A new book by Lloyd D. Hanford, Sr., CPM, author of INVESTING IN REAL ESTATE and DEVELOPMENT AND MANAGEMENT OF INVESTMENT PROPERTY

Think in terms of pounds or pesos, dollars or drachmas, rubles or rupees, and you're still on the same subject... money... how to get the most out of what you've got or simply how to earn more of it.

THE REAL ESTATE DOLLAR—which is uppermost in your mind if you're reading this—is a new book by Lloyd D. Hanford, Sr., CPM, San Francisco. The knowledgeable Mr. Hanford is a past president of the Institute of Real Estate Management as well as the Editor of the Journal of Property Management.

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- Inventory of Land
- Posture of Real Estate Management
- Cash Flow and Feasibility Studies

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The real estate practitioner who believes that property management is little more than collecting rent is living in the past. We hope he isn't beyond help, but we realize that while our book, *The Real Estate Management Department*, may produce a wonderful revolution in some offices, it can't work miracles. What it can do, however, is provide you with a step-by-step, "how to do it" procedure when you find that you must or should set up a real estate management department. The cost is only $6.50.

Did you know that a properly operating management department in a brokerage office is a real source of benefit to the broker in ways other than the tangible management fees? Are you aware of benefits available to the client whose property is placed under the care of a professional manager? Your office can't really offer complete real estate service to the public unless you are grounded in this subject.

After you decide to set up a management department to augment your present services, will you be aware of the ethical responsibilities of the manager and the tested objectives and policies of the well-run management business? A "no" to any of these questions shows a need for the professional education available to you at modest cost—$6.50—in *The Real Estate Management Department*.

A bonus to the educational chapters is the extensive collection of business forms which has been reproduced at the end of the book. These forms are in use today by many successful offices in the real estate management field. A discussion of the use of time-saving, standardized forms in management is also included as the single topic of an entire chapter.

Other chapters included are: Budgeting the Operation of a Management Department, Management Procedures, Management Contracts and Fees, Insurance for the Property Manager, Management Policies, and Building a Management Business.

Because of the overwhelming demand for an updated book of this nature, this new and revised edition of *The Real Estate Management Department* is destined to follow its predecessor in becoming a desktop guidebook for the profession and a constant source of practical reference material. We know you'll use and appreciate the latest word in professional property management, *The Real Estate Management Department*.

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CONTENTS

244 Briefing This Issue and This Month's Cover

246 Office Building Feasibility Study: For Medium-Size Metropolitan Areas
C. R. Griffith, Jr., CPM

251 Planning, Building, Operation of Health-Care Facilities
Gerald Harris and Irving Lord Mark

255 Managing a Marina Complex
Robert W. Miller, CPM

263 Editorial: Real Estate and the Tax Bill
Lloyd D. Hanford, Sr., CPM

264 Cash Flow Analysis and Multiple Regression Techniques:
A Computer Analysis of Apartment Properties
William M. Shenkel, CPM

277 Professional Merchandising or Amateur Peddling
R. L. Sanders, CPM

278 Creative Management, Market Analysis Save Obsolescent Trailer Park
John E. Free, CPM

280 Renting by Radio
Stephen R. Rotroff

284 New Products and Literature

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BRIEFING THIS ISSUE

OFFICE BUILDING FEASIBILITY STUDY: FOR MEDIUM-SIZE METROPOLITAN AREAS

C. R. Griffith, Jr., CPM

In order to determine the potential for economic success of an investment property, a feasibility study is necessary. Mr. Griffith presents a step-by-step guide for analyzing the economics of an office building to be located in a city of 150,000. Major emphasis is placed on rental marketability and financial feasibility, the cornerstones of a feasibility study.

PLANNING, BUILDING, OPERATION OF HEALTH-CARE FACILITIES

Gerald Harris and Irving Lord Mark

The authors itemize the various stages of developing and managing this special-use type of property, covering such points as site selection, financing, role of consultants, staffing and operation. They approach the project on a systematic basis which is necessary in view of the unique physical plant and management problems of such a development and in order to combine the best patient care with a sound economic base.

MANAGING A MARINA COMPLEX (THIS MONTH'S COVER)

Robert W. Miller, CPM

The marina offers a unique opportunity for professional management since the lessee brings his property and amenities to the site; this relationship calls for a high degree of flexibility and public-relations finesse on the part of the management staff. Mr. Miller offers some guidelines for establishing an efficient work schedule and some rules and regulations for achieving harmony and accord between tenants and the marina management. The impressionistic scene shown on the cover this month reflects the leisurely existence of marina residents in Marina del Rey, California.
EDITORIAL: REAL ESTATE AND THE TAX BILL

Lloyd D. Hanford, Sr., CPM

Mr. Hanford focuses his attention on impending tax legislation and the possible negative effects it may have on real estate investment. He concludes that real estate investment will be able to stand on its own feet only if maximum cash flow can be achieved. In this light the experience of recognized professional managers will be indispensable.

CASH FLOW ANALYSIS AND MULTIPLE REGRESSION TECHNIQUES: A COMPUTER ANALYSIS OF APARTMENT PROPERTIES

William M. Shenkel, CPM

This article continues Dr. Shenkel's examination of the use of computer programming to simplify the complexities of data necessary to determine a property's investment potential. He discusses two types—cash flow and multiple regression analyses—the first showing how net proceeds from a real estate investment change under different depreciation schedules and the latter yielding probable sales price (without using conventional appraisal data) and the factors weighed most heavily by investors.

PROFESSIONAL MERCHANDISING OR AMATEUR PEDDLING

R. L. Sanders, CPM

Mr. Sanders takes a look at the practice of offering concessions in order to gain maximum occupancy; he challenges this practice as a device that does not yield maximum profits nor make best and highest use of the property. He suggests, instead, the practice of increasing amenities, remodeling and installing other improvements which attract tenants and also enhance the property itself.

CREATIVE MANAGEMENT, MARKET ANALYSIS SAVE OBSOLETE TRAILER PARK

John E. Free, CPM

Mr. Free relates how an obsolete property was brought back to life by a thorough look at the market which led to the discovery that a need existed for a facility for older model mobile homes and that they could easily be accommodated on the subject property. In addition, several trailers were purchased, furnished and then rented, which doubled net operating income of the property.

RENTING BY RADIO

Stephen R. Rotroff

The use of a radio advertising campaign is examined in this article, relating to a large garden apartment complex. An increase in vacancies led management to institute such advertising and it was decided that the subliminal effect of having the name of the apartment broadcast to a wide range of potential tenants was advantageous in lessening the vacancy problem.
Office Building Feasibility Study: For Medium-Size Metropolitan Areas
The probability of success of a specific project is determined by its rental marketability and financial feasibility, which two areas are the primary points of investigation in an office building feasibility study. The findings of such a study should set guidelines to be followed, disregarding uneducated guesses or sorcery. The study serves as a planning tool which correlates the investors’ aims, the rental market, the architect’s design, site study and the mortgage market.

In most major urban centers the marketability of office space is a foregone affirmative conclusion, the unknown thus being a suitable site at a financially feasible price and an obtainable mortgage. However, within a metropolitan area with a population of 50,000 to 500,000, the situation is the reverse. There is usually a number of suitable sites available in these communities but the rental market is not readily analyzed and requires in-depth and thorough study. In the following, we will endeavor to discuss the steps necessary to reach a conclusion with respect to a proposed downtown office building with a bank as the prime tenant within a city of approximately 150,000.

Normally, the primary site is preselected and preferably owned or optioned at a fixed price. If a negative conclusion is reached after conducting a feasibility study, the option money and fee for the study is still well spent.

The first step in analyzing a market is to conduct an investigation and gather material on the quantity and quality of existing office space. The use of a questionnaire (see next page) serves a twofold purpose in that it can determine existing office building tenants’ interest in a new building and also reveal facts in regard to their existing premises. These questionnaires can be used later by the leasing agent as a prospect list.

Existing space in the downtown area should be surveyed on a block-by-block basis. Also, space in other areas of office building concentration within the region of the proposed building must be included. This survey must include office space in one-story, free-standing buildings, space above retail and wholesale outlets, and any space that could, within reason, be leased on today’s market. The following categories of buildings should not be surveyed because of their non-competitive nature:

1. Owner-occupied, free-standing, single-occupant buildings.
2. Medical and dental buildings.
3. Manufacturing employees.
4. Retail sales.
5. Wholesale sales.

Tables can be set up in the following manner:

<table>
<thead>
<tr>
<th>Population</th>
<th>Inc./Dec. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td></td>
</tr>
<tr>
<td>1970 (projected)</td>
<td>%</td>
</tr>
<tr>
<td>1980 (projected)</td>
<td>%</td>
</tr>
</tbody>
</table>

A normal up-trend in population is usually noticeable but the determining
### Table 1—Supply

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Rentable Sq. Ft.</th>
<th>Rate/Sq. Ft.</th>
<th>Vacant Sq. Ft.</th>
<th>% Vacancy</th>
<th>Age</th>
<th>Condition*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>19,440</td>
<td>$2.15</td>
<td>6,804</td>
<td>35%</td>
<td>52</td>
<td>P</td>
</tr>
<tr>
<td>B</td>
<td>28,350</td>
<td>$2.35-3.50</td>
<td>14,175</td>
<td>50%</td>
<td>46</td>
<td>R</td>
</tr>
<tr>
<td>C</td>
<td>4,250</td>
<td>$2.40</td>
<td>1,000</td>
<td>23.5%</td>
<td>39</td>
<td>P</td>
</tr>
<tr>
<td>D</td>
<td>5,625</td>
<td>$3.00-3.50</td>
<td>1,500</td>
<td>26.7%</td>
<td>40</td>
<td>F</td>
</tr>
<tr>
<td>E</td>
<td>76,337</td>
<td>$3.85-5.25</td>
<td>34,962</td>
<td>45.8%</td>
<td>2</td>
<td>N</td>
</tr>
<tr>
<td>F</td>
<td>36,000</td>
<td>$5.00</td>
<td>14,555</td>
<td>40.4%</td>
<td>1</td>
<td>N</td>
</tr>
</tbody>
</table>

Total Competing Bldgs. 170,002

All Other 113,100

Total 283,102

* P = Poor; R = Rehabilitated; F = Fair; N = New

---

### Schedule 1—Estimated Cost

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Building cost</td>
<td>$</td>
</tr>
<tr>
<td>Site improvements &amp; landscaping</td>
<td>$</td>
</tr>
<tr>
<td>Interest during construction</td>
<td>$</td>
</tr>
<tr>
<td>Professional fees</td>
<td>$</td>
</tr>
<tr>
<td>Contingencies</td>
<td>$</td>
</tr>
<tr>
<td>Total building cost</td>
<td>$</td>
</tr>
<tr>
<td>Land</td>
<td>$</td>
</tr>
<tr>
<td>Total land &amp; building cost</td>
<td>$</td>
</tr>
<tr>
<td>Buying leases, sales promotion, etc.</td>
<td>$</td>
</tr>
<tr>
<td>Total cost</td>
<td>$</td>
</tr>
</tbody>
</table>

---

### Schedule 2—Income & Expense Statement

**Income:**

- Rent 1st floor $\text{_______}$
- Upper floors $\text{_______}$
- Other income $\text{_______}$
- Gross income $\text{_______}$
- Less Vacancy $\text{_______}$
- Effective gross income $\text{_______}$

**Expenses:**

- Fixed $\text{_______}$
- Operating $\text{_______}$
- Itemized $\text{_______}$
- Less total expenses $\text{_______}$

Net operating income $\text{_______}$

- Less debt service (as determined from mortgage market) $\text{_______}$

Net income or cash flow before depreciation and income taxes $\text{_______}$
OFFICE BUILDING FEASIBILITY QUESTIONNAIRE

1. Tenant ________ classification: (lawyer, etc.)
2. Bldg. ________ suite # ________
3. Sq. ft. occupied ________
4. Rent per month $_______
5. Rate per sq. ft. $_______
6. Services provided: (check)
   A. Air conditioning ________
      (1) Central ________
      (2) Window ________
   B. Janitorial ________
      (1) at what interval ________
      (2) Includes wash & waxing tenants' floors ________
   C. Electricity ________
      (1) who pays for abnormal use ________
      (2) fluorescent tubes by: landlord ________ tenant ________
   D. Heat ________
   E. Parking ________
      (1) free ________ (2) monthly charge $_______
   F. Hours of operation of building ________
7. Would tenant be interested in move? Yes ________ No ________
   A. If yes, what is anticipated requirement?
   B. If no, why?
8. Additional pertinent remarks:

The employee population within these categories is then projected into the future and thus an estimate is found. A ratio of one employee to each 150-200 square feet of occupied office space is the factor applied to the projected counts.

At least five to six square feet of office space is needed per capita within commercial centers but if the trade area under study is not the primary commercial center of the region, then an adjustment must be made. This is the case with regard to the proposed office structure analyzed here. Therefore, we have reduced the demand per capita to 2.15 square feet based mainly upon present demand in existing buildings and proximity of subject to other competing commercial concentrations.

