the director, the director must in turn "learn that music can be one of the greatest dramatic assets his picture can acquire, provided he is prepared to draw on the musical imagination of the composer, and create the right conditions for him to give his best services to the film as a film."[5]

According to Goldsmith, members of this rare breed of directors "sense and understand not only the beauty of musical expression, but the dramatic power it possesses to impart into a scene an emotional impact or character definition that is impossible to achieve by any other creative means."[6] One such man is Franklin J. Schaffner, with whom Goldsmith has worked on many occasions. Goldsmith considers Schaffner to have a true understanding of music, i.e., a knowledge and awareness of the dramatic value of music. He communicates with Schaffner very easily and engages in constant dialogue when collaborating on a picture.[7]

[4] Derek Elley, "The Film Composer: Jerry Goldsmith." Films and Filming, 25 (June 1979), 20.

[5] Manvell and Huntley, p. 198.

[6] Goldsmith, p. 61.

[7] Donald Chase, Filmmaking: The Collaborative Art (Boston: Little, Brown, 1975), p. 278.

Goldsmith puts it thus:

> With Schaffner - and I've said this so many times - it's different: every one of his pictures I go crazy on because they're so complex in their characterizations, but I feel that every one I've done for him has represented some turning point in my growth as a composer - Patton, Planet of the Apes, Papillon, Islands in the Stream and, most definitely, The Boys from Brazil, the best score I've done in a long time. [8]

In the case of Star Trek - The Motion Picture, the director Robert Wise and Goldsmith had previously worked together (in 1966 on The Sandpebbles), so a working relationship was already established. Wise came to Star Trek with wide experience in the genre of screen musicals. Preston Jones relates this experience to Star Trek with the comment: "Goldsmith's score . . . is such a prominent feature of Star Trek's screen dramatics that the film might also be called 'Robert Wise's third musical,' after The Sound of Music (1965) and West Side Story (1960)." [9]

Goldsmith describes working with Wise on Star Trek as follows:

> Most directors find it really difficult to communicate with you in musical terms, but Bob is such a pro [and has] done enough films that he can express musically what he wants. It may take a while - - we were going around in circles with each other for the first month or so - - but then, after we got into

[8] Elley, p. 20.

[9] Preston N. Jones, "Return to Tomorrow: The Filming of Star Trek - The Motion Picture," TS, Oral history on the making of Star Trek - The Motion Picture, p. 1409.

> the groove again, we could really get across to each other. I was very careful as to what was wanted - - I'd [go to] great lengths in discussing . . . exactly what he was looking for, and also what I wanted and what I felt. Then, I was getting to distinguish what he would like and what he wouldn't like. But, it wasn't a matter of writing [just] for him [though], because [he had a] dramatic instinct [that was always] right, so I jumped straight to that, [translating] it into musical terms.[10]

As mentioned in Chapter 5, there were occasional artistic disagreements between Wise and Goldsmith, but nothing major.

Wise let Goldsmith spot the picture himself.

> I like to let [the composer] view the picture a time or two . . . and come back with his spotting . . . . Then I will look it over, and in some places he will have music I hadn't figured on, and I will question him about it and whatnot . . . . Sometimes there will be sequences or places where I thought there would be music and he doesn't have it, so we talk it out and find out why, . . . maybe he'll see my point and decide to put it there, and maybe I'll see his point in the other place.[11]

After the spotting was completed, Wise and Goldsmith discussed the music in general terms and the major themes Wise thought would be required: for the Enterprise, the Ilia/Decker relationship, V'ger and the Klingons.[12]

[10] Jones, p. 1390.

[11] Jones, p. 1361.

[12] Jones, p. 1362.

Of these discussions, the film's editor, Todd Ramsay, said:

> [Goldsmith and Wise] had several lengthy discussions about the [themes] . . . [These] involved, I think, the dramatic approach to certain scenes, in terms of what Bob felt their relevance was in the film, what their import should be, and what he would like the music to realize. In no way did he ever express to Jerry anything specific, because he trusts and reveres Jerry's talent far too much for that.[13]

Goldsmith finds trying to describe his music in words a relatively pointless exercise. He says:

> Music is a language, . . . its meaning foreign until . . . translation, and that can only be achieved by its performance. [Not] until its realization by whatever combination of instruments it was created for, can the real intent of the composer be understood.[14]

Thus, as mentioned in Chapter 5, much of the score was first heard by the director on the recording stage. The following quote describes the difference of opinion that arose over Goldsmith's scoring of cue 5: "The Enterprise," and the artistic compromise reached to salvage the situation.

> The first time Wise heard the dry-dock sequence he disagreed with the approach I'd taken and he

[13] Jones, p. 1357.

[14] Goldsmith, p. 61.

> was right. The basic problem was [that] I didn't write a theme as such, I based the music on a four-note motif. I had all the time in the world to write the sequence, and I got all involved from the symphonic standpoint . . . . It was a marvellous piece of music, . . . [a] really terrific . . . piece of concert music. But, when I saw it put together with the picture, I said, "It's just dying. It just doesn't work." So, I went home and wrote a whole theme. I figured "We've got to have a tune," in essence. So, it wasn't a [problem] with the entire piece. In what I re-wrote, I was still able to pull out sections of the original and put them in with this tune . . . . The disagreement [with Wise] was no big deal . . . . What I had before was merely a motif, it was much more fragmented. What Wise wanted was a tune. So I took [the motif] and expanded it, and it became the main theme of the picture.[15]

When the score was eventually completed, recorded and dubbed, Wise was very pleased with the final product. Jones has quoted him as saying:

> It's an excellent score. I told Jerry, "I really like it. I don't think I've ever had a background score that I felt contributed so very much to whatever is the final result of the film as yours does. It's wonderful." [16]

[15] Jones, p. 1392.

[16] Jones, p. 1408.

Conclusion

The score for Star Trek - The Motion Picture represents a pinnacle of achievement in Jerry Goldsmith's career. Like many of his scores, it displays the enviable characteristics of both compatability with the film and musical quality. In terms of appropriateness, he has managed to produce music relating so intimately to the visuals that it represents a total marriage of the two art forms.

For Star Trek, Goldsmith created music that not only aurally pleases, but at the same time, cleverly plays upon the minds of the audience. To quote Tony Thomas:

> This is the psychology of scoring, being able to shade emotions, to lighten or darken moods, to heighten sensitivities, to imply, to suggest, to define character and refine personality, to help generate momentum or create tension, to warm the picture or cool it, and - most subtle of all - to allude to thoughts that are unspoken and situations that remain unseen.[16]

In Star Trek, there are many outstanding examples of this craft, particularly in the sequences relating to the Cloud and V'ger. Goldsmith's music captures the awe inspired by the concept of this mighty machine consciousness travelling to Earth in search of its Creator. The metaphysical and quasi-religious implications of this quest are enhanced to a breath-taking degree by Goldsmith's

[16] Tony Thomas, Music for the Movies (South Brunswick: A.S. Barnes, 1973), p. 17.

creative genius. His innovative orchestrational techniques, command of thematic development, orchestral textures and lyrical melodic figures all combine to produce a musical accompaniment that sweeps the audience along. The psychological implications of his scoring compliment the screen action so completely that the full impact of its effectiveness can be recognized only by those fortunate enough to have viewed the film both with and without music. It is this musical imagination that has earned him the status he now enjoys within the film industry.

