ALJ/EA /hh *

Decision 93377 August 4, 1981

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of RADIO RELAY CORP.-CALIFORNIA, a California corporation, for a certificate of public convenience and necessity to construct additional radiotelephone utility facilities.	Application 59477 (Filed February 26, 1980)

Farrand, Malti, Spillane & Cooper, by Wayne B. Cooper, Attorney at Law, and Ronald H. Mercer, for applicant.
Warren A. Palmer & Michael Willoughby, by Warren A. Palmer, Attorney at Law, and Homer Harris, for Industrial Communications Systems, Inc.; and A. M. Hart, H. R. Snyder, Jr., and Kenneth K. Okel, by Kenneth K. Okel, Attorney at Law, for General Telephone Company of California; protestants.
Dinkelspiel, Pelavin, Steefel & Levitt, by David M. Wilson, Attorney at Law, for Gencom, Incorporated, interested party.

O P I N I O N

Radio Relay Corp.-California (Radio Relay) is a radiotelephone utility (RTU) offering one-way tone-only public utility paging (signaling service) in the Los Angeles basin area (the most populous portions of Los Angeles, Orange, Riverside, and San Bernardino Counties).[1] This service, which is fully interconnected with the public switched telephone network, is

1/ Radio Relay now has six transmitter sites in its presently certificated service area at Van Nuys, United California Bank Building (now First Interstate Building) in downtown Los Angeles, Flint Peak, La Habra, Newport Beach, and San Pedro.

offered on two radio frequencies licensed by the Federal Communications Commission (FCC). The frequencies are 158.7 megahertz (MHz), known as the high band, and 35.22 MHz, known as the low band. Radio Relay has been providing one-way paging in southern California since Decision (D.) 62156 (1961) 58 CPUC 756, by which the Commission took jurisdiction over such activities.

By this application, Radio Relay requests a certificate of public convenience and necessity under Public Utilities (PU) Code Section 1001 for authority to construct and operate certain additional low band base transmitters for service from, to, and within additional territory (expansion area)[2/] adjacent to the eastern and northern boundaries of its presently certificated service area. The application is protested by Industrial Communications Systems, Inc. (Industrial) and by General Telephone Company of California (General). Evidence in opposition was presented by Gencom, Incorporated (Gencom).

Five days of public hearing were held before Administrative Law Judge (ALJ) Norman Haley at Los Angeles in July 1980. There were 90 exhibits and 614 pages of transcript. The matter was first submitted October 27, 1980, with receipt of concurrent briefs. The matter subsequently was reopened by the ALJ on March 31, 1981 to receive in the record a total of five additional pleadings filed by Radio Relay and Industrial, and then resubmitted on that date without further hearing.

2/ There are two main portions to the proposed expansion area. The eastern portion would cover territory generally from Laguna Beach and San Clemente on the south, Elsinore and Perris on the east, and Claremont, Upland, Rialto, Riverside, and San Bernardino on the north. The northern portion would include Newhall, Castaic, Bouquet Reservoir, Palmdale, Littlerock, and other mountain and desert areas.

Presentation of Radio Relay

Radio Relay presented evidence through Daniel Moynihan, Los Angeles regional manager, Ronald Mercer, chief engineer, Alan Rainbeau, assistant controller of Radio Relay and its parent corporation, and Betty Uzzel and Susanne Bailey, representing two telephone answering services.

Radio Relay provides one-way tone-only paging service on the low band system to approximately 1,700 paging units within its certificated area. In addition, it provides one-way tone-only paging service to approximately 27,000 paging units on the high band system. In addition to its existing low band and high band systems, Radio Relay operates in the Los Angeles basin under a high band intercarrier agreement with Industrial, another RTU. That agreement was approved by the FCC in 1977. Under the intercarrier agreement, Radio Relay has served much of the sought expansion area by sharing high band transmitter facilities operated by Industrial throughout that company's certificated area. The result is that the geographic area served by Radio Relay's high band is greater than that described on its own service area map.

Radio Relay's objective in this application is to more or less conform its own certificated service area to Industrial's in which Radio Relay's customers already are being served on the high band under the intercarrier agreement. It proposes to do this by offering service in a similar area on the low band. A map

showing the 43 dbu service contour[3/] for Radio Relay's existing system and the contour for the proposed expansion area is contained in Exhibit E attached to Radio Relay's filing dated March 18, 1981, discussed below. A map showing the area actually served by the combined high band facilities of Radio Relay and Industrial is contained in Attachment B of Exhibit 2.

The five additional pleadings received in the record on March 31, 1981 (referred to above) were occasioned by action of the FCC on November 18, 1980 in granting, in part, license applications of Radio Relay for new low band transmitters on Mt. Lukens (Los Angeles County) and on Santiago Peak (Riverside County). Radio Relay had also requested waiver of the height-power limitations of FCC Rules Section 22.205 to allow 150 watts effective radiated power (ERP) on frequency 35.22 MHz. The FCC denied the sought power waiver. Instead, it authorized Radio Relay to operate with a maximum ERP of 12.3 watts and 8.9 watts at those two locations, respectively. Among other things, the FCC stated that if an applicant or licensee desires to provide service beyond the area of a particular antenna site, it should accomplish this by means of additional transmitters or by changing antenna sites.