Personal interviews with the following persons, if available, are a must for a feasibility report:
1. City Manager.
2. Planning Director.
3. Director of Urban Renewal.
4. Executive Director of Chamber of Commerce.
5. President of Real Estate Board.
6. President of local IREM Chapter.
7. Local newspaper.

Our questionnaires as compiled reveal square footage of occupied and vacant space. To analyze supply we prepare a table of the major competing buildings plus all other space surveyed showing rentable area, rental rate per square foot, square feet vacant, percentage of vacancy, age and condition (see Table 1).

An analysis of this table reveals an above-average vacancy in new buildings and a recently renovated building. Occupancy in the older buildings was acceptable.

With the extraneous contributing factors of demand and supply analyzed, we must now review the site selected. Exhibits detailing the site should be included in the final report, together with collateral material such as aerial photographs, plot plan and map showing subject site in relation to surrounding neighborhood with particular attention given to competing and influential buildings. (To facilitate reading, collaborating exhibits should be on the
Size of the proposed structure can now be determined from all foregoing data. It is concluded in our example that a demand for an additional 52,000 square feet of general office space will be needed within the central business district by 1980. Since there is a 38 percent greater vacancy rate in the central business district than in the over-all trade area and an alarmingly high vacancy in the newer buildings, it is our opinion the supply of general office space within the area is sufficient to meet the demand until 1980. We recommend a four-floor building with mezzanine to meet the bank's immediate needs, the unused portion to be leased to general space users until needed by the bank.

An architect whom we employ does a preliminary architectural and engineering feasibility analysis and prepares drawings of a building on the given site, based upon our recommendation of size. Reduced drawings are included as exhibits. Along with the preliminary drawings, the architect is instructed to give us an estimated cost schedule to which we add non-construction costs to arrive at a total gross cost outlined in Schedule 1.

These estimates normally do not include specialized requirements of the major tenant. Thus, we have realized the initial computation of our economic study of the proposed building. It is most important to keep in mind that if the proposed building is erected, it will take at least 18 months to two years; therefore, Schedule 1 should reflect inflationary trends. Recent contingencies of 8 to 15 percent are not uncommon due to unrealized cost increases.

To determine the financial feasibility, we must project an income and expense statement, based upon the foregoing architectural design and cost estimate (see Schedule 2).

Income and expense statements require an in-depth analysis of each item contained therein. For instance, rent rates must compare favorably with the previously analyzed competition. Management personnel must project fixed and operating expenses from the preliminary drawings of the proposed building. The income and expense statement is not itemized nor analyzed in detail here since that is a complete study within itself. If a manager has no personal experience with actual operating expenses in the locale studied, assistance should be obtained from professional managers in the area. Corroborating data may be available from the Office Building Experience Exchange Report, published yearly by the Building Owners and Managers Association International.

The debt service is obtained through discussions with mortgage bankers and brokers to determine the best mortgage obtainable on the market at the time of the study or within the following six months.

A final economic analysis can now be made by calculating the return on equity or cash required to be invested above the obtainable mortgage to cover the total cost stated in Schedule 1. At this juncture, it may be advisable to prepare a cash flow projection over a period of 10-15 years in order to analyze the long-term benefits which would include depreciation benefits. The determining factor here is the aim of the investor as to whether an average or below-average return on investment is acceptable in conjunction with depreciation.

We discuss a completed draft of the study with our client to insure we have included all financial schedules needed to meet his specific requirements.

The time, effort and knowledge that are required to complete an office building feasibility study deserve to be presented in the most attractive form. Particular attention should be given to the cover, binding, print and placement of exhibits, for these items project professionalism to the same degree as the contents.

C. R. Griffith, Jr., CPM, is vice president of Goodman-Segar-Hogan, Inc., Norfolk, Va. He is responsible for the leasing and management of office buildings. Mr. Griffith is a member of the Norfolk Board of Realtors and also a part-time faculty member of the Norfolk School Board, Distributive Education Services.
Planning, Building, Operation
Of Health-Care Facilities

by Gerald Harris & Irving Lord Mark

Although the rapidly growing demand for health-care facilities represents a major opportunity for entrepreneurs, very little information has been available concerning the systematic design, development, and management of nursing homes, sheltered care facilities and limited mental-care facilities. In fact, there is even a need for a basic definition of this type of real estate development and management opportunity.

Traditionally, most of the emphasis has been placed on nursing homes. But many areas already have more than enough nursing homes to serve their needs. As a result, more developers should be thinking in terms of diversified health-care facilities that include not only a nursing home but sheltered care and limited mental-care facilities, and possibly a medical motel in a single location. The existing and potential demand for beds is far greater in the latter two types of facility, particularly because of recent legislation in a number of states covering the transfer of elderly patients from state mental hospitals to private, limited mental care institutions.

In view of changing health-care needs, the complexities of local, county, state and federal regulations and the unique physical plant and management problems involved in the development of such facilities, a systematic approach is required to combine the best patient care with a sound economic base. However, once these problems have been solved, the resulting facilities can yield a higher return than virtually any alternate real estate investment while making an important contribution to filling a social need.

The following will present a step-by-step approach to this highly specialized field, from site selection all the way through proper staffing and operation.

MEDICAL & ECONOMIC FEASIBILITY STUDY

Essentially, this study attempts to determine what types of patients are available in an area, in terms of the rates that they can pay and whether existing facilities can meet their needs. Patients can be separated into two groups: those whose means enable them to pay private-care rates and those whose payments will be made by Medicare and/or state aid. This critical economic information can be obtained by consulting state and county public health bodies, local medical institutions, physicians, and other medical people who are familiar with local conditions. Some information on existing and planned facilities for these patients can also be obtained from the same sources.

From a purely economic standpoint, the fee structure of health-care facilities devoted exclusively to private patients provides maximum long-term benefits. However, construction and operating costs during the period before all beds are filled involve a larger investment. Conversely, a somewhat lower investment in facilities for publicly-aided patients and a shorter interval before full occupancy is offset by a lower rate of return. In some cases, the optimum arrangement is a combination of private and publicly-aided patients, housed in separate wings of the same building.

In our experience as consultants, we have found that even a complete compilation of statistical information does not eliminate the need for informed judgment. For example, current data indicate that virtually all major urban areas have enough private-care facilities to meet current needs. But a new private-care facility with a better physical plant and higher standards of patient care than now prevail in the private sector would ultimately be-
Developing a health-care facility demands the services and expertise of consultants in both building and medical fields.
come profitable anywhere. However, the major opportunities for private-care facilities exist in the literally thousands of rural areas where none have been built. Such an area might consist of a town of 15,000 people or less and the 50-mile radius around it.

Ultimately, the potential fee schedule available from an area should yield the income data for entry on a pro-forma sheet that can be completed along with subsequent steps in the planning procedure.

SITE SURVEY

Having selected a market area for the new health-care facility, the next step is selection of a site. All too often a site is selected solely on the basis of either land costs or location. Actually, site evaluation should also take into account the type of patients to be served and the location of patients before they come to the facility.

Two types of sites are available in major metropolitan areas: 1) central city locations, which offer urban conveniences at high land cost and 2) suburban locations, where land is cheaper but where site may be less convenient to visitors and the operating staff. In rural areas, location is not so critical since most of the visitors and staff are used to traveling longer distances by automobile.

Normally, a high-cost site is economically practicable if the anticipated patient pool will include a relatively high percentage of private patients. This consideration will become even more critical when the shift is completed from cost-plus-Medicare payment formulas to flat-rate compensation.

The choice of site is, of course, dependent upon the size of the proposed facility. In the past, when only nursing homes were being considered for a single site, the size of the site was not a major problem. Normally, we do not recommend a facility with more than 120 beds since the impersonality of a larger operation results in patient dissatisfaction. However, if two or three different types of health-care facilities are to be located on a single site, the assembly of central-city parcels of a sufficient size may be difficult. It appears likely that the multi-purpose facility will tend to be located in outlying areas.

FINANCING

Generally speaking, it is unrealistic to think in terms of low-cost financing. Assuming that FHA funds are available, the total investment may be higher than one backed by purely private financing. FHA requirements can add as much as 20 percent to the cost of a nursing home. (For example, FHA requires that the entire building be centrally air conditioned although older patients often complain of cold. Sophisticated systems of ventilation and individual air conditioning can permit greater efficiency and a superior patient environment.)

CONSULTANTS, ARCHITECTS & CONTRACTORS

Consultants can work successfully with architects to reduce actual construction costs. The consultant can recommend space allocations, traffic and staffing patterns and methods, materials and equipment that can reduce costs. Invariably, the savings are far in excess of the consultant's fee.

Similarly, consultants who are completely disassociated from equipment suppliers can also control equipment costs since they eliminate the suppliers' incentive to provide needlessly expensive items. The consultant is governed by considerations of cost-price effectiveness. He will, for example, recommend relatively costly copper plumbing over less expensive cast iron pipes because of its long-term savings in eliminating maintenance and replacement. On the other hand, he will recommend a lower grade of upholstery fabric because fabric prices do not necessarily have a direct relationship to durability (normally the price of a given type of fabric reflects the quantity that has been produced by a mill; special patterns, involving shorter mill runs, are more expensive).

If the consultant has been involved throughout the planning procedure, it can be assumed that architect's plans and spe-
cifications are in conformance with all codes. A general contractor can now make a preliminary cost estimate, which will probably be substantially in line with the consultant's expectations. The architect can then proceed with working drawings and land acquisition can be completed.

Once plans are completed, the consultant should review them with the architect to avoid costly construction changes. At this point, sufficient data are available to make a presentation to lenders for construction and permanent financing as well as lease or chattel financing for the purchase of furnishings and equipment.

Operation

From a management standpoint, the health-care facility is analogous to, but more specialized than a hotel, in the sense that it involves a high level of personal service to occupants. Procedures must be established for purchases of food, supplies, and equipment; dietary planning and menu preparation; establishing rate structures; Medicare account and record keeping, payroll, bookkeeping and cost accounting; advertising and public relations; establishing and maintaining personnel policies, staffing patterns and in-service training programs.

Specialized personnel requirements include an administrator, registered nurses and the availability of physicians on a consulting basis. One of the most recent developments in the field has been that of specialized nursing home management consultant groups, which provide guidance to the staff of each facility and provide owner-operators with complete management reports. These management consultants are themselves specialized, since they include administrators, registered nurses, dietary consultants and physicians who advise with respect to standards of care and environmental conditions.

Summary

As a property investment, health-care facilities represent a major area of long-term investment opportunity. Although the development and operation of such facilities require specialized expertise, the know-how is available. As the profitability of well-planned and efficiently operated health-care facilities becomes better known, such institutions will represent a larger element in brokerage and property management activities.

Health-care facilities appear to offer a special opportunity to developers and managers of residential communities for the elderly. The immediate accessibility of a custodial care institution on the same location as a multi-apartment project can offer a number of attractions to tenants, especially if the operations of a health-care facility are flexible enough to adapt to the needs of residents of this type of community. For example, a nursing home might make hot meals available to apartment dwellers who are temporarily unable to do their own cooking but who prefer to remain in their own living quarters. Alternatively, the availability of temporary custodial care within sight of the patient's apartment eases the psychological problem of making the transition to a nursing home or sheltered care facility.

Viewed from the developer's and manager's point of view, the health-care facility not only rounds out the services provided to tenants but also constitutes an exceptionally good investment in itself.

Gerald Harris is president of New Medical Diversified, Inc., Chicago, an organization of professional administrators engaged in the development and management of health-care facilities. During the last 12 years, he has been responsible for the design and equipping of more than 150 such institutions with a total of more than 30,000 beds.

Irving Lord Mark, IDSA, is vice president of New Medical Diversified, Inc. He has worked with hospitals, nursing homes and clinics for more than 20 years and is assistant architect with planning and functional organizations, supplying them with both design treatment drawings and detailed working drawings.
Managing a Marina Complex

The following is a case study in capsulized form for those interested in or involved with marina or marina/apartment developments. It is a generally accepted truism that each apartment complex is a unique management problem unto itself. It can also be stated that marina complexes are just that, only considerably more so. The individual physical facilities, financing economics, market quality and quantity components influence their respective objectives and methods tremendously. In reality, a marina can well be compared to a pocket-sized country club, with a membership or tenant spectrum encompassing the airline stewardess, the young executive (single or married), and the middle-aged, with unexpected emphasis on the semi-retired and retired.

All experienced and professionally qualified property managers are equipped to handle the residential management facet of an apartment/marina complex. It was with the marina element that we encountered many new management challenges. In its simplest terms, a marina investment breaks down as follows:

1. Planning—regional, community, marina site, tides, climate, etc.
2. Financing—interim and permanent sources.
3. Construction—engineering, construction costs, physical facilities, etc.
4. Operation—day-to-day supervision for continued growth, efficiency of operation and maximum cash flow.

While the CPM or managing director usually is not expected to be an expert in all of these fields, he should be conversant with their dependent interrelationships and over-all effect.

