
How Much is Too Much?

*The pressure is on, and paramedics
are feeling the squeeze.*

"Accomplish more with less." This modern philosophy (or need) can quickly defeat itself. The desire or need of management to create evermore-efficient EMS operations can destroy *the* most important part of the system — the EMTs and paramedics in the street.

Jack Stout addresses the question of how much can EMTs and paramedics take — how much efficiency is too much. Because of the significance of this discussion to providers and managers alike, this feature replaces Stout's usual Interface column.

Stout has been at the forefront of innovation in the design and implementation of EMS systems for the past dozen years, and with his company, The Fourth Party, has been involved in the establishment of several sophisticated ambulance systems.

All of us in the ambulance industry learn to live with the knowledge that what sometimes we do has serious consequences. The price tag that goes with the opportunity to do some real good, now and then, is the risk — even certainty — that we will occasionally miss something that we should have seen, make an error in judgment, or just plain screw up. The best among us analyze every performance breakdown and try to figure out how to make sure it doesn't happen again. The rest make excuses for what happened, usually blaming someone else or "circumstances."

Those of you who work the streets enjoy occasionally the benefits of direct results. You do something right, and you know you are the reason. Nothing tops that feeling. But administrators, managers, even consultants share the same world, though indirectly. Everything seems

to happen by delayed remote control. You almost never get what you want, but you are responsible for what you get anyway. You work through the actions of people who rarely see things the way you do, or perform the way you would, or at least think you would. The good things you accomplish are often almost invisible to others, and, being a manager, you never accomplish anything by yourself anyway.

In management, results are so obscured that truly incompetent people may find a haven. Even if *you* are not incompetent, at least you share the job description of many who are, and to some extent their collective reputation. Bad judgment in the street can do real damage. Bad judgment by a manager or consultant can do even more damage, but

by Jack Stout

the cause and effect connection may be more obscure.

When Ann Arbor (Mich.) medic Robert Schultz questioned the impact of aggressive system status management techniques upon the health, safety and clinical performance of field personnel, I was forced to question my own work — a hard thing to do. Schultz's letter in the May 1983 issue of *jems* suggested that my approach to system status management "totally disregards an EMT's biological needs for adequate nutrition and rest in the course of an already-grueling 24-hour shift." Schultz had said it in writing; friends of mine who work the streets agreed. This article and the information it contains hopefully will begin to correct that flaw in my previous work. However, as always, I have some good news and some bad news. I only hope that field personnel whose lives are affected by my work will consider fairly both aspects of this report.

Where Does the Pressure Come From?

When I first coined the phrase "system status management," I was mainly looking for a new term to describe what any ambulance organization does in the way of vehicle deployment and redeployment as conditions (that is, call levels,

coverage levels, shift changes, etc.) change during the 24-hour day. I knew no one could avoid having a system status plan, even if the plan was to leave everything as it is, no matter what. I didn't invent the concept, only the term. For years I had seen patient-oriented companies, operating on limited financial and staff resources, going to great lengths to squeeze out every possible drop of response time performance.

System status management came into its own during a manager's nightmare: the operating budget was fixed, a new union labor contract raised the labor costs by hundreds of thousands of dollars, millions of dollars in equipment expenditures were essential, and response times had to be maintained. Put another way, fewer people making more money would have to run the same call volumes with the same response time results that were previously being achieved by a much larger labor force. The system, and the people in it, would have to work harder and smarter.

The Hard Questions

Over the years since that early crude beginning, more elaborate and more sophisticated system status management techniques have evolved. But, like any change, progress has not been without its price tag. The question comes up: How much is too much? More specifically, *At what point does the quest for efficiency place an unreasonable burden on the labor force that is expected to achieve it?* Is the extra efficiency used to generate better patient care or excessive profits? Just how much work is it fair to expect from a field paramedic? And, perhaps most useful of all, is there a way to measure how hard a system is actually working so that "overwork" can be objectively defined and avoided?