3/ The 43 dbu contour (43 decibel line) is a mathematically computed or field measured contour line around a transmitter which can be theoretically depicted on a map. The 43 dbu contour is the recognized and acceptable field strength level for measuring a radio signal for one-way paging to predict a paging transmitter's service area. A paging system is considered to have reliable service (90% effective) inside the 43 dbu contour line. A customer traveling within this area should be able to expect his pager (a little FM radio receiver) to properly emit a tone or vibrate virtually silently, as the case may be, nine times out of ten.

Radio Relay admits that the decision by the FCC not to grant its request for a power waiver would cause the 43 dbu coverage areas of the two originally proposed transmitters to be smaller than with the power waivers. It contends, however, that the filling in of areas lost through reduction in power is a simple matter. Radio Relay furnished copies of four applications to the FCC for facilities which assertedly would restore its overall service area to essentially that originally proposed. A new transmitter would be located at Magic Mountain (Los Angeles County) which would replace the one originally proposed for Mt. Lukens. Radio Relay contends that by locating the transmitter on Magic Mountain and directionalizing its antenna to the northwest, the 43 dbu contour would thoroughly cover the population centers originally sought to be covered by the Mt. Lukens site, even though only 7.3 watts of power would be used. Assertedly, all that would be lost as a result of relocating that facility would be some unpopulated wilderness areas.

Other new transmitters would be located at Kellogg Hill above Pomona (Los Angeles County), and in downtown San Bernardino (San Bernardino County), atop the highest nongovernmental building in the city. These transmitters, again using low power, would be designed to provide coverage throughout the area between Pomona and Riverside which would have lost service through the power reduction at Santiago Peak. Authority also is being sought from the FCC to modify the Santiago Peak site by directionalizing the antenna toward Riverside to further offset the power reduction.

Radio Relay contends that all of the proposed sites are available, accessible, and practical. It states that the Magic Mountain, Pomona, and Santiago Peak sites are already in use by other radio systems, and are free of any obstructions in the directions intended to be served. Assertedly, the San Bernardino location also would have unobstructed paths throughout the entire valley between Ontario and Riverside. Written agreements allegedly are already in force for all four sites.

In Exhibit E attached to its filing dated March 18, 1981, Radio Relay furnished a composite 43 dbu coverage map showing what its overall 43 dbu contour would be with the four new low band base transmitters in operation. The end result of the changes is not substantially different from the composite 43 dbu contour originally proposed with the power-waivered transmitters on Mt. Lukens and Santiago Peak (Attachment A of Exhibit 2). The company contends that the addition of two more transmitters at Pomona and San Bernardino would extend the 43 dbu contour, and by virtue of their proximity to the areas served, would dispel any concern about penetrating concrete and steel buildings and motor vehicles (problems with the low band alleged by protestants). Assertedly, there is ample testimony in the record to show that Radio Relay is financially and technically capable of installing the four transmitters now proposed as easily as the two originally proposed. The company contends that its engineers have set up and satisfactorily operated similar low band systems with substantially more numerous transmitters than are proposed for this system, using the same control techniques.

Radio Relay presented evidence through witnesses Moynihan and Mercer to show that:

1. While the high band frequency in the Los Angeles basin has not yet reached capacity, it is fast approaching saturation (full loading) which is the point where so many pagers will be in use that unreasonable delays in transmission will be the unavoidable result.
2. Radio Relay now experiences delays during peak periods of 2 to 10 minutes and frequent or common delays of 7 to 8 minutes in transmitting high band paging calls.
3. Expansion of the low band system would permit diversion of at least some high band users to the low band, thus giving some relief to the high band.
4. Because of the possibility of eventual saturation of the high band, Industrial may wish to terminate its intercarrier high band paging agreement with Radio Relay, leaving applicant with no service to points in the sought expansion area.
5. It is necessary to expand the geographic coverage of the low band system because it has only about half the coverage of the high band system and, for that reason, cannot effectively compete with the high band system.
6. The proposal to expand the low band system complies with the state and federal regulations.
7. The proposed expansion will be technically and economically feasible, adequate, and of good quality.
8. If for any reason the low band transmitters do not provide signal strengths predicted under FCC rules, Radio Relay can and would add whatever additional facilities may be necessary to sufficiently saturate any area that has a continuing problem.

9. The erection of additional fill-in (satellite) transmitters would be a simple and economical matter.

According to Moynihan, four RTUs share the high band frequency in the Los Angeles basin, as well as the computerized terminal which operates the transmitters of the four companies. These carriers are Radio Relay, Industrial, RadioCall (R. L. Mohr), and Radio Dispatch. Industrial manages the shared computer terminal. Assertedly, Radio Relay's high band subscribers not only have to contend with the fact there are 27,000 Radio Relay pagers on the high band, but must also contend with all of the calls going into the terminal from the other three carriers. The witness stated that several minutes of waiting time can be experienced during busy periods. Altogether, the high band computer terminal must process calls for more than 63,000 pagers, of which more than half belong to carriers other than Radio Relay. The maximum capacity of the terminal is 100,000 users, assuming an uninterrupted flow of data. However, the terminal's actual operating capability is quite a bit less than its rated capacity. This is because the terminal must receive and validate input from four carriers at once, but can only transmit pages for one of them at a time. Assertedly, the effect is similar to a funnel where the large end can receive five or six calls at a time, but the narrow end that feeds the transmitters cannot move the calls out as rapidly. The witness explained that during peak hours there can be substantial traffic jams, whereas off peak at nights, or on weekends, there is no problem with such a narrowing. Radio Relay has automatic counters at its dispatch center which keep track of the number of incoming calls on its various lines. Among other things, they give precise reports on how Radio Relay's system usage varies during the day. During three days in July 1981 between 81 and 83% of total calls were received between 8 a.m. and 6 p.m.