The balance of this article will be devoted to a brief delineation of some of the details of on-site operational procedures and observations allied with a marina operation.

The subject investment is located on approximately 35 acres of land and water in southern California's Marina del Rey. It consists of seven three-story apartment buildings, containing 390 ultra-modern one-, two-, and three-bedrooms units, with 488 contiguous boat slips.

The apartments vary in size from 730 to 1,850 square feet. All units are unfurnished, fully carpeted and draped. Rents run between 25 cents and 31½ cents per
LEASE APPLICATION

To expedite processing of your application for slip rental, please fill in the following application and return at your earliest convenience. The County requires us to file a report on all boat residents periodically.

Owner and/or Applicant

Name of Boat

Residence Address

Length

Beam

Draft

C. F. No.

Sail or Power

Type

Lease Period

Wing

Slip

Personal References:

1.

2.

Financial References:

1.

2.

Thank you for your cooperation in this matter.

MANAGING DIRECTOR

Applicant's Signature

Date
THIS AGREEMENT, made this ______ day of ______, 19____

hereinafter called "LICENSEE", and __________________________ hereinafter called "LICENSOR".

WITNESSETH

IT IS AGREED AS follows:

1. That the Licensor operates, owns and maintains an anchorage or landing at _______ Marina Del Ray, California 90291, for the rental to tenants of slips or mooring spaces. The Licensor agrees to accept and lease such slips or mooring spaces to the Licensee, for the following vessel: __________________________. Licensee also agrees the boot will not be occupied by anyone while in the slip continuously for more than three days. Licenser shall be the sole agent for such vessel. No vessel or equipment of the Company and fulltime paid hands regularly employed on the boat, to do any work on the boot. Licenser may from time to time have similar facilities or made available to Licensee. 

2. Licensee acknowledges receipt of $__________, as security for Licensee's performance of Licensee's covenants hereunder. The Licensee agrees to pay the Licensor $_______ per month, payable in advance, on the first day, but no later than the fifth day, of each and every month, as rental for space for the following described vessel: __________________________. and further agrees in consideration of the use of said space to abide by all the covenants and conditions hereof and, as well, the Anchoage Rules and Regulations of Licensor now in effect or as may hereafter be published by the Licensor, all the Ordonances Rules, and Regulations of the Harbor Department of Los Angeles County, reference Marina Del Rey now in effect or as may hereafter be revised, promulgations, Rules, and Regulations of the United States or any Department or Division or Agency thereof reference Marina Del Rey now in effect or as may hereafter become effective as though the same were included herein. This License Agreement shall commence on __________, 19____.

3. The vessel which is the subject of this Agreement is described as follows:

Name of Boat_________________________Cruiser  O  Sail  O

Built by_________________________

Model__________________________Rig  O  LOA_________________________LOL_________________________

Beam_________________________Draft_________________________Overhang forward ___________________________  

Overhang aft ___________________________

Horse Power_________________________  Single Screw  O  Twin Screw  O

CF#. ___________________________or Doc. #__________  Radio Call Sign ___________________________

Insurance Agent's Name and Phone No. ___________________________

4. This agreement may be terminated by either party of at least two weeks' written notice to the other, provided that rent to and including the date fixed for termination is paid before giving of such notice by Licensee and provided that such termination date is the last day of a calendar month. Deposit of a letter, postage prepaid, in the United States mail addressed to the Licensee at the address given below shall constitute notice to the Licensee hereunder.

5. Licensee warrants that the boat is used for pleasure only and not in any commercial undertaking or use, and agrees to vacate the premises, upon written notice, whenever said boat is used for other than pleasure. 

6. Licensee agrees not to store equipment on the floats or landings without the Licensor's written permission first being obtained. 

7. Licensee agrees not to permit any dogs bought on the premises by him or his guests to commit any nuisances on the Licensor's ramps, docks, slips or fingers. Violation shall constitute grounds for cancellation of rental agreement. 

8. Except by mutual agreement between them, neither the Licensor nor Licensee shall permit solicitors, brokers, salesmen or workmen, other than regular employees of the Company and fulltime paid hands regularly employed on the boat, to do any work on the boat, while it is in the rented space, or to solicit on the anchorage premises.

9. Licensee shall not permit point remover, burning of paint, or spray guns to be used on top sides or above decks nor to point topsides while in rented space, except in work slips especially provided; however, ordinary maintenance shall be permitted. Licensor shall be the sole judge of what work institutes "ordinary maintenance". 

10. Licensee agrees that should he sell or part with possession of the boat, that the new Owner or possessor has no right to the space allotted to the boat. Licensee further agrees that the Licensor may from time to time move the boat from the particular slip to another in Licensor's anchorage, without Licensor's permission, provided the same or similar facilities are made available to Licensee.

11. Licensee agrees that if Licensor violates or permits the violation of any covenant, agreement, or condition hereof, Licensor may take possession of Licensee's slip and may require the immediate removal of the aforesaid boat and its contents from the space assigned or may prevent the return of said boat to the slip, with or without court action and without liability, and may in such event store all property of the Licensee left on the dock until called for by the Licensee, without liability.

12. Should the Licensor take action against Licensee to enforce payment of any sum due hereunder or to enforce any obligation of Licensee hereunder, Licensee agrees to pay costs of such action, together with reasonable attorney's fees.

13. Licensee agrees to hold the Licensor harmless and indemnified it for any loss, damage or liability of any kind or claimed by reason of any acts or failure to act on the part of the Licensor or his agents, employees or guests or in the use of the moorings or mooring space for the boat.

14. LICENSEE AGREES TO GIVE WRITTEN NOTICE TO LICENSOR WITHIN 10 DAYS OF ANY SALE, TRANSFER OF OWNERSHIP, TITLE, OR REGISTRATION OF ANY VESSEL MOORED WITHIN THE ANCHORAGE. Boat tenant parking shall be in those areas designated by the Licensor, management, and Licensee agrees to comply with parking and traffic control regulations set forth by the Licensor, management, and Los Angeles County. Use of a decal, affixed to the vessel, shall constitute receipt of parking decal. Licensee also agrees the boat will not be occupied by anyone while in the slip continuously for more than three days, as per County Ordinance B191, Section 102, and will further require the written permission of Licensor.

15. WAIVER OF ANY CONDITION BY LICENSOR shall not be deemed to be a continuing waiver.
While elements of marina management are similar to that of a land-bound apartment complex, the management-lessee relationship is magnified since the lessee brings his personal property and pride of ownership to you and calls for a special awareness of boating customs on the part of management.
square foot plus all utilities (water, gas and electricity); variance depends upon water view, height, and relationship to complex facilities—pool, saunas, recreation rooms, hydrotherapy pool, billiard rooms, elevators and laundries.

The slip rental schedule is subject to the same constant competitive analysis in marina operation as in any other real estate management investments. In an apartment complex we lease space, shelter and amenities. In a marina we are dealing with an entirely separate and exciting area of similar yet different elements. When leasing boat slips, the lessee brings his personal property consisting of space, shelter, amenities and pride of ownership to you. The resultant management-lessee relationship is magnified and intensified far beyond the normal lessor-lessee association and requires firm judgment on management's part and a special awareness of boating and boating customs.

Our slip rental scale had been $1.25 per lineal foot. Subsequent to a comprehensive market study, we concluded the following new schedule was in line with competition provided we added to, altered and improved existing services, specifically 24-hour security guard patrol and installation of wharf and wing telephone booths. The new schedule instituted was $1.75 per lineal foot for apartment residents with boats or for one-year slip leases; $2.00 per lineal foot for month-to-month tenants; and $2.25 per lineal foot for live-aboards. Our slip rental program also incorporated security key deposits.

Several additions and improvements were made at nominal expense. The security patrol was already on duty 12 hours a day; thus, the increase for full coverage was negotiated at a slight over-all increase. The telephone booths were installed at no cost to management and produced an additional revenue. Some minor dock, dock box, wing, and electrical repairs were made.

At the same time we instituted a Sunday morning 8-to-10 continental brunch (coffee and rolls) for our boat residents, served in a sheltered area adjacent to the dock manager's office. The slip occupancy factor was improved from 82 to 96 percent within 90 days after orientation of the dock manager on public relations procedures and the institution of the aforementioned improvements and services.

(Text continues on page 262)
**RULES AND REGULATIONS**

1. The word "Marina" is used herein to indicate Marina, a yacht-berthing facility, as well as any person duly authorized to represent the Marina. The word "tenant" is used to indicate the owner of a boat legally within the Marina or any person who is otherwise using the facilities.

2. When a boat enters the Marina, it immediately comes under the jurisdiction of the Marina and shall be berthed only where ordered and maneuvered as directed.

3. No tenant shall throw, discharge or deposit from any boat or float any refuse matter, oil, spirits, inflammable liquid or oily bilges into the harbor. All such matter shall be deposited into appropriately marked containers within the Marina.

4. Use of boat toilets not equipped with chlorinators or effluent treatment or storage devices approved by the Los Angeles County Health Department shall not be permitted within the Marina. The Marina reserves the right to inspect all boats for installations and proper operation of such devices.

5. There shall be no laundering or drying of wearing apparel on deck or rigging at the Marina.

6. Except in approved lockers, the use of floats to store or place supplies, materials, accessories or gear of any kind shall not be permitted within the Marina.

7. No major repairs or complete overhauls shall be made on boats moored at the Marina. Extent of such repairs shall be at the discretion of the Marina.

8. Unnecessary operation of engine in berth shall not be permitted.

9. Except for entering or leaving slip, main engines, power generating equipment, or other noise-making machinery shall not be operated between the hours of 5 p.m. and 9 a.m.

10. Engines may not be operated in gear while boats are secured to dock.

11. Water or power lines shall not cross main walks.

12. All boats shall be moored by tenants in a safe manner.

13. The Marina reserves the right to inspect all boats to determine if they are properly identified and equipped for safe operation in accordance with Coast Guard Regulations and other applicable regulations.

14. The speed limit within the Marina shall be 5 knots.

15. Fishing from Marina premises shall not be allowed.

16. The maximum distance by which any boat (including all projections such as transom platforms, booms, bait tanks, etc.) may extend beyond the end of the berth shall be 4 feet. No part of any boat shall extend over the main walkway.

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**DOCK MANAGER’S JOB DESCRIPTION**

**Position:** Dock Manager  
**Report To:** Managing Director

**Days:** 6 days per week (daylight savings time)  
5 days per week balance of year, preferably Thursday through Tuesday

**Hours:** 8 a.m. to 5 p.m. (one hour for lunch)

**General Duties:**
To keep the docks and boating facilities in a clean, safe and well-maintained state of repair. This includes the dry boat and locker storage areas.

Includes responsibility to maintain adequate records on boats in anchorage and comply with company and County regulations affecting residents’ boats. Slip priority lists shall be maintained and posted and assignments made according to priority policy set up by the managing director. (is often the first contact with visiting yachtsmen; their reaction to our hospitality will depend on how they are treated by dock manager.

This job is primarily a “working manager’s job,” which means it calls for best performance of duties when out of the “office.” In other words, a minimum amount of time should be spent inside and a maximum outside.

There are no set dress regulations but boat shoes, slacks or shorts and clean shirt are in order. Other personnel under dock manager’s supervision should observe same. Under current policy, management shall supply dock manager and each subordinate employee with three (3) complete uniforms per week and laundry for all permanently assigned personnel.

Apartment facilities such as pool, etc., should not be used by employees either on or off duty. There is a fine line between friendliness and familiarity. Personnel may be offered a drink from well-meaning tenants; this should be graciously declined.

Responsible for assigning work to assistants. Although any of these duties may be delegated, dock manager will be held responsible for them in entirety.

**SPECIFIC JOB DUTIES & AREAS OF RESPONSIBILITY**

**Maintenance and Security:**
1. All gates and doors to docks, small boat storage and restrooms are to be locked at correct times. Keys to these are available to tenants and visiting yachtsmen for $2.00 deposit. A record shall be kept of all such deposits.
2. Trash barrels on docks, and oil cans should be emptied as needed. This will vary with the day of the week and season. The mark of a “second-rate” anchorage is trash spilling out of its container.
3. Clean docks by hosing off at least twice a week.
4. Keep docks painted and repaired and report any damage to docks to the managing director by memo.
5. Replace burned-out light bulbs as needed on docks and hoist and in parking, boat storage garage and restroom areas.
17. All connections made by tenants to Marina electrical receptacles shall be grounded.
18. Children under 12 years are not permitted on floats without the immediate presence of their parents or other responsible adults.
19. Animals shall be leashed at all times. Should the size or temperament of your pet disturb the peace of others or commit any nuisance on any property of the Marina, such animal(s) shall be removed by the tenants.
20. Disorder, depredations or indecorous conduct by a tenant or his visitors that might injure a person, cause damage to property or harm the reputation of the Marina shall be cause for immediate termination of the tenant’s Berth Rental Agreement.
21. Tenants shall promptly notify Marina of any unsafe or hazardous condition that comes to their attention.
22. Tenants are requested, for their own protection, to notify the Marina when they expect their boat to be away from its assigned berth for periods in excess of one week.
23. It shall be unlawful for any unauthorized person to solicit business or offer for sale goods, wares, merchandise or services or solicit orders for such sales on the premises of the Marina.
24. Unauthorized advertising signs are prohibited aboard any boat in the Marina.