Working in a medium that has the largest audience of any of the arts, the film composer is responsible for directly influencing the musical tastes of society, thus producing a cultural product of great importance.[17] In much the same way as Bach and Mozart functioned in their day, providing weekly commitments to the church or their patrons,[18] the film composer produces a volume of music which ultimately remains as a record for future generations of the musical styles of today.

As a relatively new art form, film is perhaps the least-explored in terms of its possibilities for audio-visual combination. With the current advances in recording technology, the opportunities for experimentation by the film composer are increasing all the time.

> Hopefully, idealistically, . . . film will one day take its place . . . as a free, unrestricted outlet for a composer's

[17] Lawrence Morton, as quoted by William H. Rosar in "The S.P.F.M. - History and Goals," The Cue Sheet, 3, No. 1 (1986), 1.

[18] Thomas, p. 19.

> imagination. Ralph Vaughan Williams once said, "Film contains potentialities for the combination of the arts such as Wagner never dreamed of." In the meantime, the best film composers continue to wage a kind of guerilla warfare in the underbrush of contemporary harmony and counterpoint, battling the disdain of the critics, the indifference of the greater public, the commercial pressures of the recording industry and - worst of all - the lack of musical understanding of film producers and directors.[19]

In order to survive in the film industry, a composer must have the necessary personality and creative abilities to rise above the problems inevitably associated with his craft. To quote Tony Thomas:

> Franklin Schaffner makes this comment: "Jerry Goldsmith is an artist who meets all the demands upon the composer in film. He communicates, integrates, subordinates, supports, and designs with discipline." His contribution in other words, is precisely what film scoring is all about.[20]

[19] Thomas, pp. 16-17.

[20] Tony Thomas, ed., Film Score: The View from the Podium (South Brunswick: A.S. Barnes, 1979), p. 223.

Appendix A

Jerry Goldsmith: Filmography

1957 - Black Patch

1959 - City of Fear

Face of a Fugitive

1960 - Studs Lonigan

1961 - The Crimebusters (US TV)

1962 - Lonely are the Brave

The Spiral Road

Freud

1963 - The Stripper

The List of Adrian Messenger

A Gathering of Eagles

Lilies of the Field

Take Her, She's Mine

The Prize

1964 - Seven Days in May

Shock Treatment

Fate is the Hunter

Rio Conchos

1965 - The Satan Bug

In Harm's Way

Von Ryan's Express

Morituri

A Patch of Blue

1966 - Our Man Flint

To Trap a Spy

The Trouble with Angels

Stagecoach

The Blue Max

Seconds

The Sand Pebbles

1967 - Warning Shot

In Like Flint

The Flim-Flam Man

Hour of the Gun

1968 - Sebastian

Planet of the Apes

The Detective

Bandolero!

1969 - The Illustrated Man

100 Rifles

The Chairman

Justine

1970 - Patton

The Ballad of Cable Hogue

Tora! Tora! Tora!

The Travelling Executioner

Rio Lobo

1971 - The Mephisto Waltz

Escape from the Planet of the Apes

Wild Rovers

The Last Run

1972 - The Culpepper Cattle Co

The Other

The Man

1973 - Shamus

Police Story (TV)

One Little Indian

The Don is Dead

Papillon

1974 - Chinatown

1975 - Ransom

The Reincarnation of Peter Proud

Breakout

The Wind and the Lion

Take a Hard Ride

Babe (TV)

1976 - Breakheart Pass

The Last Hard Men

Logan's Run

The Omen

1977 - Twilight's Last Gleaming

Islands in the Stream

The Cassandra Crossing

Macarthur

Damnation Alley

1978 - Coma

Capricorn One

Damien: Omen II

The Swarm

The Boys from Brazil

Magic

The Great Train Robbery

1979 - Alien

Players

Star Trek - The Motion Picture

1980 - QBVII (TV)

Inchon

1981 - Masada (TV)

Omen III: The Final Conflict

Outland

1982 - Under Fire

Poltergeist

First Blood

The Secret of Nimh

1983 - Psycho II

Twilight Zone - The Movie

1984 - Supergirl

The Lonely Guy

Runaway

Gremlins

1985 - Rambo: First Blood Part II

Baby: Secret of the Lost Legend

Explorers

Legend

1986 - King Solomon's Mines

Poltergeist II

Appendix B

Star Trek - The Motion Picture: Instrumentation

STRINGS

14 Violins I
14 Violins II
10 Violas
10 Celli
6 Bassi

WOODWIND

2 Flutes + Piccolo
1 Electric Alto Flute
1 Echoplex Electric Bass Flute
2 Oboes + Cor Anglais
2 Clarinets + Bass Clarinet
1 Contrabass Clarinet
2 Bassoons + Contrabassoon
1 Tenor Saxophone

BRASS

4 Trumpets
6 Horns
4 Trombones
2 Tubas

HARPS

2 Harps

KEYBOARDS

Full Pipe Organ
2 Grand Pianos
1 Electric Piano
1 Celeste
1 Clavichord
4 Synthesizers:
  CS-80
  SERGE
  OBX
  ARP 2600

ELECTRONIC (other than synthesizer)

Beam

TIMPANI

4 Timpani

PERCUSSION - TUNED

Marimba
Vibraphone
Xylophone
Glockenspiel
Chimes
Rub Rods
Cimbalon
Song Bells

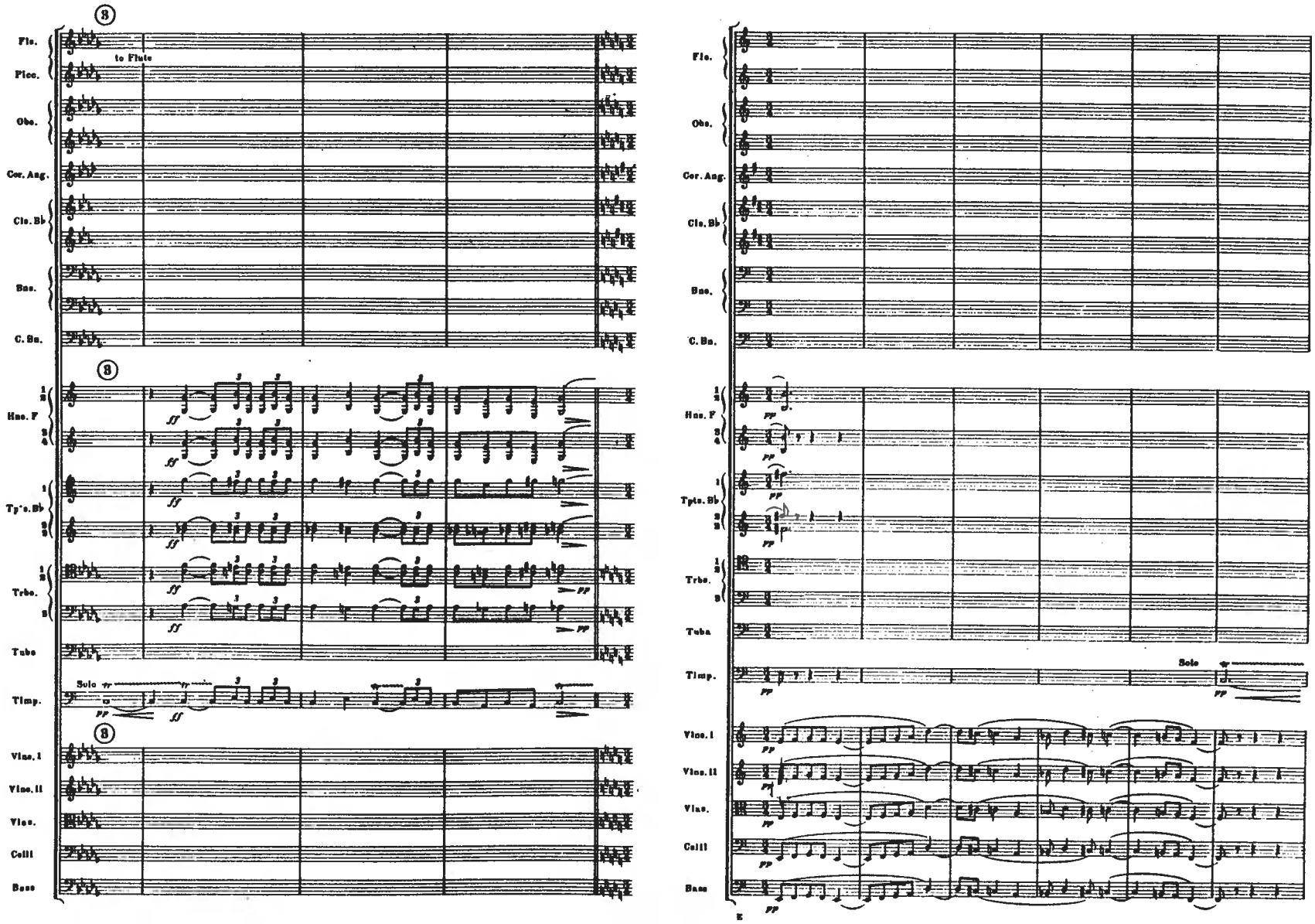
PERCUSSION - UNTUNED (or played in a non-pitched fashion)