Exhibit 7 is a printout from Industrial showing the shared computer activity for the period May 31 to July 1, 1980. It shows that as of July 1, 1980 there were a total of 63,246 paging units operating on the high band for all carriers, of which Radio Relay had 26,392, or 42%. From May 30 to July 1, a total of 1,478,252 pages were transmitted on the high band, of which 592,677, or 40%, were attributable to Radio Relay subscribers. The report also shows that Radio Relay pages represented a total of 57.24% of the airtime actually used by the four carriers.

Assertedly, the fact that customers may not be aware of delays and do not complain does not mean that the delay problem does not exist. It was explained that Radio Relay does not receive many delay complaints because the customer generally is not aware of how long it has been since a particular caller entered a specific page. Moynihan believes that more customers will be made aware of delays as they become progressively longer due to the high band system becoming more fully loaded.

Moynihan stated that except for minor variations in bulk rates for only a few users with more than 50 units, Radio Relay's rates for low band service are essentially identical to rates for its high band service. After the proposed low band expansion, Radio Relay plans no real changes in rates or in the total market area already served on the high band. Assertedly, the company will be doing almost exactly what it has been doing since 1977, except it will be operating on what is essentially a completely vacant frequency instead of one which is approaching saturation. Moynihan projected that five years after the proposed low band expansion, the system would have 18,000 subscribers and would still be nowhere near the point where its channel capacities are pushed. The witness stated that currently only a limited

number of subscribers (1,700) are willing to pay the same rate on the low band as on the high band for a service area only half as large.

Moynihan explained that Radio Relay is the only FCC-licensed low band carrier in the Los Angeles basin. The FCC would not permit construction of another low band system in the same area because it would cause radio interference. Another RTU could use the low band frequency through an intercarrier agreement. The witness contended, however, that Radio Relay would have to control the entire low band system in order to ensure its integrity, in the same manner that Industrial controls the entire high band system which Radio Relay shares.

According to the witness, the matter of a low band intercarrier agreement was discussed with Industrial because it protested Radio Relay's proposed service area expansion. Industrial would require that it be the licensee for any new transmitter sites instead of Radio Relay. Industrial also would require that it provide the control circuits and microwave systems to tie the sites together. Assertedly, maintenance of the new transmitters, which Industrial would expect to be located at Industrial's sites, would have to be performed by Industrial's personnel rather than Radio Relay's personnel. Moynihan contended that Industrial's proposal would require that Radio Relay turn over complete control of the low band system to Industrial as Radio Relay has had to do with the high band system. This is unsatisfactory to Radio Relay. The witness explained that if any technical problems should occur on the low band system, Radio Relay would want to know whose fault they are so it could solve them with its own people. Furthermore,

Radio Relay does not want someone else being the licensee on a frequency which is assigned exclusively by the FCC to Radio Relay. The witness contended that if a low band intercarrier agreement should actually become effective, and then fall apart, there would be utter chaos.

Moynihan explained that most two-way mobile pagers have anywhere from two to eleven channels and that intercarrier agreements work well for multi-channel carriers. Assertedly, it is easy for subscribers of a particular two-way carrier to receive service from other two-way carriers while in their service areas simply by switching channels. On the other hand, one-way paging receivers have only a single frequency. Once a customer travels out of the reliable service area of his home system, he cannot switch to another channel. Reliable service cannot be obtained unless the subscriber has additional pagers for each of the other service areas where coverage is needed. Even then, someone paging such a customer would need to call the page in to each of the various companies since there would be no way to know which pager was going to be the one within signaling range. For these reasons, intercarrier agreements assertedly are practical for one-way paging only in very rare cases, such as the agreement the four high band carriers have in the Los Angeles basin. That agreement works because all four carriers share the same frequency which was set up by the FCC to be shared. The respective high band systems assertedly were designed with that in mind, and that is why the four carriers use the same terminal. On the other hand, the low band frequencies were all assigned to individual carriers on an exclusive basis. This means that each carrier's low band transmitters and pagers operate on different frequencies to prevent radio interference.

Moynihan contends that the circumstance where Industrial is authorized to serve the sought expansion area and Radio Relay is not is one which must change. Assertedly, the public interest requires that the low band frequency not continue to remain relatively unused while the high band fills up, and Radio Relay should not be forced to give control of the low band system to Industrial in order to expand it. The witness stated that if the proposed service area expansion is denied, it would mean that a valuable frequency would continue to go to waste at a time when people are clamoring for more frequencies from the FCC. He said that there also would continue to be a risk that Radio Relay's high band users could lose about half of their service area should Industrial choose to terminate the high band intercarrier agreement.

Witness Mercer testified that traffic on the high band system is pushing toward saturation from an airtime consumption point. He explained that airtime consumption is the rate at which calls can be transmitted over the air. He was of the opinion that there exists an immediate need to extend the low band system for Radio Relay in order to avoid overloading the shared high band computer terminal.