6. Keep outside parking and storage areas “picked up” and clean of papers, old boat gear, etc.
7. Tag all small boats or other gear on docks violating any provision of dock rules and regulations.
8. Check for unauthorized boat baths or other gear attached to docks which may be unsafe or deface docks. These all should be tagged.
9. Familiarize yourself with the electrical and plumbing shut-offs, switches, etc., so that in case of failure or emergency, you will know what to do. Although not expected to be an electrician or plumber, a knowledge of mechanical and other equipment will prove invaluable to dock manager and the marina.
10. Familiarize yourself with the County Harbor and Small Crafts regulations, location of fire alarms, phones and methods of notification. Also note key personnel to contact at the Harbor offices in an emergency.
11. Make recommendations and suggestions at any time which may affect revenue, economics, improvement of services or operational procedures.

Controls, Procedures & Paper Work:
1. Maintain a Slip Rental Agreement and Application to Lease for each lessee keeping a boat in the marina anchorage. These should be made out in duplicate and signed by tenant. Retain one copy for files and give tenant carbon copy.
2. Prepare a monthly report showing all boats, rental rate, rentals due and payable, CF numbers, lengths, slip numbers, live-aboards, etc.

3. Prepare a monthly report showing all boats on dinghy racks and dry-boat storage, gear lockers rented and storage garages. Send to accounting.
4. Maintain a guest register showing date in and out, together with name of visitor, address, club membership, charges, if any, etc.

Sales:
1. Boats in slips and dock areas should return maximum income. Any vacancies should be filled immediately by priority. If there is any question about priority, the managing director shall decide.
2. All lockers and storage garages should be rented; managing director is to be kept advised of waiting lists.
3. Requests for permission for filming or use of boats or premises commercially shall be referred to the managing director’s office.
4. Employees are not allowed to do work on tenants’ boats unless approved, costed and billed for such services.

Miscellaneous:
1. Dock manager or assistant shall check all boats daily to see that they are properly secured and moored and also check water line.
2. Each employee shall be instructed and encouraged to augment the new 24-hour security patrol as to the overall tenant and equipment safety and security.
A dock manager is not an absolute necessity; the position can adequately be supervised by 1) the on-site manager and staff; 2) qualified dock maintenance personnel; or 3) a yacht broker. The accompanying job description was created as a general directive to the individuals responsible for all marina facilities at the complex.

The general manager's primary sales purpose is to maintain 100 percent occupancy of all slip space. To assist him in this optimistic objective of leasing, the following two forms should be employed in order to rent to only qualified yachtsmen: the lease application and lease agreement. We recommend careful review and confirmation of the information supplied by the prospective tenant and visual inspection of his boat prior to acceptance. The physical condition of a prospective tenant's boat is an excellent indication of its future appearance in your berth and, to some degree, the manner in which its owner will conduct himself and captain his guests.

Another point of particular interest when interviewing a lessee is to ascertain the number of owners, as this affects parking requirements as well as water and electricity consumption.

While slip rental charges are usually computed on a lineal footage basis on the West Coast, they are and may be calculated on a square foot basis. A word of caution along this line—the lineal footage referred to is L.O.A. (length overall) and not L.W.L. (length water line). Also, when evaluating the desirability, charges and acceptance of a craft, one should not overlook overhangs resulting from bowsprits and dinghy davits.

Controlling the acceptability of overhang in a slip and other various and sundry items come under the "Rules and Regulations" of the respective anchorage. The accompanying list of regulations was evolved from the Harbor and Navigation Code, Department of Small Craft Harbors, County of Los Angeles. We conformed to a basic minimum of harbor ordinances and inculcated those items germane to our operation.

At the time of lease application and lease signing, which are done concurrently, we also require the lessee to sign an addendum to the effect that he has received and read the "Rules and Regulations," thereby circumventing any "I didn't know about that" excuse in the future. An attorney's counsel is recommended on any matters such as these where documents are to be drawn up and implemented.

All in all, a marina operation can be a highly rewarding financial investment, showing 25-35 percent gross profit before taxes, depending, of course, on the extent and quality of facilities. These include slips, boat repair, boat sales, haul-out services, dry berthing, marine hardware and equipment, fuels and lubricants, labor, apartments, restaurants, coin-operated laundries, showers, automatic vending machines, ice machines, etc.

The key to success is proper initial planning so that the facilities are economically designed, whereby a reasonable service/product charge may be applied, employing prudent and practical management procedures which will assure and maintain a fair return on the investment. Where the facilities are initially inadequate, finances limited, public and employer relations arbitrary, procedures and programs nonexistent, and where previous management lacked control over finances, purchasing and selling, the incoming professional manager has to bring more than just creativity to the job.

A marina is a community unto itself. Any professional property manager, whether he is in residential, commercial or industrial management, must operate with a degree of flexibility to meet and solve daily problems. But the needed degree of flexibility, creativity and public relations ability is most pronounced in a marina enterprise because of the continual interplay of changing market demand, general public contact, community association and close tenant relationships. The future should hold unlimited potential for those working and investing in the marina-oriented field.

Robert F. Miller, CPM, is managing director of a marina located in Marina del Rey, California. He is a graduate of Monmouth College, Monmouth, Ill., and is a registered holder of a Certificate in Real Estate, University of California. Mr. Miller is a member of the board of directors, Bay Area and Western Cities Apartment Owners Association and a certificate holder in the Exchange Division of NIREB.
EDITORIAL:

Real Estate and the Tax Bill

by Lloyd D. Hanford, Sr., CPM

The most burning question in real estate circles at the moment is: "What will happen to investment properties when the new tax law is finally written by Congress?" For several decades real estate investment and development activity have run a merry race on the extra legs of tax benefits and leverage with attractive financing. There seems to be little doubt that some, if not most of these tax benefits will be removed or, at best, adjusted considerably downward. We have already witnessed the attrition of tight money (with concurrent high interest rates) and the demands of lenders for "a piece of the action," all of which reduce cash flow.

In such an unfolding restrictive economic climate, can real estate development and investment enjoy activity? Or, paraphrasing this question, "Will real estate, by itself, be an attractive and competitive investment vehicle?"

It serves little purpose to philosophize that social and economic conditions in our nation will suffer because of these restrictive factors. The facts of life, at the moment, are that political expediency demands such a policy toward tax benefits and that unbridled competition for free money creates attractive, alternate opportunities for lenders (truth-in-lending, to the contrary, notwithstanding).

We must always play the numbers game in the world of finance, so let's look at some numbers:

- Consumer loans yield 12-18%
- Trade acceptances yield 7¾-8¼%
- U.S. Treasury bills yield 6¼-7¼%
- Certificates of deposit yield 6½-6¾%
- Time deposits in banks yield 4%
- Time deposits in savings and loan associations yield 5-5½%

All of these are short-term commitments on the part of both borrower and lender, allowing desired flexibility in these uncertain times. Long-term commitments in mortgage loans and real estate historically demand higher yields because of relative nonflexibility. At this writing, prime yield rates for mortgage loans range from 8½ to 9¼ percent, often plus loan charges and a piece of the action in some form.

In our current economic climate, it is obvious that after-tax yields must be competitive. This means that a marketable property must show a minimum cash flow of about 9 percent to attract investment capital and substantially above that figure to encourage land development.

The critical question is: "Can this be accomplished and by what practical means?" The answer is "Yes" if certain realistic procedures are pursued. The easiest answer is to raise rents and the second solution is to reduce sales prices. Both of these processes will occur to a limited extent. Rents can only be increased in conformance with the ability to pay and a concurrent strong space demand. Reduced sales prices (in spite of reduced market values) are more difficult and they depend upon the urgency for a seller to act or on his alternate investment opportunities or on his willingness to trim his anticipated after-tax profit.

In essence, the real estate investment must be competitive in regard to security of capital, enhancement possibility and overall after-tax cash flow. There will still be some very attractive tax benefits from allowable depreciation regardless of the ultimate direction of tax reform and the realization of these benefits will possibly demand long-term ownership.

Net cash flow has two main determinants: gross income and operating expenses. Gross incomes are improved by justified rent increases and judiciously administered operating expenses, resulting in maximum available net operating incomes. Maintenance and repair deficiencies must not mitigate against the long-term highest and best use of the property. Otherwise, capital is depleted in increments falsely assumed to be income. To effect maximum realistic rents and to accomplish minimums in operating cost require a very comprehensive knowledge and expertise in the current real estate market.

Real estate can stand on its own feet if it is capably administered. Management and administration are synonymous!

Lloyd D. Hanford, Sr., CPM, is one of the principals of Hanford-Freund & Co., San Francisco. He was 1958 national president of IREM, and he is currently faculty director of IREM's Course III and Editor of the Journal of Property Management.
Cash Flow and Multiple Regression Techniques

Comparative Analysis of Apartment Properties

by William M. Shenkel, CPM

Increasingly management offices are turning to electronic data processing—not only for housekeeping purposes—but for decision-making. Two earlier articles demonstrated how computer terminal units using service bureaus could help resolve real estate investment problems. Terminal units, remote job entry techniques and time-sharing devices make these investment models available to even the smallest office. This article reveals additional ways in which terminal units and prepared programs may be used to analyze apartment investments. To meet this objective, it concentrates on two models: cash flow analysis and multiple regression techniques.

In brief, cash flow models show how net proceeds from a real estate investment change under different depreciation schedules and mortgage terms. Multiple regression analysis, on the other hand, yields two results: (1) it gives the most probable sales price (without using conventional appraisal data); and (2) it shows the factors weighed most heavily by investors in income property. A short description of each model indicates how they help resolve investment decisions.

CASH FLOW LOGIC

The cash flow analysis reported in the earlier article consists of a four-part model. The model starts with a single proposition:

1. Given the land value and the building value, what is the annual cash flow assuming (1) a building depreciation schedule, (2) mortgage terms, including secondary financing and (3) a personal net income tax rate? With the required data, namely, gross income, vacancy allowances and expense data, this part of the model reveals how a proposed investment or purchase would be treated under selected depreciation and financing schedules.

2. The next part of the model is more relevant to the short-term investor. Given the proposed land and building cost, what is the capital gain position, assuming a sale within a ten-year projection period? An estimate of the capital gain and the most probable selling price at the end of each year are necessary for this calculation. Further, the analysis requires calculation of the annual cost basis and the recapture of accelerated depreciation, if such an option is selected. The model includes a projection of the after-tax sales proceeds—assuming a sale at the end of each year.

3. The third part of the model starts with the projected gross income and converts this figure to net income and, hence, to value. The print-out compares the value given under a selected income capitalization method with the proposed cost or purchase price. To accomplish this objective, the model prints: (1) the estimated value under equity capitalization,
(2) the estimated value under property residual capitalization and (3) the estimated value under either the land residual or building residual method. In each instance the model follows the format used in the conventional narrative appraisal report.

It will be realized that the user of this model must enter the variables essential to net income capitalization with considerable care. By the same token, the values reported under this model are highly dependent on the net income calculation, capitalization rates and the land or building values necessary to the residual capitalization methods.

4. The final logic of a cash flow model helps to evaluate a particular apartment investment by a set of financial ratios. A recent version of the apartment model prints some 24 ratios that summarize appraisal, financial and property tax data.

One point deserves the strongest possible emphasis: The four-part model, like a narrative appraisal report or a management survey, depends heavily on accurate variables, trained judgment and professional experience. To be sure, investment models are no substitute for judgment—but compared to traditional analysis, they give more information, and they give it more quickly and more accurately.

Cash Flow Variables

To use four parts of the apartment investment model, the user must enter a list of over 60 variables. Most of these items are readily at hand; others must be entered only after consultation with managers, appraisers, mortgage bankers and other qualified professionals. The accompanying list of the input information reveals the importance of accurate, valid investment data.

Since the logic of cash flow models is fairly consistent for different property types, similar models for common investment-type real estate have been incorporated into a single model. Currently, the cash flow model under review is adaptable to mobile homes, office buildings, shopping centers, apartments and motels. In each instance the input information relates to a particular property type. Data on office buildings, for example, turn on the net rentable area. Financial information covering mobile home parks is reduced to a per-trailer-space basis. Large volume users then may process several property types under one computer run and under one model since each property type is handled as a subroutine. Hence, with computer companies offering time-sharing plans or serving as service bureaus, investment models are within the range of virtually every real estate office. With a computer running time of about one minute per property, computer charges constitute a relatively small expense.

Multiple Regression Analysis

It will be noted that cash flow models are highly dependent on information detail and valid data input. But under multiple regression analysis, market value may be estimated with minimum data—the value is statistically derived from recent comparable sales. By processing a group of sales of similar property types in the same market area, leading property characteristics—an apartment house, for example—are statistically related to current sales price and therefore to value. Generally speaking, for income properties at least 30 recent sales will be needed; a preferred number would be 100 to 200 sales. Note that the value produced under this system is directly related to recent sales—though income enters into the model in a slightly different manner.