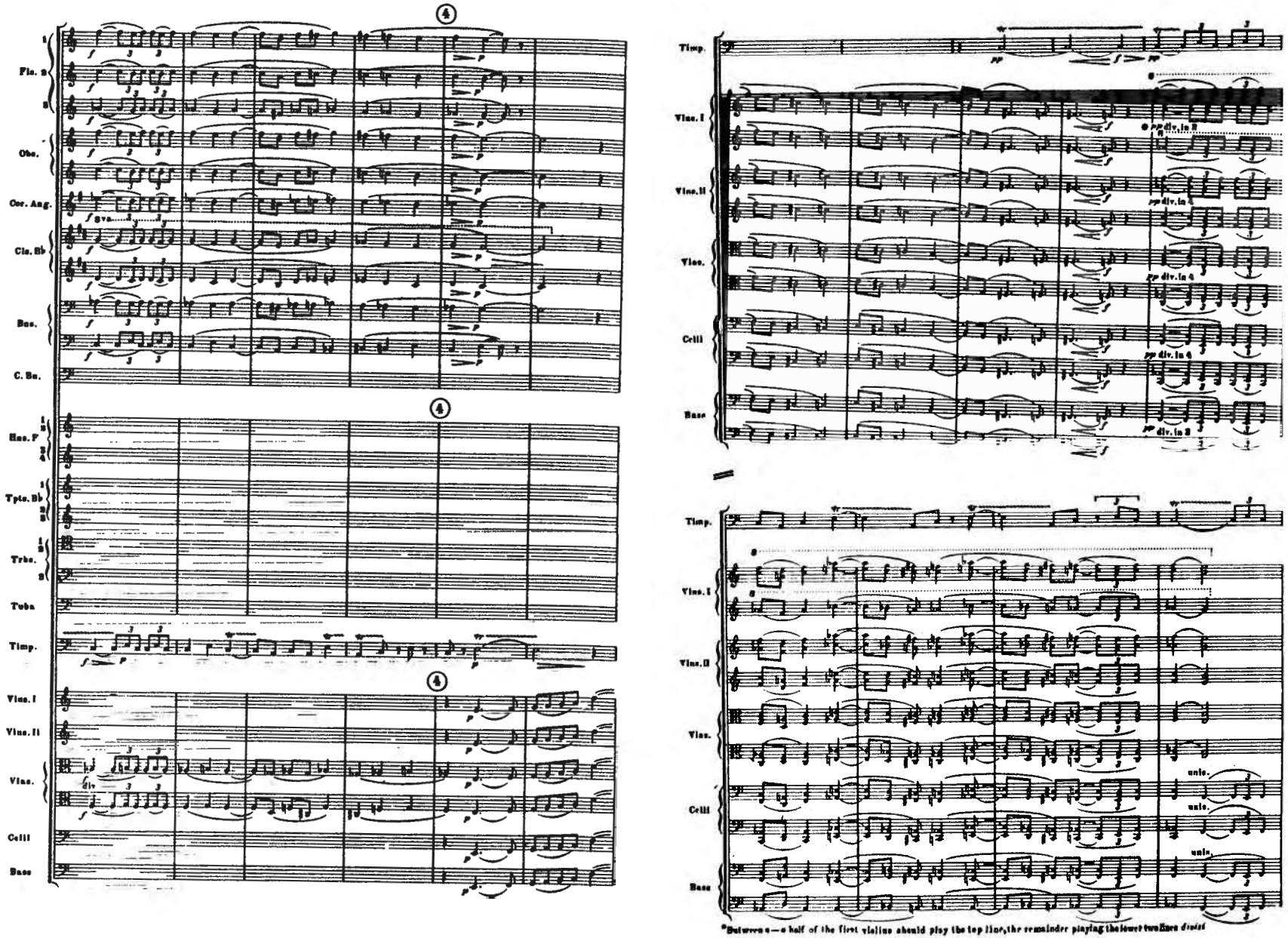
Bass Drum
Field Drum
Tam-tams: large and small
Suspended Cymbals
Sizzle Cymbals
Slit Drums: large and medium
Tom-toms
Water Crotales
Waterphones: large and small
Angklungs: low and piccolo
Wind Chimes
Elephant Drums
Boobams
Mixing Bowls
Bull Roarer
Wind Machine
Rumble Board/Thunder Sheet
Water Chimes