Mercer explained from an engineering standpoint how Radio Relay's present system operates and how the proposed low band expansion would operate. The company provides both fully automatic and operator-assisted access into the low band system via one channel of a two-channel call concentrator located in its office in Montebello. In the fully automatic mode, callers enter calls by dialing a conventional seven-digit telephone number. The fully automatic entry of calls demands that they be entered via a touch-tone telephone. Input circuitry of the concentrator responds to

the ringing, answers the call, and returns a go-ahead beep tone to the caller. Each pager in the system is assigned a five-digit code and, upon cessation of the go-ahead beep, callers are instructed to touch tone the five-digit code assigned to the specific pager which they wish to call. Radio Relay's concentrator input circuitry receives these five digits, analyzes the code to determine whether the call is to high band or to low band, and transfers low band calls into the Acme control terminal.4/ Calls requiring high band service are treated identically up to the point of transfer, whereupon high band calls are routed to the high band terminal, a Motorola Metro 100, which is located at Industrial's premises in Anaheim.

To accommodate subscribers who do not have a touch-tone telephone or who, for other reasons, prefer operator assistance when entering a paging call, Radio Relay's concentrator includes an operator input facility. Subscribers who wish to avail themselves of this facility may do so by calling a conventional telephone number which is answered by Radio Relay's operators on a 24-hour-a-day basis. A subscriber recites the desired pager code to the operator who enters the call manually on a custom-built console. Operator-entered calls are processed through the concentrator to either high band or low band channels in the manner identical to that for fully automatic calls. The Acme terminal, which receives low band calls, is equipped to process pagers having either two-tone Martin-Marietta digital or six-tone coding schemes. Separate call queues are provided for each scheme.

4/ Mercer is the inventor of the Acme terminal. He said it no longer is state of the art equipment, but is adequate for the job for which it is used. The numeric capacity of the Acme terminal is 100,000 addresses.

Calls which are forwarded to the Acme terminal from the concentrator are queued in the appropriate two-tone or six-tone coding schemes. The contents of each queue are converted to the indicated coding format, and the three formats are permitted access to the channel on a one-at-a-time noninterfering basis. Presently, the six-tone format is predominant. Radio Relay expects this predominance will continue and that in the near future only six-tone pagers will actually be in service. The Acme terminal has the capacity to encode 100,000 six-tone pagers. All low band calls generated by the Acme terminal are transmitted by all six existing low band transmitters. The Acme terminal is connected to each of the low band transmitters via a dedicated telephone line. In order to minimize effects of radio frequency overlap and phase delayed distortion, which are problems in multi-transmitter systems, Radio Relay's system transmits each call three times, each transmission being via a different pair of nonoverlapping transmitters, a technique referred to as transmitter sequencing.

Mercer explained that his company proposes to add Quintron transmitters at the new sites. These are similar to transmitters operating on the existing low band system. Additional telephone lines would lead to the new transmitters. Transmitter sequencing would be reorganized slightly to accommodate the new transmitters into the three-step scan which presently exists. Apart from the sequencing aspects, the central control facilities and the Acme terminal now in place would be sufficient to accommodate the new facilities.

According to the witness, the effect of putting the new transmitter sites on the air would be to increase the total range of the system and to improve the capability of penetrating concrete and steel buildings within the existing range of the system. He admitted that low band paging introduces problems of building penetration which are more severe than would be the case for an identically configured high band or UHF frequency. He said the problem can be solved by requiring more transmitting sites on the low band system than would be required to achieve a given coverage pattern on the high band system. He said that major low band systems of Radio Relay and other carriers exist in almost every area of the United States. Radio Relay operates low band systems which assertedly provide satisfactory service to approximately 17,000 subscribers in New York, 10,000 subscribers in Chicago, and more than 5,000 subscribers per system in numerous other cities. The witness said the FCC has allocated low band channels for radio paging and recently released a number of new low band channels.

Witness Rainbeau testified that the total capital Radio Relay would have to provide to equip and set up each transmitter site would be $9,373. Operating expenses would be $490 per month. He introduced Exhibit 25 to show that his company has available liquid assets in excess of $800,000. Exhibit 26 shows that for 11 months ended May 31, 1980 Radio Relay had pretax earnings of $778,000 for an average of $70,727 per month. Exhibits 28 and 29 were introduced to show that the low band system alone would generate pretax income of at least $101,000. If Radio Relay's agent shifts sales effort over to low band, it is estimated that pretax income would become $174,000.

It is Radio Relay's contention that there must be more to "service" than mere radio waves, or there would be no need for this Commission to concern itself with the subject nor for the filing of lengthy tariffs. It states that since RTUs are supposedly providing a means of communicating messages, "service" presumably includes all aspects of fulfilling that function. It states that the ease with which a customer may obtain a receiver, the ease and the speed with which he may have that receiver repaired or replaced when needed, and the ease with which people trying to reach the customers can place their calls must all be considered part and parcel of "service".

In support of its position that it provides superior service, Radio Relay called witnesses Uzzel and Bailey, who operate telephone answering services. They also function as Commission agents in securing customers for Radio Relay. Between them, these two witnesses represent more than 300 of Radio Relay's customers. Both testified that Radio Relay provides service which is superior to other paging services offered in the area, including two other RTUs and a wireline utility.

Witness Uzzel is located in Upland, well within the proposed expansion area. She testified that:

1. Radio Relay's system has been so much more efficient that she has saved hiring another employee just to process pages.
2. Only Radio Relay provides her customers with prompt repair of pagers and replacement services.
3. Before Radio Relay started serving her area, the paging service offered by other carriers was inadequate.

4. She has no reason to believe the situation would be any better if Radio Relay no longer was able to offer service in the area.