The idea behind multiple regression analysis is that value is established by many buyers and sellers negotiating in the open market. The computer merely calculates the significance of factors that are weighed most heavily by buyers and sellers in fixing the final price.

Before explaining this model in greater detail and since the model depends on recent sales, it is useful to state some of the advantages of using multiple regression analysis (MRA). It is assumed that MRA will be used to estimate value for an investor-owned apartment.

1. MRA tends to be highly objective in that capitalization rates and net income calculations are unnecessary to estimate value. The variables associated with market value are taken from many sales. Moreover, this process does not require "adjustment" of comparable sales to the property appraised.

2. Multiple regression techniques are relatively simple to apply. Existing programs are arranged so that the user merely enters common property characteristics and the sales price into
punched card form. The computer calculates a formula that indicates market value of other apartments, given the common property features.

3. Note that multiple regression requires no knowledge of capitalization methods, net income or operating expenses.

4. To the extent that the estimated value is derived from a formula taken from actual, true, bona fide sales, highly accurate appraisals result—provided one is willing to accept market value as derived from many comparable sales.

5. Multiple regression formulas are drawn from the close association of property characteristics and property value. The market value estimate is taken, not from a few selected sales presumed as "comparable," but from large groups of sales that prove a close correspondence between property features and selling price. Hence, distorted sales prices are minimized by a relatively large number of sales and by statistical techniques. These latter advantages are not found in more conventional valuation methods.

6. Providing that at least 30 or more sales are processed under MRA, distorted or biased sales may be readily identified. In this role MRA becomes an important tool for judging the validity of market data.

It also is advisable to mention certain qualifications of MRA. Firstly, property infrequently sold may not be valued by MRA. But in metropolitan areas showing 30 or more apartment building sales per year, and certainly for single-family dwellings, land and other property types commonly sold, the model has proven its usefulness in estimating the probable sales value.

Secondly, multiple regression formulas may not be used to value real estate that is not closely associated with the area surveyed for multiple regression purposes. A model appropriate to San Francisco apartments would not work for Los Angeles apartments. Properties located in different types of neighborhoods or that differ in other material respects would probably require a separate sales sample or a coding of different property values.

And thirdly, multiple regression models must be based on reasonably current sales. Within limits, time may be used as a variable; yet it seems preferable to base the model on annual sales of the current year since prices today are not always based on past market relationships.

One final point: The interpretation of multiple regression data requires careful statistical interpretation. Much turns on converting property information to computer form and on the evaluation of statistical measures that associate property characteristics and value. A review of multiple regression principles emphasizes this point.

**MULTIPLE REGRESSION PRINCIPLES**

At the outset agreement must be reached on the market value concept. For the present, it will be held that values are imputed from the market. In this respect it is held that buyers and sellers negotiating freely in the market are the final arbiters of value. That is, the opinions of buyers and sellers of investment property override other value factors. Multiple regression, in effect, is a means of measuring buyer and seller opinion by statistical inference. To illustrate, suppose this reasoning is applied to the capitalization process. To capitalize net income in perpetuity most authorities are guided by this formula:

\[ V = \frac{d}{r} \]

Where: \( V \) = value
\( d \) = annual net income
\( r \) = the capitalization rate

Thus, the value of land earning $10,000, capitalized at eight percent, would be $125,000:

\[ V = \frac{10,000}{.08} = 125,000 \]

While this is a workable formula to value net incomes received in perpetuity, the formula describes only an identity. To understand the functional relationship between net income and value, this formula must be rewritten.

Thus, to use the same illustration

\[ \text{Value} = f(x) \]

Where "f" is a coefficient showing value given \( (x) \)—with \( (x) \) representing the annual net income.

Hence: \[ \text{Value} = 12.5(10,000) = 125,000 \]

In modern terminology, it may be said that the relationship between net income and value is such that, for any net income, value would be given by the relation 12.5. The relation between value and income, assuming a capitalization rate of eight percent, is shown in Figure 1.

In short, if you use an eight percent
capitalization rate, this is equivalent to multiplying net income times the coefficient, 12.5. In other words, by adopting the eight percent rate, a given change in net income is associated with a change in value equal to 12.5 times the change in net income. To put it differently, buyers and sellers of investment property are willing to pay a price equal to 12.5 times the net income. To apply the same reasoning to MRA, substitute gross income for net income. This latter step is advised because value is affected by other factors, the value may be more accurately predicted from the multiple regression formula found in most statistical textbooks. In this way, other factors may be considered in predicting value. The multiple regression formula commonly takes the form:

\[ Y = a + b_1(x_1) + b_2(x_2) + \ldots + b_n(x_n) \]

Where: \( Y = \) Value, a variable item dependent on other parts of the equation

\( a = \) A constant sum statistically determined by the computer
\( b = \) A multiplier or coefficient statistically determined by the computer
\( x = \) A property characteristic — the independent variables that affect value.
\( n = \) A subscript denoting any given number of items.

To illustrate with a hypothetical example, suppose that the value of an apartment building is determined by only two characteristics: the number of apartment units and the land area. By processing numerous sales of apartment houses, multiple regression analysis would associate these two characteristics with sales price. Value then would be predicted by the regression equation:

\[ Y = a + b_1(x_1) + b_2(x_2) \]

Where:
- \( Y = \) Value
- \( x_1 = \) Number of apartments
- \( x_2 = \) Land area in square feet
- \( b_1 = \) A multiplier or coefficient (calculated by computer) showing how much value changes as the number of apartment units change.

\( \text{Figure 1: The Relation Between Net Income and Market Value Under an Eight Percent Capitalization Rate} \)
used to relate a change in several property characteristics that probably affect apartment house prices. If true, then the computer may be used to relate a change in several property factors. In fact, most authorities could readily concede that value, in addition to gross income, follows from many other characteristics (12 or more units):

**Type of Apartment Building**
- 12-24 Units
- 25 or More Units

**Age of Building**

**Rental Terms**
- Gross Income
- Two or More Utilities Included in Rent
- Maid Service
- Linen Service
- Other Services

**Locational Characteristics**
- Distance to Beach
- Distance to Shopping Center
- Distance to Arterial
- Location on Navigable Water

For this illustration only two variables were considered for a hypothetical case. To report the most probable selling price for income property, it will be readily conceded that value, in addition to gross income, follows from many other factors. In fact, most authorities could easily list 30 or more property characteristics that probably affect apartment house prices. If true, then the computer may be used to relate a change in several property characteristics with a change in value. For instance, in a recent study of apartment houses in Broward County (Fort Lauderdale), Florida, value was believed associated with the following apartment-house characteristics (12 or more units):

- Monthly Rent Per Efficiency, Furnished
- Monthly Rent Per One Bedroom, Furnished
- Monthly Rent Per Two Bedroom, Furnished
- Monthly Rent Per Three Bedroom, Furnished

To relate a change in several property prices, one can consider the following:

- Monthly Rent Per Efficiency, Furnished
- Monthly Rent Per One Bedroom, Furnished
- Monthly Rent Per Two Bedroom, Furnished
- Monthly Rent Per Three Bedroom, Furnished

With this formula, the value for an apartment in the same market area would be found, (1) given the number of apartments and (2) given the land area in square feet. Suppose computer analysis indicated that:

\[ a = \$17,000 \]

\[ b_1 = \$5,000 \]

\[ b_2 = \$2.00 \]

Hence, an apartment building with 25 apartments and a land area of 50,000 square feet would have this value:

\[ Y = \$17,000 + \$5,000(25) + \$2.00(50,000) \]

\[ Y = \$242,000 \]

For this illustration only two variables were considered for a hypothetical case. To report the most probable selling price for income property, it will be readily conceded that value, in addition to gross income, follows from many other factors. In fact, most authorities could easily list 30 or more property characteristics that probably affect apartment house prices. If true, then the computer may be used to relate a change in several property characteristics with a change in value. For instance, in a recent study of apartment houses in Broward County (Fort Lauderdale), Florida, value was believed associated with the following apartment-house characteristics (12 or more units):

- Monthly Rent Per Efficiency, Furnished
- Monthly Rent Per One Bedroom, Furnished
- Monthly Rent Per Two Bedroom, Furnished
- Monthly Rent Per Three Bedroom, Furnished
owned apartment market. For this example, each of the variables listed above was statistically associated with 1968 sales prices. The computer showed how the price increased or decreased with the change in each item. In other words, if you wanted to know the value of an apartment in the same market area, you would quantify these variables and multiply the \((x)\) values for each property characteristic times its coefficient or multiplier. The sum of these products would be the projected sales price. To repeat, the computer calculates a multiplier for each property characteristic. The MRA for 48 Florida apartment buildings sold in 1968 produced the multiplier or coefficients for the property characteristics in Table 1.

Briefly the multipliers or coefficients given in Table 1 show the change in price that results from a change in the selected property characteristics. In reviewing these data, it will be realized that the multipliers do not necessarily measure the contribution of a given property characteristic to value. Instead the multiple regression technique merely predicts value given the 16 items listed in this table. Though other items were considered, the analysis showed such variables were relatively insignificant in predicting value.

In other words, by beginning with a sum of $18,624, you must add $270,996 for the existence of elevators, and subtract $25,942 if the apartment has between 12 and 24 units, then add $8,210 for a multiple building, garden court apartment and then subtract -.91 times the number of square feet in the land area and so on for each item of Table 1. Because these items interact, it is impossible to say or explain these statistical measures in causal terms—that is, without considerably more analysis. But we know that if these variables are recorded in this way, the model accounts for 99.8 percent of the total property value. For those who are statistically minded, this model will predict value within $16,496 of the sale price in about two thirds of the time (one standard error of the estimate). For the apartments under study, the latter figure compares with the average sales price of $261,264.

Another way of testing the feasibility of this analysis is to compare the sales price with the value calculated by the computer using some 27 variables. These figures are presented in Table 2. It shows that if 27 items are recorded for apartments, using the same formula presented in Table 1 for
16 characteristics plus 11 other characteristics, the computed value varies from the sales price by an average difference of 5.4 percent. Considering the 48 sales sample, which includes all sales in 1968, only six apartment buildings had a computed value of more than 10 percent of the sales price. Eight buildings have a computed value of less than one percent of the sales price.

In fact, a more careful review of the sales price would probably show that the computed value corrects for sales distortion resulting from unusual financing, uninformed buyers or sales misinformation. It should be added that the sales prices in this distribution have not been verified; they are taken from state revenue stamps. So it would appear that at least part of the extreme differences could be explained by inadequate sales data and not necessarily because of deficiencies of the computer derived formula.

**Gross Income and Value**

Property managers are well aware of the close relationship between annual income and value. To reveal this relationship, multiple regression analysis was used to determine the relative importance of gross income. This study indicated that gross income may be used to estimate value—but with a sacrifice in valuation accuracy. For example, by relating gross income to sales price for the 48 apartment buildings, they reveal that 94.14 percent of the sales price may be explained by the gross income. Considering only this one variable, value may be found by:

\[ \text{Value} = \text{Constant sum} + \text{annual gross income multiplier (gross income)} \]

In this illustration, the constant sum is an amount to be added to the product of gross income and the annual gross income multiplier. The reason for adding the constant sum is suggested by Figure 2. The constant sum of $6,047 is merely a means of positioning the line of Figure 2. This model will give an estimated value, given the gross income. The answer will have a degree of accuracy for a similar sample equal to a maximum value variation of $64,535 in approximately two-thirds out of 100 cases—and in this instance the data applies to 48 apartment buildings with an average sale price of $261,000. By adding more variables, the multiple regression technique produces a much higher level of accuracy. Though investors and others often rely on the gross income multiplier, the data suggest that the probability and magnitude of error increases if you rely only on the gross income to estimate value.

**The Importance of Apartment Characteristics**

Given some 27 characteristics of apartment houses in the 48 sales sample, it was...
<table>
<thead>
<tr>
<th>Sale Number</th>
<th>1968 Sale Price</th>
<th>Computed Value</th>
<th>Difference Between Sale Price and Value</th>
<th>Percent of Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$120,000</td>
<td>$110,930</td>
<td>$9,070</td>
<td>7.6</td>
</tr>
<tr>
<td>2</td>
<td>125,000</td>
<td>121,612</td>
<td>3,388</td>
<td>2.7</td>
</tr>
<tr>
<td>3</td>
<td>128,000</td>
<td>120,477</td>
<td>7,522</td>
<td>5.9</td>
</tr>
<tr>
<td>4</td>
<td>135,000</td>
<td>125,304</td>
<td>9,696</td>
<td>7.2</td>
</tr>
<tr>
<td>5</td>
<td>200,500</td>
<td>187,856</td>
<td>12,644</td>
<td>6.3</td>
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<td>217,332</td>
<td>22,668</td>
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<td>16</td>
<td>1,362,600</td>
<td>1,365,132</td>
<td>532</td>
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<td>17</td>
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<td>179,291</td>
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<td>190,000</td>
<td>175,804</td>
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</tbody>
</table>

Table 2: A Comparison of Sales Prices and Computed Values of 48 Apartment Buildings

* An amount less than 0.1 percent.

