

# Concert Production's New Ally: A Computer Learns the Score

**I**mponderables in orchestra concert programming—special instrumental requirements, errata in scores and parts, and works of unknown duration—have long been the bane of orchestra librarians, conductors, personnel managers, production coordinators, and others involved in plotting out a concert season. But help is on the way, thanks to a meticulous study of orchestral repertoire and the wonders of computerized data retrieval.

by Marshall Burlingame

**A**nyone involved in planning and producing orchestral concerts knows only too well that small details left unattended can quickly become large problems. The following slice from an orchestra's subscription season provides some examples:

Concert No. 1

Prokofiev: *Classical Symphony*  
Ravel: *Pavane for a Dead Princess*  
Ravel: *Alborada del grazioso*

INTERMISSION

Rachmaninoff: *Rhapsody on a theme of Paganini*  
Strauss: "Dance of the Seven Veils"  
from *Salome*

Concert No. 2

Verdi: Overture to *La Forza del destino*  
Mozart: Piano Concerto No. 20 in  
d minor, K. 466

INTERMISSION

Schumann: Symphony No. 1 in Bb, Op. 38  
(*Spring*)

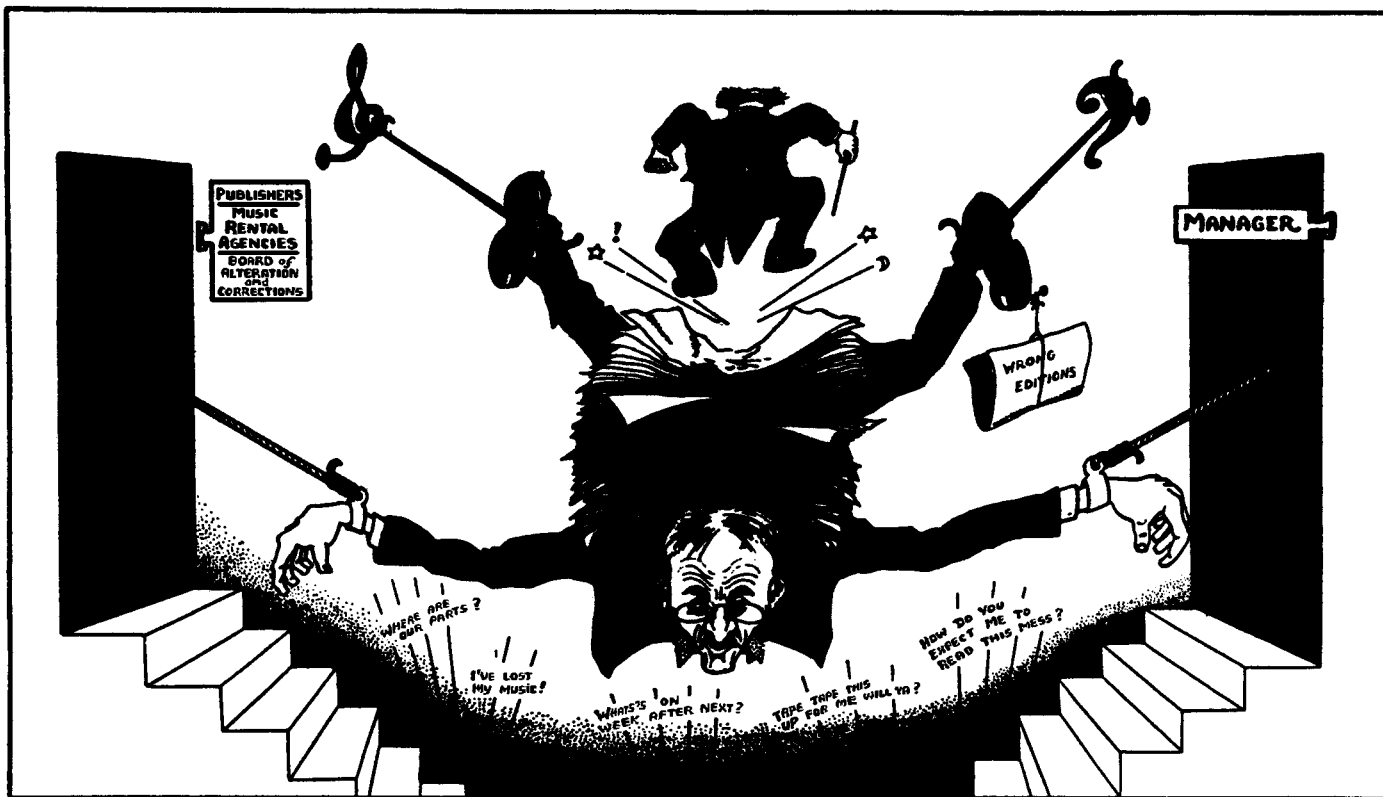
Concert No. 3

Mahler: Symphony No. 2 (*Resurrection*)

Some details must be taken care of very early in the game. In program No. 1, large percussion sections are needed for both the Ravel and the Strauss; most orchestras would have to hire four extra players. The full orchestration of Salome's "Dance" (Strauss also scored it for smaller orchestra) includes a hecklephone part, usually played by bass oboe, and the piece has other woodwind requirements that go beyond even a Major orchestra's regular complement of players. This is essential information for the orchestra's personnel manager. He must reserve the extra players he wants months in advance before they accept conflicting engagements. In many cities, it would be difficult to find four capable percussionists on short notice if there were simultaneous performances of something like Schoenberg's *Moses and Aaron* at the local conservatory. A pianist must also be engaged for program No. 1 to play the celesta part in the Strauss. And a bass oboe is not exactly standard equip-

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ORCHESTRA LIBRARIAN

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ment in most player's collections, so if the orchestra does not own one, arrangements for renting the instrument must be made well in advance. A couple of weeks later, program No. 3 will also require extra wind and percussion players for the Mahler symphony.

The only way to insure that such information is available soon enough is to compile the orchestration and duration of all works for an entire season as soon as the programs are announced the preceding spring. Many of the preparations made by an orchestra's production staff depend on this information.