Uzzel said it is a nice feeling not to be constantly in trouble about pagers. She testified that Industrial's pagers do not compare with Radio Relay's because there are too many busy signals on the computers where the pager will just sit there and not ring. She said it wastes a lot of time when she is very busy and has to sit and dial and try to get into the computer to put a page in, or she has to sit and wait for the company to come back on the telephone. Assertedly, this can cause two or three calls to be missed which causes angry customers to yell at the girls. Uzzel testified that on one occasion Industrial told her it would be two weeks before it could provide pagers for her 28 doctor customers whose existing pagers were no longer operating. Radio Relay points out that Industrial's witness Harris testified that in the ordinary course of business Industrial does not pick up or deliver pagers when needed, but requires a customer to use United Parcel Service.

Witness Bailey is located in Radio Relay's presently certificated area. She stated that the only paging company with which she has worked that provides service she considers adequate is Radio Relay. For this reason she recommends Radio Relay exclusively. She stated, however, that the range offered in Radio Relay's own certificated area, as presently served on the low band, is not wide enough for the majority of her customers. Bailey testified that only Radio Relay provides prompt replacement when pagers stop working, and that Radio Relay is the only carrier that has given her a stock of spare pagers so that she can replace them herself, if needed. She stated that at another of her exchanges, defective pagers sometimes may lay for a week waiting

for someone to come and replace them. This means that during the time customers are without pagers they cannot be reached. Bailey testified that it is the service offered which is important, because if good service cannot be obtained the customers get mad, feel it is the fault of the answering service, and get the girls upset.

Presentation of Industrial

Industrial presented evidence through Homer Harris, its president; Jack Hofeld, president of Intrastate Radio Telephone, Inc. of Los Angeles; Arthur Peters, consulting engineer; and Ronald Young, Industrial's chief engineer. According to the evidence, Industrial provides RTU service in portions of Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties on the high band system to over 34,000 one-way tone-only paging units. Together, Industrial and Radio Relay blanket the sought expanded service area with tone-only paging service on the high band system. Industrial also provides two-way mobiletelephone and tone-and-voice paging service in its authorized service area. The proposed expanded service area is totally encompassed by the authorized service area of Industrial. Radio Relay, by virtue of the 1977 intercarrier agreement, markets and pages its high band paging service throughout Industrial's authorized service area.

Substantial segments of the expansion area also are served with complete RTU service (two-way mobile tone-and-voice paging and tone-only paging) within the authorized service areas or by intercarrier agreements, by six other RTUs, namely, Intrastate of Los Angeles, Intrastate of San Bernardino, Radio Dispatch, Mobilfone, American Mobile, and Orange County Radiotelephone.

It is Industrial's position that:

1. Radio Relay has failed to establish any public need or demand for its proposed low band service area expansion.
2. It has failed to show that tone-only paging service currently provided in the proposed service area expansion is inadequate or of poor quality.
3. It has failed to demonstrate the technical feasibility of the proposed expansion of its low band system or that the service would be adequate and of good quality.
4. There is no merit to Radio Relay's contentions that the high band system is approaching full loading or saturation.
5. There is no merit to Radio Relay's contention that it is likely Industrial will terminate the existing high band intercarrier agreement with Radio Relay for use of the high band system.

Industrial contends that Radio Relay has vast expansion plans which constitute an effort to grab additional territory without regard to needs of existing or potential paging customers. It also contends that Radio Relay plans to establish a monopoly over the low band in a service area extending from Ventura to the Mexican border accompanied by exclusion of other carriers from that system. In this connection, Industrial states that Radio Relay has sought FCC authority to construct four new low band transmitters in San Diego County. Assertedly, Radio Relay should have been required to make a complete presentation and showing for its total territorial expansion. Industrial contends that the fragmented approach represented by this application is violative of this Commission's intent and requirements set forth in D.88513 (1978)

83 CPUC 461. Industrial points out that in that decision the Commission formulated Rule 18(o) of its Rules of Practice and Procedure and determined that intercarrier agreements for the exchange of two-way and one-way paging are of benefit to the public and the industry, based upon PU Code Sections 766 and 767. Industrial contends that Radio Relay disregarded the Commission's policy by not endeavoring to reach intercarrier agreements whereby low band traffic could be suitably interchanged with Industrial in the Los Angeles basin and with Gencom in San Diego County. Assertedly, Radio Relay's proposal would completely subvert and destroy Commission policy and, if allowed to prevail, would result in resumption of the internecine warfare that existed among the RTUs prior to the advent of D.88513 and Rule 18(o).

Industrial strongly recommends an intercarrier agreement on the low band. It contends that intercarrier agreements are feasible and reasonable for paging service, regardless of the frequency used. Industrial states it endeavored, without success, to reach an intercarrier agreement with Radio Relay on the low band system, similar in principle to its high band intercarrier agreement (Exhibit 3). Assertedly, the only condition imposed would be that any transmitter on the low band within the authorized service area of Industrial be licensed to Industrial. Industrial contends that an intercarrier agreement on the low band system would be quite beneficial to Radio Relay, Industrial, and the public, as Radio Relay's facilities could be combined with the Metro 100 terminal, existing microwave circuits, and existing transmitter sites, without any substantial additional plant investment by Radio Relay. Industrial contends that its Metro 100 terminal is fully capable of handling a low band system.