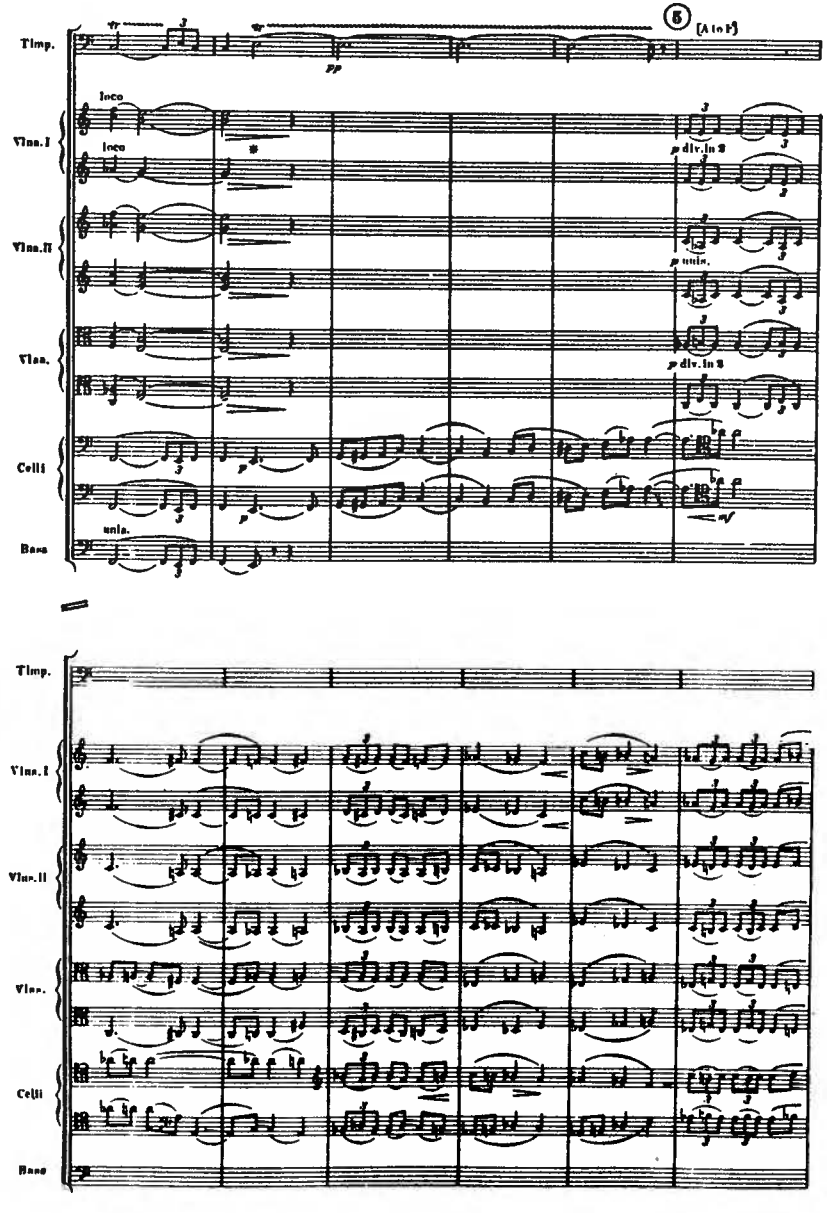
Appendix C

Vaughan Williams: Symphony No. 6 in e minor

Second movement, bars 27-67


8
Flo.
to Flute
Picc.
Obs.
Cor. Ang.
Cls. Bb
Bns.
C. Bn.
Hns. F
Tp'ts. Bb
Trbs.
Tuba
Timp.
Solo
Vlns. I
Vlns. II
Vlas.
Cellí
Bass
E


Fls. 2
Obs.
Cor. Ang.
Cls. Bb
Bns.
C. Bn.
Hns. F
Tpts. Bb
Trbs.
Tuba
Timp.
Vins. I
Vins. II
Vlas.
Cellí
Bass
Timp.
Vins. I
Vins. II
Vlas.
Cellí
Bass
div. in 2
div. in 4
unis.
*Between a — a half of the first violins should play the top line, the remainder playing the lowest two lines divisi

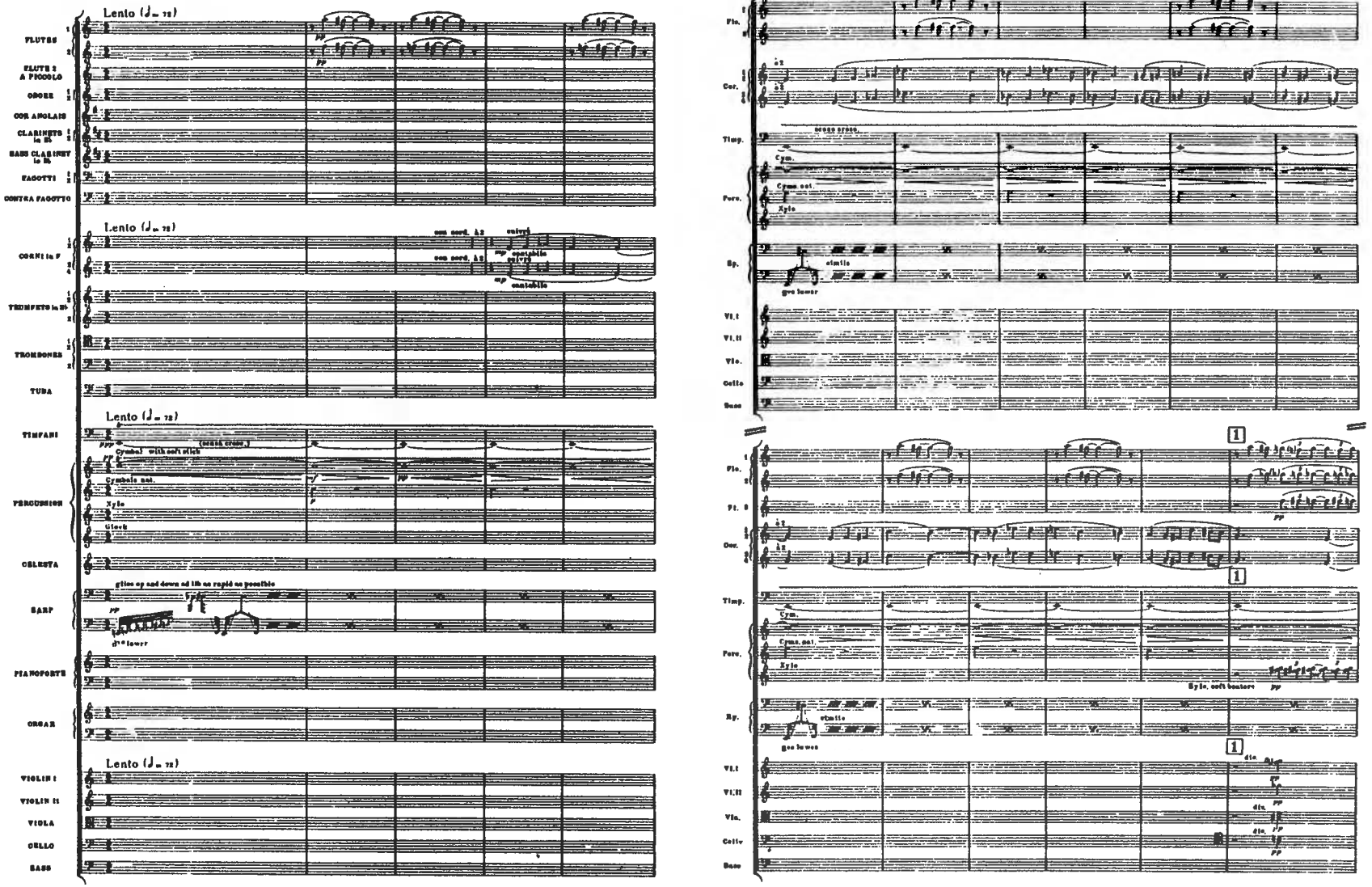

5
(A to F)
Timp.
Vlns.I
Vlns.II
Vlas.
Celli
Basso
loco
pp
p div. in 2
p unis.
p div. in 3
unis.
6
Fls.
Obs.
Cor. Ang.
Cl. B♭
Bns.
C.Bn.
Hns. F
Vlns.I
Vlns.II
Vlas.
Celli
Basso
p cantabile
div.