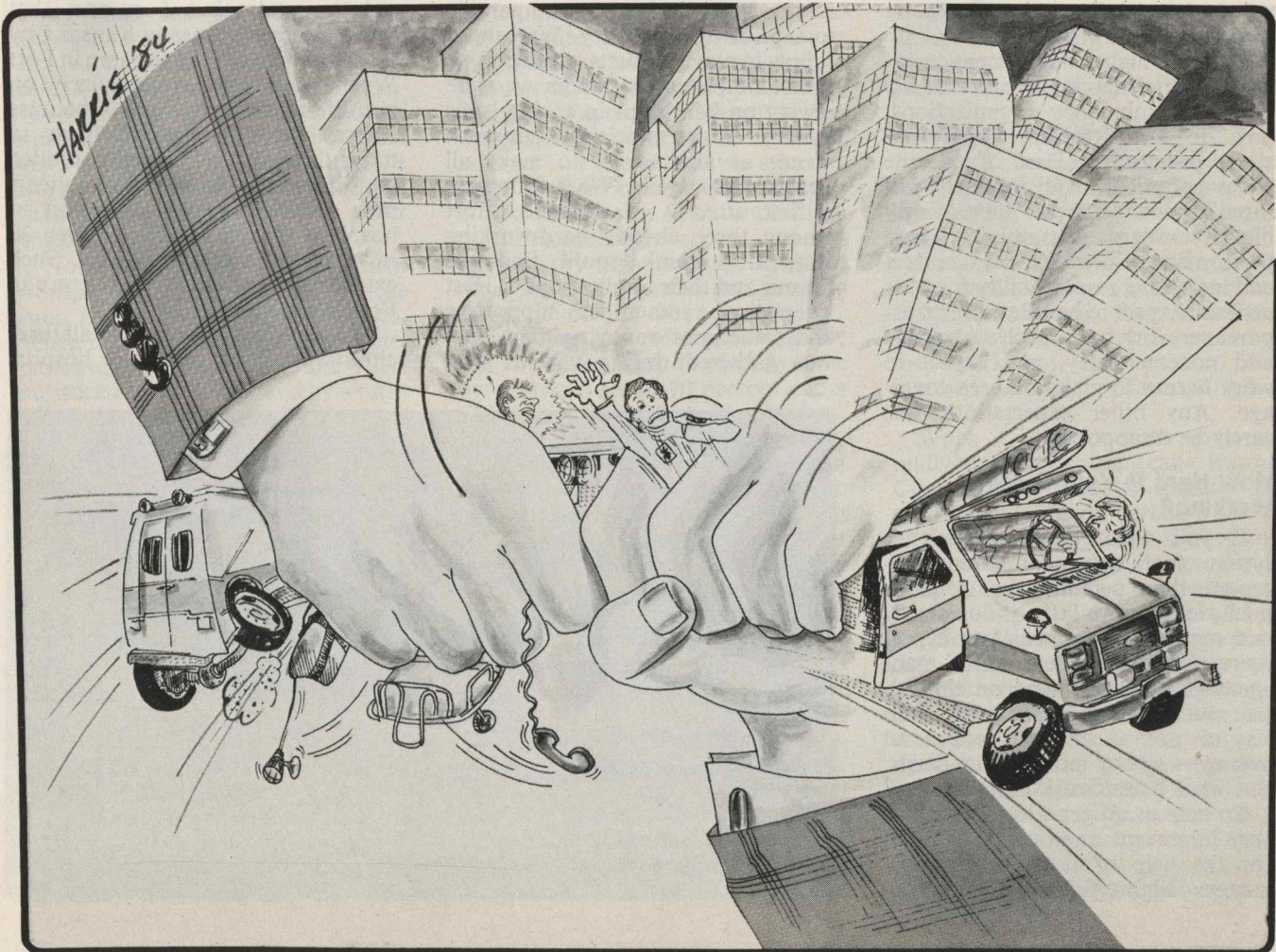
I know that more intelligent coverage and deployment/redeployment techniques can benefit the patient. But I also agree that these more sophisticated techniques could as easily be utilized for profit-making purposes, to justify reduced rate or

subsidy levels at the expense of the paramedic, or to finance, in effect, top-heavy administration on the backs of the labor force. System status management is a tool. Like any other tool, it can be used for good or bad purposes, and it can be used with skill or incompetence. System status management is, by itself, neither good nor bad, it's a tool. That's all.