Industrial presented evidence for the purpose of showing that the propagation characteristics of the low band frequency, due to differences in wave length, are substantially inferior in penetration to the high band frequencies such as VHF and UHF. Industrial contends that transmissions on low band systems do not adequately penetrate concrete reinforced or other metal buildings and automobiles. It was pointed out that Radio Relay uses six low band transmitters to perform service within its existing certificated area which assertedly is less mountainous than the sought expansion area. Industrial's engineering witnesses testified that a minimum of 10 to 12 transmitters would be required for the proposed low band system in order to provide a reliable tone-only paging signal of good quality in the sought expanded service area.

The Acme terminal proposed to be used in the expansion area assertedly is not state of the art equipment and is no longer manufactured. Industrial points out that Radio Relay proposes to control the additional low band transmitters through telephone lines instead of microwave circuits as Industrial does on the high band. It contends that this would constitute poor engineering, particularly if Radio Relay continues to employ sequential broadcasting on the expanded low band system instead of simulcasting as Industrial does on the high band system. The sequential broadcasting proposed by Radio Relay for its expanded low band system was assailed on the grounds it would reduce the capacity of the system and would result in low band paging customers receiving false paging signals.

Industrial produced evidence to show that there are no unreasonable paging delays on the high band paging system in the Los Angeles basin. It is alleged that any delays experienced by Radio Relay's paging units on the high band system are due to improper configuration and operation of Radio Relay's own equipment, i.e., its concentrator and multiplexer. Assertedly, these problems have not been corrected, with the result that delays experienced by Radio Relay are an ongoing problem. Industrial presented the results of a study to show that the paging delays alleged by Radio Relay were not experienced to the same degree by the other three RTUs sharing the high band in the Los Angeles basin. According to the study, a page on the high band system took 52.35 seconds for Radio Relay; 40.91 seconds for Industrial; 28.35 seconds for RadioCall (R. L. Mohr); and 28.12 seconds for Radio Dispatch. The high band paging system, which serves a total of approximately 64,000 paging units, assertedly provides adequate service of good quality, except that occasioned by the malfunctioning of Radio Relay's own equipment.

Industrial's Metro 100 paging terminal is fully redundant, with two complete systems and backup power. It likewise has storage for 200,000 paging units, regardless of whether they are single or dual function. The Metro 100 terminal also can readily handle two channels, including the low band system, and can readily be expanded. Industrial contends that Radio Relay's allegation of congestion or saturation of the high band system, as respects airtime, lacks any real substance. Assertedly, the high band paging system has a capacity (airtimewise) of approximately 128,000 paging units with a two-minute average holding time, and a capacity of approximately 145,000 with an average holding time of five minutes. Industrial

contends that these holding times are reasonable, particularly as the computer is programmed for priority paging calls. According to Industrial's evidence, the high band system will not be fully loaded or saturated for at least eight years.

Presentation of General

General presented no direct evidence. General protests the application for essentially the same reasons as those advanced by Industrial.

Beyond its protest, General would like to see Radio Relay instructed that its intercarrier agreements may only be used as a means to provide customers residing within its authorized service area with access to paging service when traveling beyond those boundaries. General cited testimony of witness Moynihan where he stated that Radio Relay would provide service to a customer living within the proposed expansion area even though that customer had no need for service within Radio Relay's presently certificated area. General also cited testimony of witness Uzzel whose telephone answering service is located in Upland (San Bernardino County), outside of Radio Relay's certificated area. For two years Uzzel has been referring customers to Radio Relay and has been receiving commissions for each new customer she brings to it. General contends that any marketing or promotion of Radio Relay's services outside the boundaries of its service area contours should be prohibited unless certification is first obtained to serve such areas.

Presentation of Gencom

Gencom (an RTU also known as Imperial Communications Corporation) entered an appearance as an interested party. It presented evidence through William Zondler, its manager. Gencom is authorized to provide tone-and-voice paging as well as tone-only paging in San Diego County. It competes with The Pacific Telephone and Telegraph Company's mobiletelephone service in San Diego County. Gencom does not compete with Radio Relay as applicant's certificate now reads, nor as it would read under the authority sought.

Gencom opposes the application for essentially the same reasons as those advanced by Industrial in its protest. In addition, Gencom states it also needs additional frequency resources. It is running short of available airtime (experiences channel congestion) on frequencies now licensed to it. Accordingly, Gencom also has filed with the FCC for authority to establish a low band system in San Diego County. Gencom contends that authorization as requested in Radio Relay's application for expanded service in the Los Angeles basin would extend low band interference contours as far south as Oceanside in northern San Diego County and cause radio signal interference with its own proposed low band system in that area. Assertedly, this would preclude Gencom from offering service on its proposed low band system in part of its certificated area in San Diego County.

Discussion

The record does not show that the high band soon will be reaching full loading (saturation) in the Los Angeles basin. The aggravated delays experienced by Radio Relay cannot all be attributable to peak period loading conditions on the high band. We agree with Industrial that Radio Relay's delays must be due in some degree to problems with its own equipment. However, the record shows that

there are some loading problems on the high band now during peak periods, and that these problems may become serious in about eight years.

Industrial controls the high band frequency in the Los Angeles basin through intercarrier agreements with Radio Relay and two other RTUs. Radio Relay is licensed exclusively by the FCC to transmit paging on the low band. The low band is vacant in Radio Relay's sought expansion area. Radio Relay has not been able to attract more than 1,700 subscribers to its present low band service in contrast to 27,000 subscribers to its high band service. The record shows that the primary reason is that subscribers to Radio Relay's high band service can benefit from about twice the area coverage because of the intercarrier operating agreement with Industrial. Paging frequencies in the Los Angeles basin are a scarce resource. We agree with Radio Relay that it is not in the public interest to have the low band remain substantially vacant while the high band fills up.