Average Difference 5.4

Volume 34, Number 6, November–December 1969
<table>
<thead>
<tr>
<th>Rank</th>
<th>Property</th>
<th>Coefficient of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gross Income</td>
<td>.970</td>
</tr>
<tr>
<td>2</td>
<td>Total Floor Area</td>
<td>.967</td>
</tr>
<tr>
<td>3</td>
<td>Total Number of Units</td>
<td>.941</td>
</tr>
<tr>
<td>4</td>
<td>Elevator</td>
<td>.775</td>
</tr>
<tr>
<td>5</td>
<td>Number of 1 Bedroom Units</td>
<td>.761</td>
</tr>
<tr>
<td>6</td>
<td>12-24 Units</td>
<td>.624</td>
</tr>
<tr>
<td>7</td>
<td>25 or More Units</td>
<td>.624</td>
</tr>
<tr>
<td>8</td>
<td>Land Area</td>
<td>.563</td>
</tr>
<tr>
<td>9</td>
<td>Location on Navigable Waterway</td>
<td>.326</td>
</tr>
<tr>
<td>10</td>
<td>Swimming Pool</td>
<td>.310</td>
</tr>
</tbody>
</table>

\[
VALUE = a + b \cdot (x) = 6047 + 6.22(100,000) = 628,047
\]

(HORIZONTAL AND VERTICAL SCALES ARE IN THE RATIO OF 6.22 TO 1)

Figure 2: Gross Income Multiplier Derived from Multiple Regression Analysis
believed worthwhile to correlate each variable with the sales price. That is, if the sales price changes in perfect association with the change in other variables, the coefficient of correlation would be 1.0—a perfect correlation. This means, for example, that a unit change in gross income would correspond to a unit change in sales price. This distribution revealed that some 10 property characteristics have coefficients of correlation ranging from .970 to .310. These data are summarized in Table 3.

It will be noted that gross income has the highest correlation with sales price—a coefficient of correlation of .970. The next important item was the floor area, with a slightly lower correlation coefficient of .967. Moreover the relationship between gross income and floor area has a coefficient of correlation of .963. Presumably, value is closely associated with both gross income and floor area. In other words, by measuring floor area, you are reasonably certain that gross income will change in close correspondence with total floor area. And to a lesser degree, this conclusion also follows for the total number of apartment units.

The lowest correlation is found for a swimming pool showing a coefficient of correlation of .310. The other 17 property characteristics have correlation coefficients of less than .310.

**Value Prediction Without Gross Income**

Because of the close correspondence between gross income, floor area, and the number of units, it would appear possible to predict sales price without relying on gross income estimates. If this proposition follows, value may be predicted without considering gross income when its accuracy is questionable or when it is uncertain; for instance, in the case of a new project.

It will be recalled that the value prediction drawn from this type of analysis is taken from recent sales. The value is derived statistically by associating property characteristics of numerous transactions with the sales price of each property. Therefore, the 48 sales sample of apartment buildings was subjected to multiple regression analysis, omitting gross income. Sales price was associated with 25 other variables. The data revealed that value was highly correlated with non-gross income variables. But the possible error in predicting value increased. For instance, 16 variables accounted for 99.22 percent of property value (the coefficient of determination). Yet, if the model was used in 100 cases, the price would be within $28,747 of the sales price in approximately two-thirds of the cases. Again these data relate to 48 sales with an average sales price of $261,264. To further test the multiple regression formula, each of the 48 apartments was valued by multiple regression multipliers or coefficients and compared to the sales price. The value derived from the MRA formula varied from the sales price—on the average—by 10.1 percent. Table 4 lists the property characteristics used to predict sales prices without reference to net or gross income.

In reviewing Table 4 one fact stands out: characteristics commonly associated with apartments rent are heavily weighted. Apparently apartment house values may be indicated by subtracting a constant of $6,200 and by coding the number of buildings, the land area, floor area and number of apartment units. After these four characteristics, apartment services and locational factors appear to be the next most significant determinants of value. This is another way of saying that probably apartment rents are a function of the land value, the floor area, the number of apartment units, the services supplied by management and certain locational factors. Such a result tends to agree with property management experience and it would appear (at least within tolerable limits) that sales price may be projected fairly accurately by coding certain property characteristics without reference to gross or net income.

This last conclusion seems to be fairly well supported by Table 5. These data show that 62.6 percent of the 48 apartments have a computed value within 10.0 percent of the sale price. Another eight buildings have a computer-derived value falling between 10.1 and 15.0 percent of the sales price. The remaining 10 cases of computed values range from 15.1 percent to 33.6 percent. If greater accuracy is desired, it is clear that gross income should be used as a value-determining variable.

**Gross Income and Apartment Characteristics**

Indeed, the preceding example suggests that gross income is highly correlated
with other property characteristics. To test the association of gross income with other property features, gross income was compared to some 26 property characteristics. The coefficient of correlation listed in Table 6 shows how gross income changes with variations in other property characteristics. Considering the 48 apartment house sample, the high correlation between floor area and gross income would suggest that gross income could be predicted from square foot floor area. Or conversely, a low correlation between the land area and gross income would suggest that other factors are more significant to gross income determination.

Table 6 ranks the first 14 items that show a coefficient of correlation above .186. Most of these relationships agree with normal expectations. First it will be noted that sales price is highly correlated with gross incomes. Secondly, total floor area measured in square feet for the total apartment building shows an almost perfect correlation of .963. Similarly you would expect a close correspondence between the number of apartment units and the total gross income (.944).

It will be noted that number of bedrooms—which is really a measure of apartment size—appears highly significant. The relative importance of one, two and three bedroom units is probably a reflection of the type of apartment buildings included.
A Comparison of Apartment Values Determined by Computer and the Sales Price

Table 5

<table>
<thead>
<tr>
<th>Computed Value as a Percent of Sales Price</th>
<th>Number of Apartment</th>
<th>Percent of Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5.0</td>
<td>15</td>
<td>31.3</td>
</tr>
<tr>
<td>5.1-10.0</td>
<td>15</td>
<td>31.3</td>
</tr>
<tr>
<td>10.1-15.0</td>
<td>8</td>
<td>16.7</td>
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<tr>
<td>15.1-20.0</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>20.1-25.0</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>25.1 and Over</td>
<td>2</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>100.1</td>
</tr>
</tbody>
</table>

Table 6

The Correlation Between Gross Income and Apartment Characteristics

<table>
<thead>
<tr>
<th>Rank</th>
<th>Property Characteristic</th>
<th>Coefficient of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sales Price</td>
<td>.970</td>
</tr>
<tr>
<td>2</td>
<td>Floor Area</td>
<td>.963</td>
</tr>
<tr>
<td>3</td>
<td>Number of Units</td>
<td>.944</td>
</tr>
<tr>
<td>4</td>
<td>Number of One Bedroom Apartments</td>
<td>.724</td>
</tr>
<tr>
<td>5</td>
<td>Land Area</td>
<td>.673</td>
</tr>
<tr>
<td>6</td>
<td>Number of Two Bedroom Apartments</td>
<td>.668</td>
</tr>
<tr>
<td>7</td>
<td>Elevator</td>
<td>.642</td>
</tr>
<tr>
<td>8</td>
<td>12-24 Units</td>
<td>.582</td>
</tr>
<tr>
<td>9</td>
<td>25 or More Units</td>
<td>.582</td>
</tr>
<tr>
<td>10</td>
<td>Swimming Pool</td>
<td>.308</td>
</tr>
<tr>
<td>11</td>
<td>Location on Waterway</td>
<td>.301</td>
</tr>
<tr>
<td>12</td>
<td>Laundry Room</td>
<td>.207</td>
</tr>
<tr>
<td>13</td>
<td>Number of Efficiency Apartments</td>
<td>.199</td>
</tr>
<tr>
<td>14</td>
<td>Number or Three Bedroom Apartments</td>
<td>.186</td>
</tr>
</tbody>
</table>

In this sample. But the sample probably indicates a strong demand for one and two bedroom units in contrast to the demand for efficiency and three bedroom units. It will be observed that the land area shows a relatively high correlation (.673) with gross income. Likewise, elevators, swimming pools and a navigable waterway location appear to be significantly associated with gross income. In addition, the number of units per apartment building showing a rank order of eight and nine in this list was coded to determine if apartments with 12 to 24 units showed a different relationship to gross income than apartments with more than 24 units. In both instances the coefficient of correlation was equal.

In sum, Table 6 shows that for the 48 apartment buildings, apartment income will be closely related to sales price, floor area and the number of apartment units. Other factors that call for higher rent such as the land area, elevator service, swimming pool and a waterfront location also stand out. And certainly other factors are important. But this distribution includes items that would be highly associated with other amenities of middle class and luxury apartments. Probably apartments with a swimming pool and an elevator would probably have a highly desirable location and would have sauna baths, an attractive lobby and similar features.

The reader should be very cautious in applying these results to other buildings. It will be recalled that the multiple regression model applies to a local sample. Further, to apply this technique to actual cases, the multiple regression formula should be taken from 1969 sales. Here the evidence suggests, in the strongest possible terms, that meaningful projections of value within acceptable limits may be derived from statistical processing of recent sales.

With multiple regression computer programs widely available and with computer runs of five minutes or so per sample, there appears little reason why investment properties may not be subject to statistical analysis. For increasingly, as real estate prices continue upward, investors will associate offering prices with recent sales and with current rent rolls. But in an inflationary environment, there is always the difficulty of selecting the most appropriate apartment house sale for comparison to the property valued. The usual solution is to make "sales adjustments" that presumably correct historical sales to produce "current market value."

The examples presented here demonstrate that multiple regression eliminates much of the subjectivity in projecting capital values. The projection of value for income properties, especially, may be relied on if the resulting formula is taken from many observations of buyers and sellers who have negotiated at an arm's length. Multiple regression analysis shows the characteristics between property and recent sales prices. The result is to statistically weigh value-determining factors so that the critical observer may interpret the accuracy of the market value projection.
By properly processing apartment house data and by its careful interpretation, this sample indicates that multiple regression constitutes an invaluable supplement to income property analysis.

Yet most authorities will probably continue to rely on cash flow models and the conventional capitalization process. But it would appear helpful in the decision-making process to supplement conventional data with statistically processed sales to produce information leading to the optimum decision. A summary of other studies will make this point clear.

SUMMARY

Real estate specialists have long recognized the importance of cash flow analysis. In many offices cash flow analysis is a routine calculation. But the availability of computers and programs to analyze property have made this analytical model even more effective. For now the relationship between an investment proposition and yield may be shown for alternative plans. Based on rapid computer calculations, the real estate consultant may now select the best combination that meets investment goals. For the investor and real estate professional, computer analysis of cash flow will contribute to the best utilization of available capital and land.

As presented here multiple regression analysis has been used to project the value of an apartment based on statistical analysis of property recently sold. Such an analysis has disclosed the significance of the variables associated with property value. By using a relatively large number of sales and by employing statistical tools, the evidence suggests that the accuracy of income and value projections may be improved and made quite objective—much more objective than estimates made without computer analysis.

Multiple regression analysis probably has its greatest usefulness to property managers when it is used in combination with cash flow print-outs. In this way investment decisions may be based on realistic financial data and the latest available market information. On this latter point it will be recalled that MRA of income property shows the relationship between property characteristics and value as indicated by actual sales.

The validity of this method has been tested in several projects undertaken by the University of Georgia’s Department of Real Estate and Urban Development. Similar models on income property have been completed in several states and for different property types, including apartments with less than 12 units, motels, condominiums, agricultural income property and commercial land. In each instance, multiple regression analysis has given results equal to or better than the data summarized here.

It will be realized too that this explanation represents a summary treatment of multiple regression analysis. Space does not permit detail on the statistical tools available for this type of study. Among the statistical devices commonly employed are the standard error, the standard deviation, the coefficient of determination, “F” ratios, “T” values, the transregression of property variables, the “zero intercept” and the correlation matrix.

The IREM Apartment Experience Exchange Committee has anticipated the growing interest in computer-processed information relating to investment properties. The committee is sponsoring a study of over 300 Chicago apartment buildings to show the relationship between yield and other property characteristics. As a part of this undertaking, variables in the annual Apartment Building Income-Expense Analysis will be analyzed by multiple regression analysis. A preliminary report will be published in an early issue of the Journal.

Clearly the development of computer programs to analyze real estate investment plays an increasing role in guiding investment decisions. The last article in this four-part series will show how computer programs may be used to analyze leasehold interests and net ground leases in combination with cash flow analysis. The effect of real estate tax exchanges will also be analyzed with computer assistance. The models presented in this four-part series are only suggestive of the type of analysis that the professional real estate firm may now adopt as part of its normal operation. Surely, the practicing professional will increasingly play the leading role in developing more effective computer programs for real estate analysis.