The personnel manager must learn what pieces will have reduced strings and a small wind complement, to enable him and the orchestra's principal players to distribute time off equally among the members of each section; he must also know when extra players need to be hired and unusual instruments procured. He can project for the orchestra's pianist what pieces he will play during the season, such as Salome's "Dance," and on what occasions his presence may be required to accompany singers in solo rehearsals with the conductor, such as, possibly, the Mahler *Resurrection*.

Keyboard requirements are also important information for the production coordinator, who must insure that the correct pianos are available and arrange the piano tuner's schedule so that the instruments are ready for each rehearsal and performance. The duration of each piece is also essential knowledge for the production coordinator in his backstage role at concerts. He organizes the ushers' activities, directs the lighting changes, and sees that soloists and conductor are brought to the stage at the

proper time. He also needs to know about any choral works, e.g., the *Resurrection*, so that he can arrange for the necessary configuration of risers, chorus chairs, and orchestra setup.

Our three programs contain special pitfalls for the orchestra librarian, who must function as an editor for each composition placed before the orchestra. He must deal with the errors that are virtually inevitable in the printing of so many notes, rests, accidentals and meter signatures, etc. He will avoid as many of these as possible by requesting from publishers rental music that is "used but usable." His orchestra will benefit from the mistakes corrected in the parts by other competent musicians. The rental materials for the Ravel pieces on Program No. 1 fall into this category.

The Verdi which opens the second program is another story. From experience, the librarian knows that a new set of materials in this edition, which can be purchased from a reprint house, must be thoroughly checked. The edition contains, in fact, over 90 errors in eight-and-a-half minutes of music. Putting it on the stage unproofed would make the conductor feel that *La forza del destino* had become for him the "Fickle Finger of Fate." The initial rehearsal period allotted to the overture would be completely taken up with the correcting of wrong notes and other problems that could have been avoided.

The Mozart d-minor Piano Concerto is a much more reliable edition. In the Rondo, however, an eight-measure passage in the second violin part is printed twice. If it is not corrected, the seconds will suddenly find themselves very much at odds with the rest of the orchestra.

It is also important for the librarian to know that Schumann had to rewrite the opening of the *Spring Symphony* to accommodate the valveless horns of his day. He must ascertain which version of the introduction the conductor wants him to prepare.