This brings us to the question of whether it is in the best interest of the public to authorize Radio Relay's request for expansion of its low band service area, as sought, or to issue a mandatory low band intercarrier agreement or other suitable instrument under PU Code Sections 766 and 767. We continue to prefer intercarrier agreements to service area extensions as a general rule. There can be situations, however, where a service area extension is preferable to an intercarrier agreement. Radio Relay believes it should continue to control the low band frequency exclusively assigned to it by the FCC in the Los Angeles basin.

Radio Relay is unwilling to give up to Industrial control of the low band under an intercarrier agreement as proposed by Industrial. Under such an arrangement, Industrial apparently would end up controlling both the high band and the low band.

We are not impressed with the attacks made against the technical and operating capabilities of the low band system. Low band paging has been licensed by the FCC for use by Radio Relay here and in other parts of the United States. Several low band systems are now operated by Radio Relay. It has been licensed by the FCC to transmit low band paging from two additional sites in the Los Angeles basin. Radio Relay has requested licensing for two more sites and certain changes in the first two sites. If low band service is expanded and any areas should remain which do not have adequate signal strength, Radio Relay can make changes in its equipment and/or seek licenses from the FCC and authority from this Commission to construct and operate still more transmitters.

The overall cost of the proposed low band system, as outlined by Radio Relay, would not be great. Radio Relay can well afford the proposed expansion, and it has the engineering and operating experience and capability to make it work. The additional competition between the low band and high band systems, as the result of the service area expansion, would be in the public interest. Radio Relay's proposal is viable and the sought authority should be granted.

We do not agree with General's contention that Radio Relay should not accept high band paging business from customers domiciled outside its certificated service area (inside the area where it has an intercarrier agreement to share high band facilities with Industrial). We do not find that this violates any statute or order or rule of this Commission. Service area boundaries for RTUs are established primarily to prevent them from broadcasting to points beyond their own service areas and to prevent them from broadcasting from points outside of their own service areas. A paging subscriber needs paging service for communications primarily when he is away from the wireline telephone connected to his home or office. He may be domiciled in Industrial's service area and spend part or all of his business day in that company's service area, in Radio Relay's service area, or elsewhere. The transient activities of paging subscribers alone would make General's proposal highly impractical and most difficult to enforce. Furthermore, it would lessen competition which would not be in the public interest. It is not important where a paging subscriber is domiciled. We see no reason to limit Radio Relay's service only to subscribers domiciled within its own certificated service area.

Findings of Fact

1. Radio Relay is an RTU which has been providing one-way tone-only paging in the Los Angeles basin (1) since 1961 by using its own authorized high band and low band systems, and (2) since 1977 through an intercarrier operating agreement for sharing high band facilities operated by Industrial throughout that company's certificated area.

2. Radio Relay's existing authorized service area is the same for both the low band and the high band frequencies.

3. Radio Relay provides tone-only paging service to approximately 1,700 paging units within its certificated area through six transmitters on the low band system.

4. Radio Relay provides tone-only paging service to approximately 27,000 paging units through approximately eight transmitters on the high band system. This includes service within its certificated area as well as under the intercarrier operating agreement with Industrial.

5. The high band system is shared by four RTUs in the Los Angeles basin, namely, Radio Relay, Industrial, RadioCall (R. L. Mohr), and Radio Dispatch.

6. Radio Relay and Industrial blanket the sought expansion area with tone-only paging service on the high band frequency.

7. Radio Relay seeks authority from this Commission to more or less conform its own service area to Industrial's in which Radio Relay's customers already are being served through intercarrier operating agreement on the high band by offering service in a similar area on the low band.

8. Radio Relay seeks authority to use the low band in the sought expansion area as a means of guaranteeing service to present and future customers should use of the high band reach capacity, or should its operating agreement with Industrial be terminated because of approaching high band saturation, or for any other reason.

9. The low band channel has been assigned exclusively to Radio Relay in the Los Angeles basin by the FCC.

10. The low band channel is vacant in the expansion area sought to be served by Radio Relay.

11. Industrial would enter into an intercarrier operating agreement with Radio Relay on the low band, subject to the condition that any transmitter on the low band within the authorized service area of Industrial be licensed to Industrial.

12. An intercarrier operating agreement for exchange of traffic on the low band, as proposed by Industrial, would require Radio Relay to give up exclusive control of the low band channel and the management and maintenance of its low band facilities.

13. Radio Relay does not desire to enter into a low band intercarrier agreement with Industrial.

14. On November 18, 1980 the FCC authorized Radio Relay to operate low band transmitters at Mt. Lukens and at Santiago Peak for broadcast into the expansion area, but without a sought power waiver.

15. On November 18, 1980 the FCC informed Radio Relay, among other things, that if an applicant or licensee desires to provide service beyond the area of a particular antenna site, it should accomplish this by means of additional transmitters or by changing antenna sites.

16. Since November 18, 1980, Radio Relay has filed applications with the FCC for low band transmitters at Magic Mountain (in substitution for Mt. Lukens), Kellogg Hill near Pomona, and atop a high building in San Bernardino. Authority also has been sought from the FCC to redirectionalize the antenna for the previously authorized transmitter at Santiago Peak.