William M. Shenkel, CPM, is a chairman of the Department of Real Estate and Urban Development, College of Business Administration, at the University of Georgia, Athens. He is also vice-chairman of the Journal Editorial Committee.
Professional Merchandising
Or Amateur Peddling?

by R. L. Sanders, CPM

Recent analyses of the current apartment rental market indicate, among other things, that there has been a decline in concessions such as a month's free rent, free moving costs and other various inducements. The recent NAREB Real Estate Market Survey indicates that concessions were prevalent in one-half of the market areas in 1965 following the apartment construction boom of 1963 and 1964 but that current reports reflect a trend downward to 16 percent of the national market.

This obviously is a result of the still strong demand and high occupancy levels which the industry is maintaining. If, as is anticipated, the supply of new units reaches a saturation point, we can look forward to a reversal of this trend and experience a return once again to concessions in those areas first affected by the demand and supply factor.

Are we not discounting the income potential of a property and lowering the rental value when giving a concession? The word takes on a distasteful significance when used by the property manager—professional or otherwise—as a crutch in marketing a product which is not otherwise inferior or unrealistically priced.

Granted, there are certain areas which are over-built for various reasons and the manager faces the challenge of selling in a highly competitive market. However, it is a fact that certain landlords and even professional real estate managers have, for expediency’s sake, used the concession where it has not been justified economically. A builder-developer may justify this tactic in his financial anxiety to fill up his building if he does not intend to retain the property for investment-producing income. The truth is, however, that any concession must be assigned an economic value; realistically, both seller and buyer should be aware of and recognize this.

We know of housing projects which are constructed and fully leased up in record time. Ostensibly, the property manager is an unqualified success, but if concessions were readily granted, it is a fallacy to credit this effort as productive of the highest and best use over the longest period of time.

Concessions are attractive to the prospective tenant, of course, because they increase the dollar value of his purchase. Aside from the fact that the owner must attach an economic cost to the concession, he has the recurring problem at the lease expiration date when the tenant expects a similar inducement in return for his renewal. While the landlord is in a better bargaining position with an incumbent tenant, he will still have to offer as much if not more depending on market conditions. Invariably it is the nature of the recipient of such concessions to exact comparable or better terms in the future.

Instead of the negative approach of free rent, why not increase the amenity value of the apartment with the installation of an air conditioner, a better stove, refrigerator, disposal or dish washer? Improvement or rehabilitation can take many forms, such as new kitchen cabinets, wall or floor tiling, etc. The tenant receives his benefit and the capital improvement does not decrease the owner’s income dollar beyond that of whatever the concession would cost in the first instance. His out-of-pocket expense is the same and the value of the property is enhanced without compromising his rental income. It is true that the amenity will not attract the tenant who is stretching his income dollar to meet his rent obligation but then he is not a desirable prospect anyway.

We should offer our product at a fair and realistic price and then sell it with the integrity and skills which we possess as professional management people. We should merchandise our product—not peddle it. If we are in a highly competitive market, we must use all our resources, and inducements certainly, but not offer concessions which compromise our obligation to the owner and negate the value of our service to him.

R. L. Sanders, CPM, is Midwest regional manager for Amprop, Inc., of Miami, the exclusive real estate management consultant for United States Investment Fund. He was previously on the staff of Arthur Rubloff & Company, Chicago, involved with the management of metropolitan residential buildings.
Creative Management, Market Analysis, Save Obsolescent Trailer Park

by John E. Free, CPM

The opportunities available to the professional property manager to create wealth are legion and are limited only by our own powers to think creatively and imaginatively. Following the procedures and concepts of professional property management practice, a seemingly hopeless property was converted from an economic disaster to a desirable and profitable investment. The result achieved from this particular case is applicable to many types of properties since the procedure remains constant.

The subject property concerns a 15-year-old trailer park in a West Coast city of 70,000 population. The paucity of data for older trailer parks was evident because of the rapidly changing concept of mobile home parks and the reluctance of mobile home associations to admit to the existence of this type of older facility.

Briefly, mobile home parks fall within three categories. They are:

1. The modern mobile home park with a density not exceeding 8-10 units per acre, accepting up to 24 x 60 ft. mobile homes.
2. The interim mobile home park with a density up to 18 units per acre, accepting up to 10 x 60 ft. homes.
3. The older trailer park with a density of 20 or more units per acre, accepting 8 x 40 ft. trailers.

The subject property fits well within the third category. It is located on 40,000 sq. ft., having 34 spaces and the capacity to accept only trailers which were 8 ft. wide. The property had been unsuccessfully for sale for two years.

A regional analysis indicated a growing demand and limited production of modern mobile home facilities. It would have seemed appropriate to stop here, develop a new park, spend a year on planning and
was acquired for 6.8 times the effective gross income from an average of $37 per space to $40. The increase to $16,500 this year due to a rental rate adjustment concluded by the latest market survey.

A neighborhood analysis gave indication that the vacancy factor among the two older categories of trailer park was practically nil. This lack of vacancies was due to two factors: First, the new mobile home parks would not accept older units and second, the majority of older unit owners were unwilling or unable to pay the rent in newer parks. The former proved to be the rule rather than the exception. In addition, the analysis showed that, based on comparable parks, rents could be raised from an average of $37 per space to $40.

However, further analysis showed an increasing demand for low cost housing and an increasing dearth of supply. The economics of purchasing and renting house trailers for rental purposes showed that by placing a $1,000 trailer on a trailer site costing $3,000 the rent could be increased from $40 to $80 per space. Thus, in theory, a 33 percent increase in cost per space would result in a 100 percent increase in gross rent.

When put into practice, the theory proved itself admirably. The trailers were purchased as space became available and were immediately rented. Turnover and operating cost increased but at a much lesser ratio. In studying Figure 1 it can be seen that the expenditure of $13,000 for 13 trailers increased net operating income from $7,500 per year to $15,000 per year, which will increase to $16,500 this year due to a rental rate adjustment concluded by the latest market survey.

The point is merely this: for two years no one realized this obsolete property was an attractive investment until a competent analysis had been conducted. These tools are available to us daily, if we would only use them. The opportunities are always there—it is up to the professional to explore them.

John E. Free, CPM, resides in Santa Barbara, Calif., where since 1958 he has been involved in the management, leasing, construction and sale of office and commercial investment property. In addition to serving as an executive councillor of the Los Angeles Chapter of IREM, he holds membership in BOMA, IREF, and is presently serving as president-elect of the Santa Barbara Realty Board.
Renting by Radio

Vacancies, no matter how many or how few, whether they develop quickly or are a long-standing problem, are the bane of property managers. When they are overcome, naturally the means for achieving success are usually determined so that if a similar problem occurs again, the same solution may be applied.

In June 1965, the vacancy loss at the Fairlington Garden Apartments, located in Arlington County in metropolitan Washington, D.C., was steadily increasing. This complex is composed of 3,439 units in 579 buildings and is situated on 322 acres. It is the largest garden apartment complex in the metropolitan area.

Since 1943, the Fairlington had enjoyed the reputation of being a superior apartment development. Vacancy loss during these years had rarely exceeded 1 percent and waiting lists often extended up to two years. It was, therefore, a matter of grave concern when the vacancy loss figure rose to 4 percent and more than 50 apartments were available. Furthermore, market prospects, which included overbuilding in Virginia and the lack of modernization within the Fairlington itself, indicated even worse conditions ahead.

Previously, little advertising was undertaken but panic had caused the management to run large ads in the newspapers, gimmick advertising in hotels and motels and the use of various pamphlets—but with little or no success. Realizing the name of the complex was not reaching the public, the management of Fairlington decided to shape the building’s advertising around radio promotion.

Since Fairlington had long been a family community and since it therefore catered to people over 25 years old, the phrase “Families Favor Fairlington” was coined. Radio stations aimed at this age group were chosen because experience indicated the older the family, the safer the risk and the more settled they are in living habits.

Finally, approval was given by the owner and an advertising budget of $40,000 was appropriated ($11 per unit) of which $25,000 was earmarked for radio advertising. Four stations were chosen because of their low cost and good overall listening audience.

To ascertain the success of the radio advertising, a survey was completed by each new prospective tenant as to whether he or she heard about Fairlington from friends, newspapers, the Apartment Shoppers Guide, radio, or any other similar sources. As the months passed, the survey indicated people were not hearing of Fairlington through the radio. A 70 percent majority indicated they heard about the units from friends.

During these same months, the vacancy loss continued to climb until it reached a high of 6.4 percent in August, 1967. Naturally, the effectiveness of radio advertising was in question. Paradoxically, while prospective tenants indicated the Fairlington had been recommended by sources other than the radio, 80 percent answered that they had heard our advertising at one time or another. Therefore, the plan was continued because the name was at least being heard.

From August, 1967, to April, 1968, the vacancy loss dropped to a low of 2.9 percent. The statistics still reflected that most people were listing friends as their means of hearing about the complex. However, most also indicated they had heard the advertising. Who can say, therefore, whether the thought of renting might not have been planted by a radio advertisement.

Slight changes were made in scheduling the advertisements when various stations had a change in type of programming. One station was dropped because it changed to country and western music and the audience changed and another station featuring rock and roll was added because the
rental market seemed to be catering to a younger person.

Emphasis on advertising by radio is placed in the so-called “drive-time” spots. In other words, advertising is mostly purchased between 6-9 a.m. and 5-7 p.m., weekdays noons and Saturday and Sunday afternoons. Studies have shown most people are listening to the radio in their cars during those periods.

As mentioned previously, large ads were being run in the newspapers at exorbitant rates. Management did not feel the ads were helping since Fairlington was still competing with other ads of the same size. Actually there was no way to stand out in the classified section. Therefore, newspaper advertising was cut back to a small ad run daily throughout the year. These ads hopefully served as a reference after advertising had been heard on the radio. The newspaper ads also carried the slogan “Families Favor Fairlington.” By carrying a small ad every day in two papers the same amount of money was being spent as when large ads were run on the weekends. Throughout the year approximately $9,000 is spent on newspaper ads.

The total radio advertising budget accounts for approximately $25,000 of the total $40,000 advertising budget. Other advertising is consumed through the Washington papers, local Virginia papers, the Apartment Shopper’s Guide and sponsorship of Little League baseball and football teams. Budgeting for the radio advertising has been a relatively easy task. Since the budget is set at $40,000 and cannot be raised, set contracts have been established with the radio stations whereby Fairlington purchases so much time every 13 weeks. For three years we have maintained a consistent total. Newspaper advertising has been consistent and is based on so many cents per line.

The final question is whether radio advertising has helped rentals. We believe the answer is yes though statistics would not bear this out. People are funny in their habits. Obviously our radio ads are being heard but how people respond varies. Many pick up a newspaper to check further while some ask friends already living in the complex. Therefore, these people list either newspapers or friends as their methods of hearing about the apartments. However, a number of present tenants have mentioned radio advertising.

While it is impossible to place fixed numbers on how many people have been influenced to rent because of a radio ad, a definite psychological factor exists. The fact of simply hearing an ad may be enough to plant the seed of thought in a person’s mind and when that person thinks about renting an apartment, the name he has heard will pop forward. For this reason, radio advertising has been continued. Who is to say radio advertising hasn’t helped? Since September 1967, rentals for each month have been up 25 percent.

Stephen R. Rotroff is executive assistant to the Vice President and General Manager of the Fairmac Corp., Arlington, Va., which owns the Fairlington complex. His duties include the overall supervision of purchasing, accounting, budgetary controls and indirect supervision of its management teams located in Washington, D.C., and Virginia projects. He holds a bachelor of business administration degree from Wake Forest University and is presently attending American University.
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Noted author of the text, James C. Downs, Jr., Certified Property Manager, is chairman of Real Estate Research Corporation, economic counselors, and vice president of Downs, Mohi and Company, one of the nation's largest management firms. He is former Housing Coordinator for the City of Chicago and Assistant to the Mayor as well as editor and publisher of *The National Market Letter*.

In 1952 Mr. Downs was awarded the degree, Doctor of Commercial Science by the University of Florida for academic contribution. *Principles of Real Estate Management* is used as a standard reference and text by more than 50 universities and colleges.

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11-1 INFRARED HEATER

The gas-fired Sunpak infrared heater has been introduced by Infrared Dynamics for indoor and outdoor applications at factories, loading docks, patios, swimming pools, construction areas, hotel, store, and building entrances, etc.

Operated with a remote-control wall switch, Sunpak is designed to function in wind and rain, offering warmth from infrared rays which are converted to heat when they strike an absorbent object. Permanent or portable units are available.

11-2 AEROSOL FOAM HAND CLEANER

"Painter's Formula 400" is formulated to remove wet or dry paint but may also be used as an all-purpose hand cleaner containing lanolin. Produced by the Illinois Bronze Powder and Paint Company, it has the consistency of shaving cream and is rubbed in until the hands are clean, then wiped or washed away. Plastic bristles are built into the cap of the 8 oz. can, enabling the user to clean under fingernails and around cuticles. The product is non-flammable and will not harm fabrics, manufacturer states.