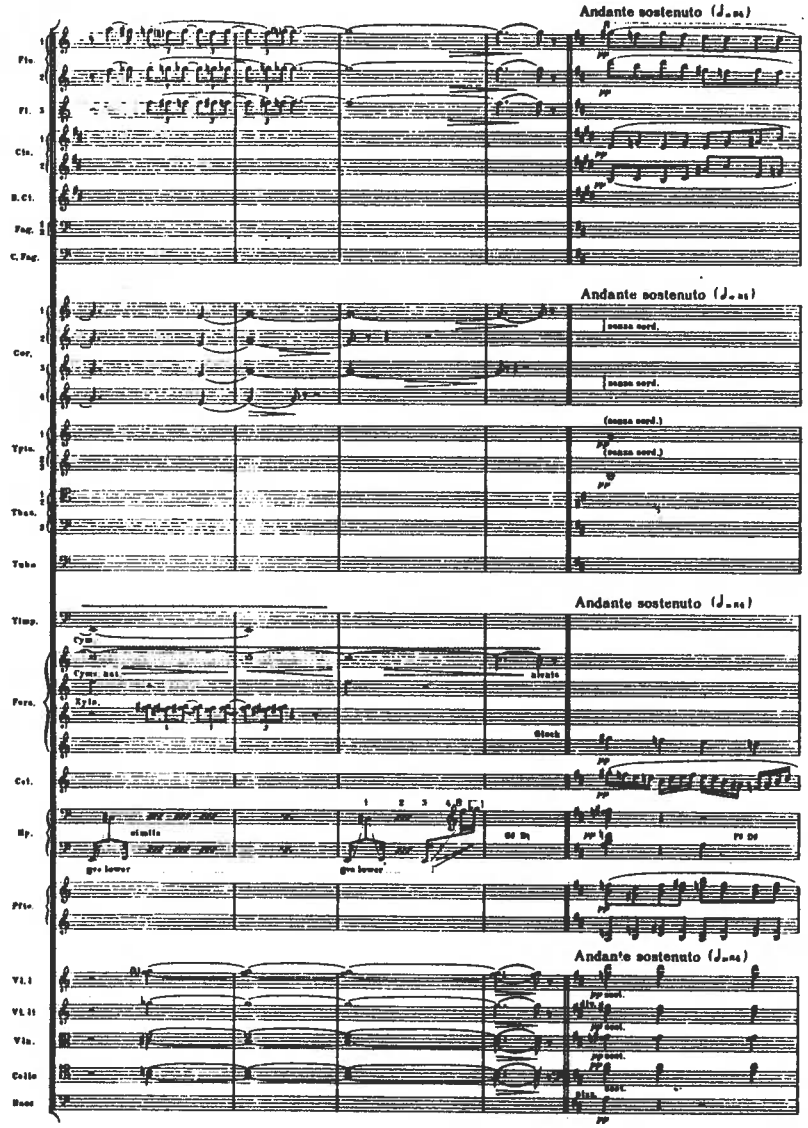
Appendix D

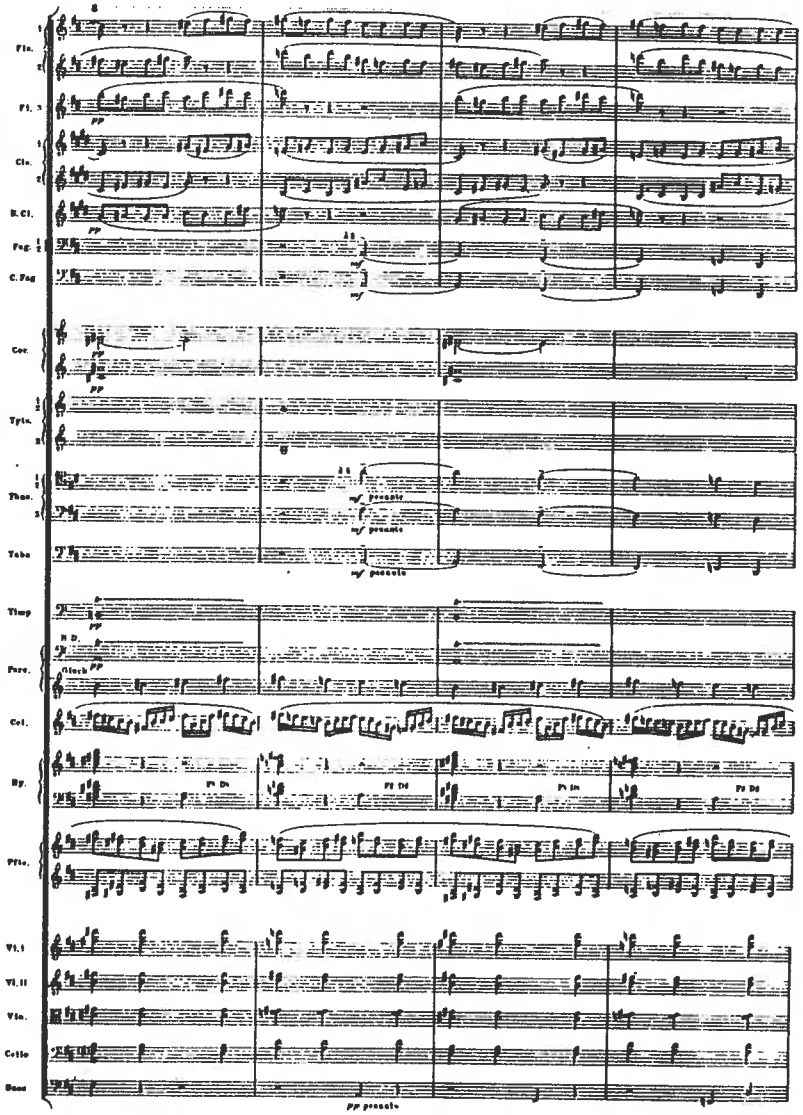
Vaughan Williams: Sinfonia Antartica

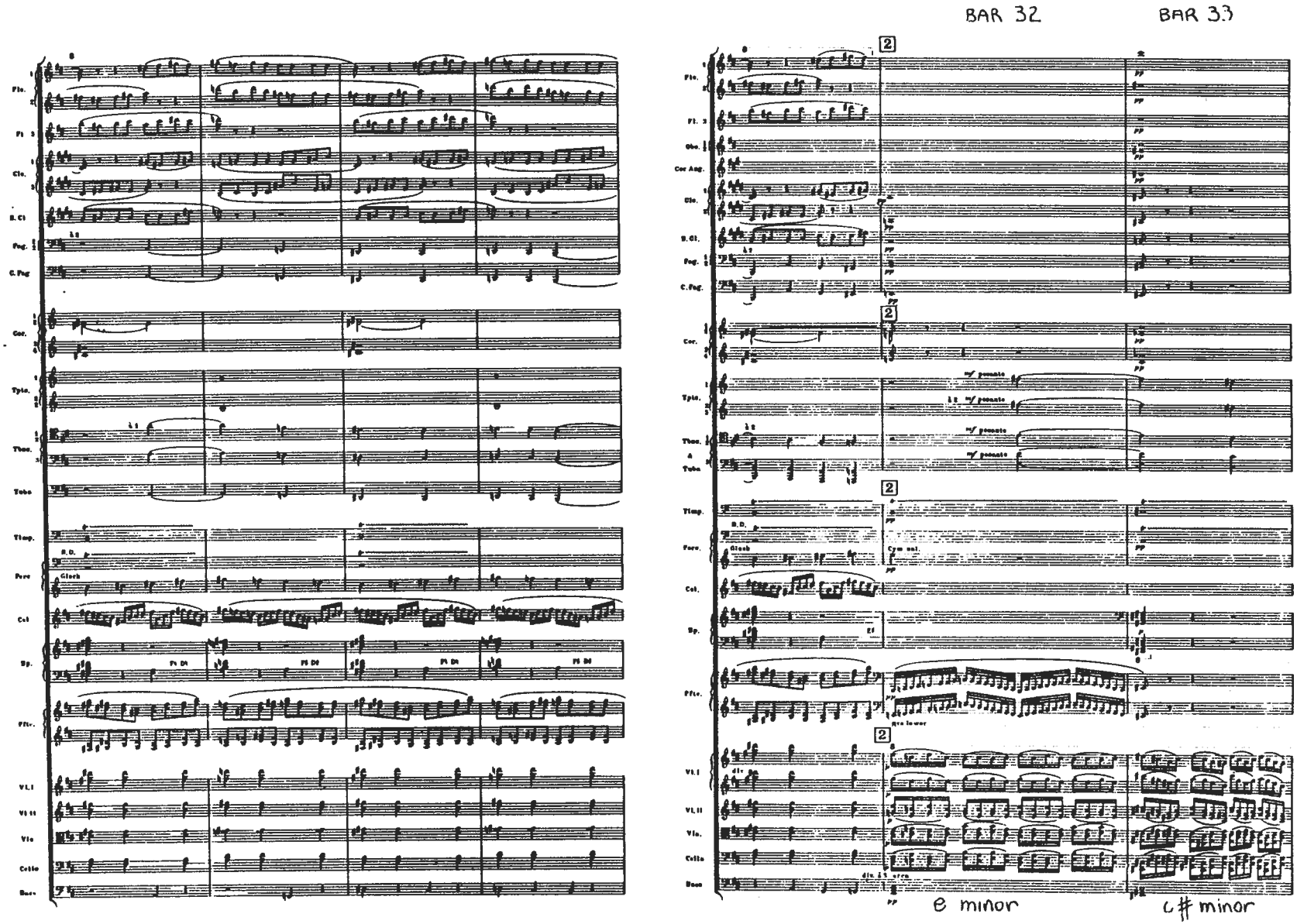
Third movement: "Landscape," bars 1-43

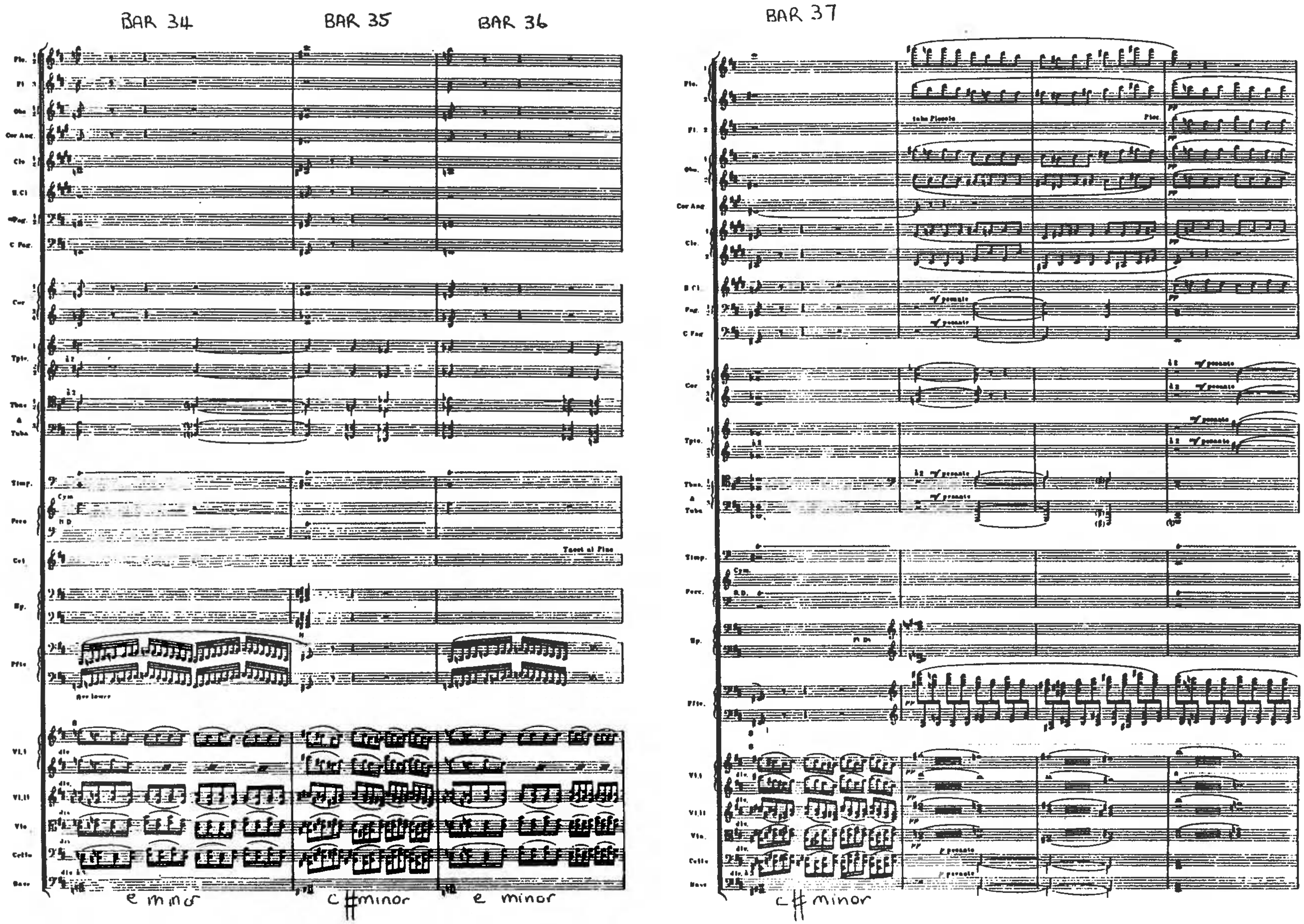
3. LANDSCAPE

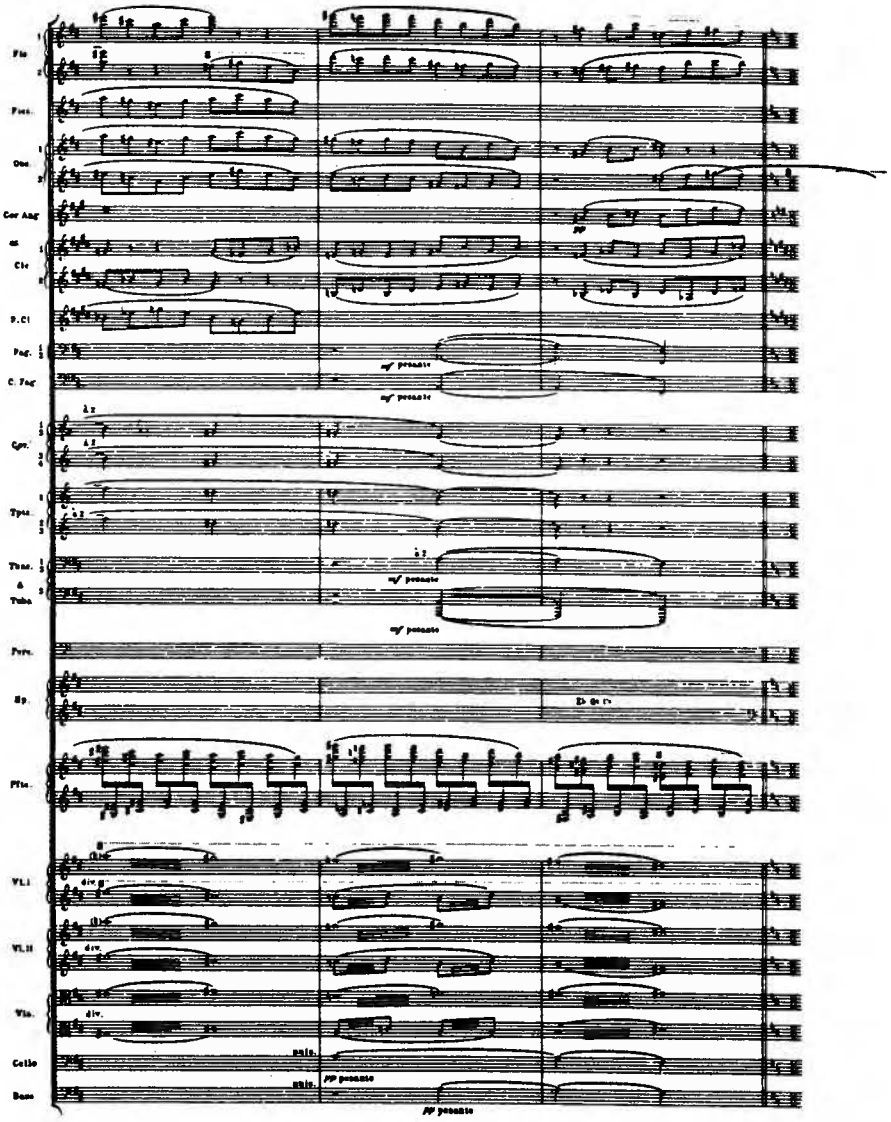

Lento (♩= 72)
FLUTES
FLUTE 2 & PICCOLO
OBOES
COR ANGLAIS
CLARINETS in Bb
BASS CLARINET in Bb
FAGOTTI
CONTRA FAGOTTO
CORNI in F
TRUMPETS in Bb
TROMBONES
TUBA
TIMPANI
PERCUSSION
CELESTA
HARP
PIANOFORTE
ORGAN
VIOLIN I
VIOLIN II
VIOLA
CELLO
BASS
Cymbal with soft stick
Cymbals sus.
Xylo
Glock
glide up and down all th as rapid as possible
con sord. hn
cantabile
Fl.
Cor.
Timp.
Perc.
Cym.
Xylo
Hp.
simile
Vl. I
Vl. II
Vlc.
Cello
Bass
Xylo. soft beaters
div.


Andante sostenuto (♩= 56)
Fls.
Fl. 3
Cls.
B.Cl.
Bsn.
C.Bsn.
Cor.
Tpts.
Thns.
Tuba
Timp.
Perc.
Cel.
Hp.
Pfte.
Vl. I
Vl. II
Vla.
Cello
Bass
Andante sostenuto (♩= 56)
senza sord.
(senza sord.)
Andante sostenuto (♩= 56)
Cym.
Cymbal beat
Xylo.
Glock
simile
gva lower
Andante sostenuto (♩= 56)
pp sost.
sul pont.
pizz.
arco


Fls.
Fl. 3
Cls.
B.Cl.
Bsn.
C.Bsn.
Cor.
Tpts.
Thns.
Tuba
mf pesante
Timp.
Perc.
Glock
Cel.
Hp.
Pfte.
Vl. I
Vl. II
Vla.
Cello
Bass
pp pesante