17. Exhibit 25 shows that Radio Relay has liquid assets in excess of $800,000.

18. Exhibit 26 shows that for 11 months ended May 30, 1980 Radio Relay had pretax earnings of $778,000, or an average of $70,727 per month.

19. Transmitter sites would cost Radio Relay about $9,373 each. Operating expenses per month would be about $490 each.

20. Radio Relay has the financial resources to install and operate as many transmitter sites as may be necessary to provide adequate and dependable service from, to, and within the area sought to be served.

21. Exhibits 28 and 29 are pro forma operating statements for the first year of operation which show that the low band system alone would generate pretax income of $101,000, even if Radio Relay's agent should choose not to use the low band at all, and pretax income of $174,000 if the agent should shift sales effort over to the low band.

22. Low band systems are used by Radio Relay for one-way paging in the Los Angeles basin and in various other places in the United States.

23. The proposed operation will be technically and economically feasible, adequate, and of good quality.

24. Should Radio Relay find that there are any geographic areas that regularly do not receive adequate signal strength on the low band in the proposed expansion area, it can make changes in its equipment and/or seek authority from the FCC and this Commission to construct and operate more transmitters.

25. The record does not show that the 43 dbu contour is an unsatisfactory method for predicting an area of reliable service for one-way paging on the low band in the sought expansion area.

26. Gencom is concerned, among other things, that Radio Relay's expansion of its low band system in the Los Angeles basin may create radio signal interference with Gencom's proposed low band system in the northern portion of its certificated area in San Diego County.

27. The FCC is the agency that determines allocation and assignment of frequency resources and whether or not there will be electronic interference.

28. There are nine RTUs and two wireline telephone companies providing paging services in various portions of the Los Angeles basin. Many of the services and rates are the same or similar; however, there are significant differences between some of the services and rates.

29. Exhibits 13, 14, 42, 44, 46, 48, 50, 52, and 60 show that Radio Relay's present and proposed rates are comparable to rates charged by competing carriers.

30. Radio Relay has been deriving a reasonable return from its present rates.

31. Radio Relay's proposed rates are justified.

32. There is public demand for Radio Relay's proposed service.

33. Two operators of telephone answering services representing about 300 high band customers prefer to use Radio Relay. They contend that Industrial does not provide satisfactory service and patronize it reluctantly, if at all. The two operators are commission agents for Radio Relay.

34. Radio Relay experiences delays on the high band of from 2 to 10 minutes, and often experiences delays from 7 to 8 minutes.

35. Some, but not all, of the delays experienced by Radio Relay on the high band are due to problems with its own equipment and operations.

36. The high band has not reached saturation from an airtime consumption point in the expansion area sought to be served.

37. Radio Relay alone adds about 285 new paging units to the high band each month, but virtually none to the low band.

38. It is reasonable to conclude from this record that in the foreseeable future loading problems resulting in unreasonable delays in transmission may be experienced on the high band in the proposed expansion area because of increasing numbers of pagers in use.

39. Authorization of Radio Relay's proposed low band expansion would help reduce congestion on the high band.

40. Radio Relay's intercarrier operating agreement with Industrial for use of its high band facilities is terminable on 18 months' notice.

41. Radio Relay needs a larger low band service area in order to properly market paging on that frequency in competition with paging now available on the high band frequency with about twice the area coverage.

42. Radio Relay's service in the sought expansion area should not be restricted solely to its high band intercarrier agreement with Industrial.

43. Radio Relay possesses the ability, experience, and financial resources to perform the proposed low band service.

44. Radio Relay is willing to assume the economic risks inherent in the expansion of its low band system, as proposed.

45. Radio Relay's proposed expanded low band service would take some business from the high band services of Radio Relay and Industrial.

46. The record does not show that Radio Relay's proposed low band service expansion would impair the ability of Industrial or any other carrier to perform service.

47. Competition between Radio Relay on the low band and other carriers on the high band, to the extent it may exist, will have a beneficial effect for the public interest, will promote good service, and will encourage innovative rate schedules and practices.

48. Public convenience and necessity require that Radio Relay be authorized to perform one-way tone-only paging service on the low band from, to, and within the additional area sought to be served.

49. It can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

Conclusion of Law

Application 59477 should be granted to the extent set forth in the order which follows.

Only the amount paid to the State for operative rights may be used in rate fixing. The State may grant any number of rights and may cancel or modify the monopoly feature of these rights at any time.

O R D E R

IT IS ORDERED that:

1. A certificate of public convenience and necessity is granted to Radio Relay Corp.-California (Radio Relay) to expand its low band (35.22 MHz) one-way tone-only paging system by constructing, operating, and maintaining proposed base station facilities at Magic Mountain and Kellogg Hill (above Pomona) in Los Angeles County, in the City of San Bernardino, and at Santiago Peak in Riverside County.

2. After the effective date of this order, Radio Relay shall file revised tariffs and service area maps in compliance with General Order Series 96, and apply its present tariffs to the areas certificated by this order. The effective date of these tariffs shall be 5 days after filing.

3. Radio Relay shall file, after the effective date of this order, as part of its tariff, an engineered service area map drawn in conformity with the provisions of Federal Communications Commission Rule 21.504.

4. Radio Relay shall notify this Commission in writing of the date service is first rendered to the public under the tariffs authorized within 30 days thereafter.

5. The certificate granted shall terminate if not exercised within one year after the effective date of this order, or such further period of time as may be authorized.

This order becomes effective 30 days from today.

Dated AUG 4 1981, at San Francisco, California.

President

Commissioners