11-3 RECORD RETENTION TABLE

The Record Retention Timetable has been updated by the Electric Wastebasket Corp. The eight-page Timetable contains a chart which lists the length of time specified by government authorities for the retention of over 165 office records, including papers, microfilm, plastic cards and punched tapes, etc., and also suggests how to dispose of important records safely. Brochures outlining a paper disposal program and describing different models of electric wastebaskets and paper shredders are included.

11-4 ANTI-STATIC SPRAY

Bryn Mawr's Anti-Static Spray has been created for use on carpets to provide insulation against shocks and keep carpets clean. A non-flammable, water-based emulsion, it creates a chemical shield lasting from 30 to 90 days, manufacturer states. It is available in a 20-oz. aerosol can as well as in bulk package.

11-5 SOLAR CONTROL WINDOW FILMS

3M's lines of solar control films are described in two new brochures. Designed to reflect heat, glare, and fade-causing ultraviolet rays of the sun, the transparent and translucent films can be adhered to the glass windows of offices, factories, homes. Physical properties and performance data are listed for these professionally-installed films which, additionally, provide shatter resistance to glass.

11-6 PHOTOCONTROL TIMERS

Complete technical details are available for two photocontrol-timer combination controls from Precision Multiple Controls. The controls are intended for those lighting applications where the circuit is to be energized at a predetermined light level and turned off at a predetermined time (i.e., on at dusk and off at midnight).

11-7 TOWEL DISPENSER

The Steiner Company offers brochures describing the complete line of Universal recessed towel dispenser fixtures.
The fixtures reportedly accommodate any type and brand of toweling. Toweling and soap storage compartments can be added or removed, and waste receptacles can be converted from the stainless steel type to the disposable paper bag type. Constructed of 20 and 22 gauge stainless steel, additional features include one-piece corner flanges, 1/4" face flanges, tumbler-type locks, and heavy-duty continuous piano hinges.

11-8 BUILDING SECURITY CATALOG

Honeywell's Commercial Division has published a 32-page, illustrated catalog that covers complete building security systems as well as individual components specifically engineered for commercial, institutional, and industrial buildings. A dozen basic systems are described, including motion detection, capacitance (electronic fence), audio detection, switches and other contact devices, vibration detectors, taut wires, infrared beams, and closed-circuit TV. The catalog also includes a building security checklist.

11-9 CULTURED STONE PANELS

"Stonehenge" is a cultured stone panel designed for commercial and industrial applications, made by Johns-Manville. It has the appearance of natural stone but is a mixture of synthetic calcium aluminum silicate binder and finely dispersed asbestos fibers, pigments, and fillers. The 4' x 8' panels weigh about one-third less than stone and have no stratifications to cause weakness, states the producer.

11-10 TRASH CAN CONTAINER

To meet the demand for greater storage of trash cans in confined areas, the J. G. Wilson Corporation announces the Double Depth Tec-M Container. Up to 10 trash cans or drums can be stored in one Double Depth unit, requiring fewer trash pickups. Trash cans are protected

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by the heavy-gauge galvanized steel container which is covered with a prime coat of rust-inhibiting paint. The rolling front is a midget slat closure. Each unit is shipped assembled and ready to use.

11-12 DECORATIVE TILES
The Amsterdam Corporation announces a series of decorative ceramic tiles from Villeroy & Boch called "Serie Exquisit." Designed for architectural and interior decorative applications, the series comes in a wide range of colors and designs—abstract forms, florals, and interesting texture variations. The patterns offered combine crackle, speckle, and solid glazes and are raised on the surface of the tile. A packet of individual full-color facsimile tiles measuring 6" x 6" is available.

11-13 ELECTRIC CARD FILE
Datavue Products' Roto-Vue electric card file holds as many as 10,000 standard file cards. Simple access is provided through push-button operation; 17 models of the desk-size rotary file accommodate four standard card sizes: 4" x 2", 5" x 3", 6" x 4", and tabulating card size. Each file is finished in tan with aqua green trays; a standard set of guides and a dust cover come with each unit.

11-14 INSECTICIDAL GRANULES
A report describing the use of D.I.G. (Deodorant Insectex Granules) in eliminating odors and destroying insects has been released by the Eagle Chemical Company. The formulation reportedly combines deodorant and insecticidal action in a single granule. A vapor blanket is released which kills flies, gnats, roaches, termites, silverfish, mosquitoes, spiders and other insects. D.I.G. granules are available in 1-lb, shaker-top dispensers or in 50, 100 and 200 lb. drums.

11-15 FOUNTAIN DESIGN GUIDE
A Fountain Design Guide and Catalog is available from Roman Fountains, Inc. Data on performance characteristics is given for all operating conditions, with emphasis on splash factor conditions. Pointed out are the advantages of certain water displays, along with recommendations towards the consideration of alternate spray devices for special conditions. Sections are devoted to the history of fountains, catalog sections, accessories, and engineering data.

11-16 BURGLAR ALARM
The Watch Dog Electric safeguard burglar alarm is designed specifically for use in apartment suites. Entirely self-contained in a 5" x 9½" x 3¾" heavy gauge aluminum box, it is mounted inside and near the top of the apartment door. Any door movement by a vandal or burglar shifts a detector wand and sets off a powerful alarm. Only the resident's special key can turn off a previously set unit. Developed by the Hershberger Electric Co.

11-17 ELECTRIC FURNACE
A line of electric forced-air furnaces has been introduced by the Federal Pacific Electric Company. The furnaces incorporate as standard factory-installed equipment such features as cooling fan relay, high CFM delivery, adjustable belt-driven blower, 2-speed motors and internal subfusing. The furnaces are available in 7.5, 10, 12.5, 15, 17.5, 20 and 25 KW capacities with air deliveries for 3 tons of air conditioning on the smallest size and up to 5 tons on the largest.

11-18 CRACK SEALANT
A polymer sealant designed to close cracks in concrete floors, decks and ramps—indoors and out—has been announced by Set Products, Inc. Curing within the crack to an elastic, waterproof mass that stretches as the concrete expands or shrinks, "Polyvyn" also bonds to asphalt, wood, metal, glass and plastic surfaces. Set Products claims that Polyvyn retains its elasticity despite extreme temperatures and is unaffected by gasoline, grease, salt or alkali detergents.

11-19 DUSTING TOOL
The Golden Arm Duster by Dust Chasers is designed to reach up to 16' in the cleaning of overhead ducts, pipes, fixtures, ledges, etc. Made of aluminum tubing, fitted with knurled turn-locks for telescopic adjustment, the duster allows the user to remain at floor level while performing cleaning tasks. Three attachments are available, one for general purpose dusting, one for walls and a curved duster; each holds a duster sleeve for a particular cleaning job. The sleeves are treated with a liquid cleaning solution and can be retreated after laundering.
11-20 STAINLESS MIRRORS, SHELVES

A line of stainless steel framed mirrors, shelves, and combination units has been developed by the D. J. Alexander Division of the Bradley Washfountain Company. Mirrors range from 18”–72” in width and 20”–24” in height. Shelves are available 5” in depth and 16”–72” in width. Some feature double-roll tissue holders; these extra-wide shelves are designed to hold purses, packages, etc., in full view to prevent loss.

11-21 ALUMINUM COLUMNS

A descriptive catalog introduces Bel-Met, Inc.’s, new line of Four Seasons aluminum columns for porches and patios. The line includes 1½” square tubing DeCor Columns and 1” SlimCor Columns in both 8’ flat and corner design, all of which can be used with regular Four Seasons railing sections. All have a heart scroll pattern, available in black or white finish which the manufacturer claims will not rust or require painting.

11-22 MONITORING PANELS

A series of multiple channel, solid state, low-voltage remote indicating panels (RIP) is described in literature from the Detex Corporation. Designed primarily for exit-door surveillance and detection of illegal entry, they can be door surveillance and detection of illegal entry, they can be

**STATEMENT OF OWNERSHIP MANAGEMENT AND CIRCULATION**

(Act of October 23, 1962, Section 4369. Title 39, United States Code.)

Publisher: File two copies of this form with your postmaster.

1. Date of filing: September 26, 1969.
2. Title of publication: Journal of Property Management.
5. Location of the headquarters or general business offices of the publishers (Not printers): 155 East Superior Street, Chicago, Ill. 60611.
6. Names and addresses of publisher, editor, and managing editor. Publisher (Name and address): Institute of Real Estate Management, 155 E. Superior St., Chicago, Ill. 60611. Editor (Name and address): Lloyd D. Hanford, Sr., CPM, 47 Kearny St., San Francisco, Calif. 94108. Managing editor (Name and address): Douglas J. McDonough, 155 E. Superior St., Chicago, Ill. 60611.
7. Owner: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)
   
   Name: Institute of Real Estate Management of the National Association of Real Estate Boards, 155 E. Superior St., Chicago, Ill. 60611.
   
   8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities (If there are none, so state): None.
   
   9. For completion by nonprofit organizations authorized to mail at special rates (Section 132.122, Postal Manual): The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes. (Check one)
   
   □ Have not changed during preceding 12 months.
   
   □ Have changed during preceding 12 months.
   
   (If changed, publisher must submit explanation of change with this statement.)

10. Extent and nature of circulation

<table>
<thead>
<tr>
<th>Average No. copies each issue during preceding period</th>
<th>Actual number of copies of single issue published nearest to filing date</th>
</tr>
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<tr>
<td>A. Total no. copies printed (Net Press Run)</td>
<td>8,274</td>
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<tr>
<td>B. Paid circulation</td>
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</tr>
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<td>1. Sales through dealers and carriers, street vendors and counter sales</td>
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<td>2. Mail subscriptions</td>
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<tr>
<td>D. Free distribution (including samples) by mail, carrier or other means</td>
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<td>E. Total distribution (Sum of C and D)</td>
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<tr>
<td>F. Office use, left-over, unaccounted, spoiled after printing</td>
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<tr>
<td>G. Total (Sum of E &amp; F)—should equal net press run shown in A)</td>
<td>8,274</td>
</tr>
</tbody>
</table>

I certify that the statements made by me above are correct and complete.

DOUGLAS J. MCDONOUGH
Managing Editor

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DOUGLAS J. MCDONOUGH
Managing Editor

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VOLUME 34, NUMBER 6, NOVEMBER–DECEMBER 1969

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257
supplied in any multiple of ten channels (10 to 50) for control of protected doors, emergency exits, fire doors, smoke and fire alarms, industrial equipment and processes. On actuation of any circuit, the appropriate lamp switch lights up and an audible signal sounds.

11-23 COMMERCIAL MOWER
The Bunton Company announces the new "RC Twenty-One," a heavy-duty, 21" cut commercial mower with a 4-cycle, 3.5 hp engine. The heavy gauge steel frame has handles which fold down over the mower and a special handle on the front of the frame for safe hand-hold while lifting. The model has adjustable cutting heights from 1" to 3".

11-24 TANDEM PARKER
To double the available parking in any existing facility, Space-O-Matic America, Inc., offers the Space-O-Matic tandem parker. A car is raised overhead by the pull of a handle so that a second car can be parked underneath. The operation is designed to take less than a minute and can be performed by an attendant or building tenant, manufacturer states. Space-O-Mats are portable and intended for use in parking lots, commercial and residential buildings of all types.

11-25 FLOOR MAINTENANCE MACHINES
The Breuer Electric Co. announces the Tornado 281 series of floor maintenance machines used to scrub, strip, polish and buff. Power is delivered in a straight line—from power head to the face of the brush—to produce "Concentric Action" cleaning. All models feature the Tornado fully-enclosed power train. Four models have from 1-1 ½ hp continuous duty motors; brush speed is 174 RPM. Included as standard equipment are a union mix brush and 50 ft. of heavy-duty vinyl-covered cable.

11-26 AIR CONDITIONERS
McQuay, Inc., introduces its Thinline II Seasonmaker, a line of hideaway fan-coil air conditioners with solid state fan speed controller that offers unlimited speed variation, claims maker. Having a range of units—two application series, three-unit types, nine sizes, six coil selections—the line is designed to offer quiet performance and individual control of year-around air conditioning in apartments, hotels, offices, hospitals, and other institutions.

11-27 CARPET CARE
Advance Floor Machine Company offers its revised carpet maintenance manual that provides detailed instruction on how to properly care for all types of carpeting. The 18-page manual tells how to set up a carpet care program tailored to individual needs and offers tips on how to solve common carpet cleaning problems.

11-28 ZONE VALVES
For automatic temperature control of a room, loop, or full zone of a hot-water heating system, Danfoss has available its Bravo non-electric zone valves, described in a color folder. A self-contained, modulating, thermostatic control valve in combination with a self-actuated control unit, Bravo is designed specifically for residential/apartment hydronic zoning and provides constant individual temperatures through continuous modulating action.


E. F. Hutton announces the formation of E. F. Hutton Real Estate Corporation

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