BAR 32
BAR 33
E minor
C# minor

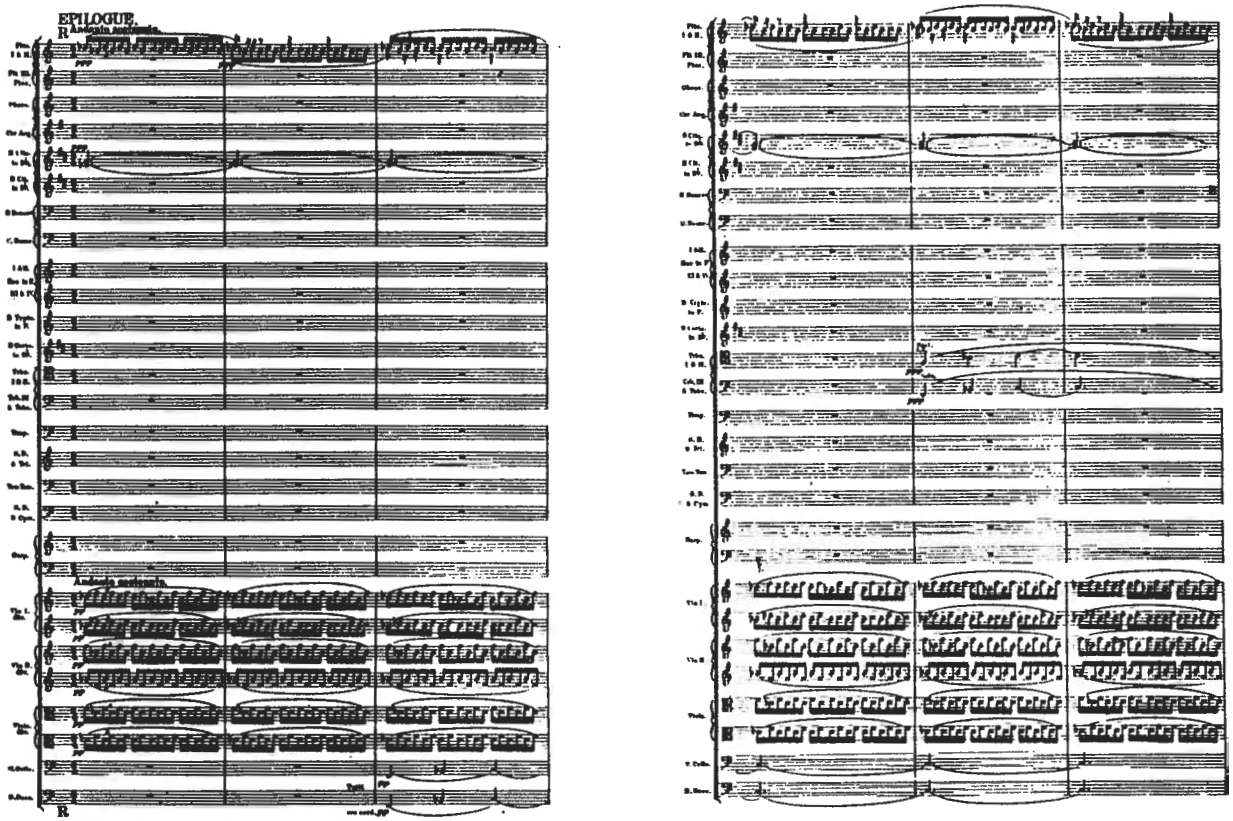

BAR 34
BAR 35
BAR 36
BAR 37
e minor
c# minor
e minor
c# minor

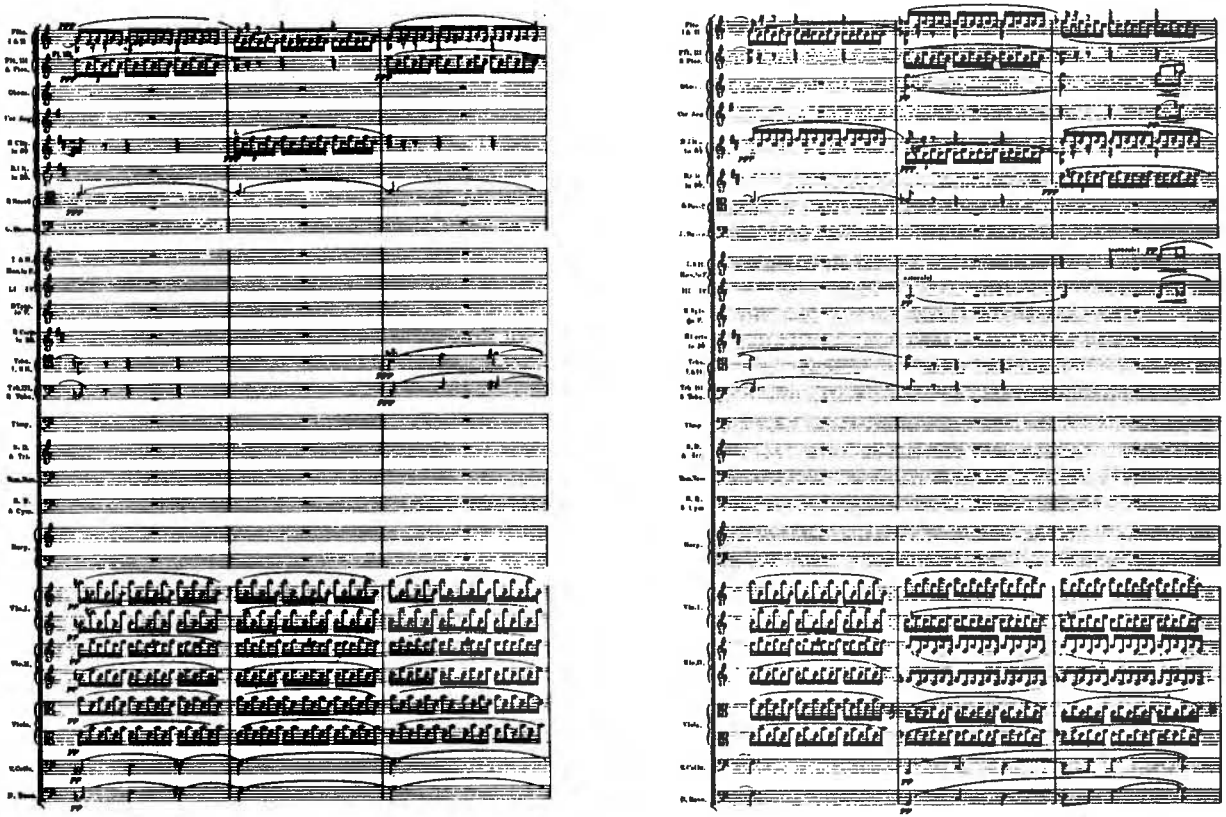

Fls.
Pno.
Obs.
Cor Ang
as
Cls
B.Cl
Fag.
C.Fag
Cpt.
Tpts.
Thn.
&
Tuba
Perc.
Hp.
Pfte.
Vl.I
Vl.II
Vla.
Cello
Bass
mf pesante
pp pesante

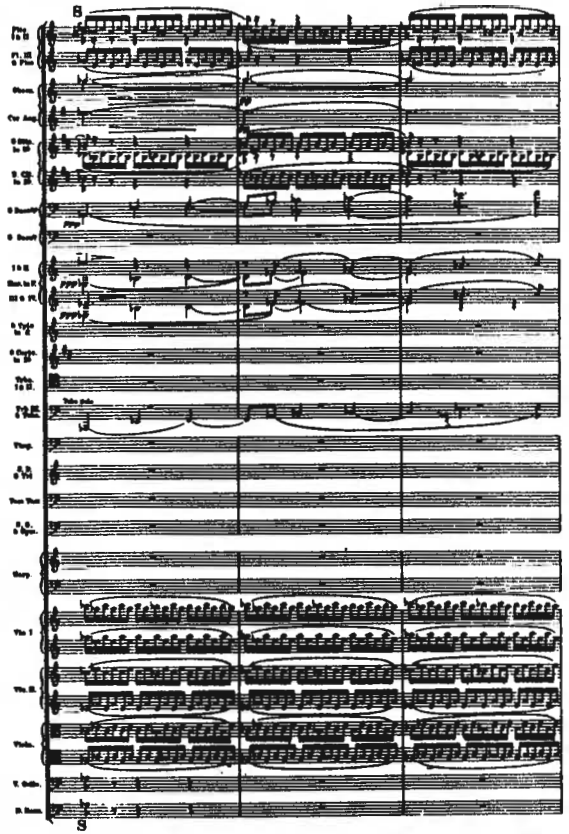
Appendix E

Vaughan Williams: A London Symphony

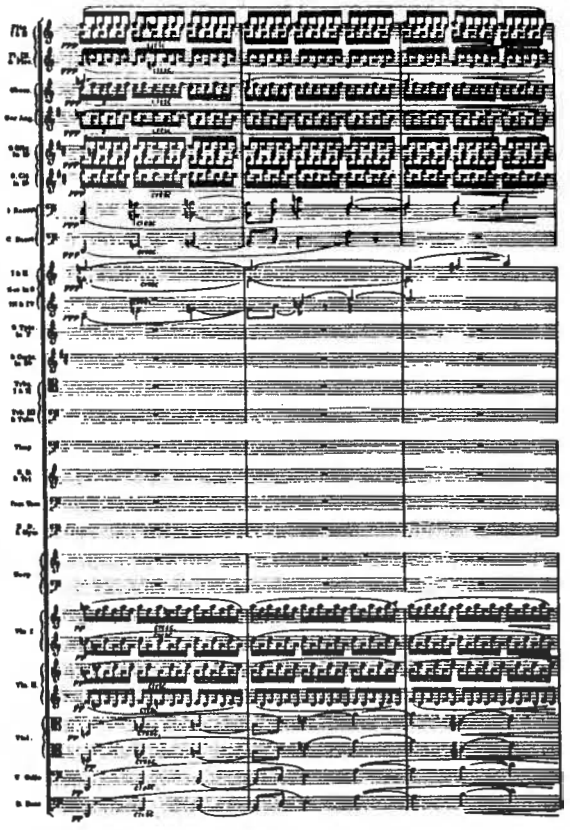
Fourth movement, Epilogue, bars 174-191


EPILOGUE
b-flat minor


e minor
C minor



a-flat minor



d minor

Appendix F

Star Trek - The Motion Picture: Soundtrack Album

Technical Information

Music composed and conducted by Jerry Goldsmith

1. Main Title/Klingon Battle (6.48)
2. Leaving Dry-dock (3.28)
3. The Cloud (4.57)
4. The Enterprise (5.56)
5. Ilia's Theme (2.59)
6. V'ger Flyover (4.55)
7. The Meld (3.14)
8. Spock Walk (4.16)
9. End Title (3.14)

- Album Produced by: Jerry Goldsmith
- Executive Producer: Bruce Botnick
- Orchestrations: Arthur Morton
- Contractor: Carl Fortina
- Music Editor for the Film: Ken Hall
- Digitally Recorded at 20th Century Fox, Music Scoring Stage
- Engineer and Scoring Mixer: John Neil
- Assisted by: Terry Brown, Randy Saunders and Barry Walters
- For 20th Century Fox, Music Department: Lionel Newman
- SONY Digital Recording System Consultants: Rick Plushner and Roger Pryor
- Editing Engineer: Bruce Botnick
- Disc Mastering: Wally Traugott, Capitol Records Studios, Hollywood
- For Paramount Pictures Music Department: Hunter Murtaugh
- For Columbia Records: Michael Dilbeck, Bruce Lundvall, Joe Dash and Guy Spellman

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