Problems such as these have existed for as long as there have been musical ensembles. One can imagine the ire of Bach as his ears were assailed by the copyist's mistakes during the rehearsal of a new cantata. There are some sonorities in Berlioz' works which are so "bold" they are suspected of being mistakes by the students who extracted the parts from the composer's manuscript. And after rehearsing one of his works with a Major U.S. orchestra, Stravinsky called for the parts to be collected; he then carried them over to the publisher's representative sitting in the first row of the theater and, without a word, dropped the large stack into the startled man's lap.

### Technology to the Rescue

The American Symphony Orchestra League, with the support of the Music Program at the National Endowment for the Arts, is currently assembling a computer file of production information designed to help orchestras anticipate these problems inherent in their concert schedules. There are several steps in assimilating the information.

A prototype orchestra card catalogue is being produced that will give the exact title, instrumentation, duration, and publishing information for the core symphonic repertoire, with additional works to be catalogued on an ongoing basis. Instrumentation is established from an examination of both score and parts for each work. Precise information is a must. For the Mahler *Resurrection*, among the various catalogues of orchestral repertoire only the Edwin A. Fleisher specifies which members of each woodwind section must double on auxiliary instruments. Only the Fleisher tells us that not one but *four* piccolos, *two* English horns, *two* E-flat clarinets, and *two* contrabassoons are called for. None mentions the fact that four horns, four trumpets, one timpanist, and at least two percussionists are required to play certain passages offstage. And no catalogue, of course, offers the practical fact that the bassoon parts can be rearranged without any change in Mahler's actual notes, so that only one contrabassoon (who also doubles on fourth bassoon) is required. As we have seen, this specific information is essential to the personnel manager, the librarian, and the production coordinator as they prepare for the concert. The completed card catalogue will include the orchestral literature that is available only through rental agencies, as well as that which can be purchased. The duration of each piece will come from known performances, taking into account standard cuts and repeats.

After the card catalogue is completed, the information will be translated into a data base. Each orchestra will thus be able to obtain a printout on its upcoming season, giving instrumentation, duration and publisher(s) for most of the works. The data base will also be cross-referenced by composer, title, orchestration, duration, and genre so it can be used as a programming tool, answering questions like: "Our maximum orchestration is two flutes and piccolo, two oboes and English horn, pairs of clarinets and bassoons, four horns, two trumpets, timpani, one percussion, and strings; we need an 8- to

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10-minute overture or symphonic poem—what do you have?" Or, if an audition list is being prepared: "What pieces require E-flat clarinet (or contrabassoon or orchestral piano, etc.)?" The League is about to begin programming the collected information, and plans to begin testing the data base in late 1983.

Written files will supplement the computer information. The first category of files will be a summary of editions. This will include a discussion of repertoire that involves choices of edition, e.g., Bruckner symphonies, revised editions of Mahler, Debussy, Stravinsky, etc. It will also contain current information about obtaining works for hire and will make recommendations with regard to the editions of some music that is for sale.

The second category of written file is one of the most important elements of the entire project. It will be an errata file, containing as much information as can be gathered on errors in editions and other problems associated with the preparation of accurate materials for rehearsal. Multiple copies of a concise form for pinpointing at least the location of such problems (e.g., Mozart K.466, 2nd violin, 3rd movement) if not the actual list of necessary corrections, will be circulated to conductors and librarians. The input from these sources will be filed and indicated in the computer printout by an "early warning" symbol, alerting the librarian to the presence of a problem. If he is not familiar with it, he can request from the League a copy of the written file on the particular work. Also included will be any information available on other production problems associated with a particular work, such as unusual stage setups. Any contributions to the errata file will be warmly welcomed, and may be addressed to "Performance Information Project" in care of the American Symphony Orchestra League.

In any given season, many of the same problems are being dealt with simultaneously by orchestra staffs in isolation from one another. The amount of knowledge that reposes in the minds and files of orchestra people is immense, but countless problems such as those discussed above have been resolved the hard way, without the benefit of other people's experience. Organizing our collective wisdom will help us create an environment in which artistic activity is as free of technical obstacles as possible. ■