The Pressure Is On, Everywhere

Doing any job really well usually requires more effort than doing the same job poorly. Excellence and hard work usually go together. There is a lot of truth in the old saying, "If it was easy, everyone could do it."

In the ambulance industry, the pressure is on, and this is just the beginning. Two forces have joined to put on the squeeze. First, poor clinical performance and sloppy response times are getting harder to sell every day. Cities and counties are just beginning to figure things out, but the trend is clear: brighter people



working harder will succeed; the rest will find their way to other industries where less is expected of them.

The second force is the demand for efficiency. Any fool with enough money can produce performance. But the financial chickens are coming home to roost. The easy money is gone and it won't be back until: the national debt is brought under control; America's savings rate is approximately quadrupled; tax reform stops rewarding paper entrepreneurialism and starts rewarding real productivity; we find a way to pay for billions of dollars in needed repairs to our older cities' water and sewer systems; we find a way to pay for bridge and highway repairs that the five-cent gas tax can barely dent; the American educational system is either replaced or overhauled beyond recognition; America's whole approach to financing health care finds the light of day; and until a dozen other equally imbedded problems can be solved. This isn't just our industry, it's all over. The next 50 years will surely build our character, but make no mistake: *For most of us, just staying even will require more work and more results.*

But if higher performance at greater efficiency is the order of the day for ambulance organizations, how do these realities impact the street paramedic? First of all, the street paramedic will definitely feel the impact. Expect increasingly higher standards of training, clinical performance, professional conduct and increasing responsibility for your actions. Expect to handle more transports per work hour, both emergency and nonemergency, and expect to work harder to maintain area coverage. Any other expectations will surely be disappointed.

How Hard Is Your System Working?

If you work in an ambulance system that demands extreme response time performance at paramedic levels, with little or no subsidy and regulated rates, you can expect more elaborate system status management practices. And on the job you can expect to work more, sleep less or not at all and receive an average wage by industry standards. But what does "work more" mean?

To help us all get a handle on this very important question, I've asked for the help of three high-performance, high-efficiency paramedic

systems: the Kansas City operations of Medevac Mid-America; the Fort Wayne/Allen County operations of Fort Wayne EMS and the Tulsa operations of Metro Ambulance. The people who work in these systems, both management and labor, function under some of the most demanding performance expectations in the entire industry. But the service areas are different, the companies are different and the histories are different. All three systems use advanced forms of system status management, and so a comparison of system effort might enlighten us all. I know it surely enlightened me.

Before I proceed, let me acknowledge that it is both impossible quantitatively to measure true effort, but it is necessary that we try. Most working men and women believe they work hard. Most probably do. But in order to distinguish between people who are working hard versus those who are working too hard, somehow we have got to measure effort.

Clinically sophisticated ambulance service is not in any way comparable to a piecework industry. We cannot simply count products produced or tasks completed as though we were sewing on belt loops in a blue jeans factory. At the same time, our work is not so abstract as to make all analysis impossible. What follows is a first attempt to measure effort among three already hard-working systems. I think you'll find the figures and their implications at least interesting, sometimes supportive and sometimes annoying. The data was gathered during various time

periods, using a variety of collection techniques. Current figures may differ somewhat, but sufficient quantities of data were employed in these analyses that the general conclusions reached are probably quite reliable.

Why Kansas City Works Harder

Table 1 compares the three different systems on six important variables. All three systems are essentially urban. Fort Wayne also provides paramedic services throughout a large surrounding rural area of the county. In many ways, the Tulsa and Fort Wayne operations are quite similar in call volumes and weekly production of unit hours to provide coverage. Kansas City's call volumes and unit hours are roughly double those of Tulsa and Fort Wayne.

But, while larger systems do enjoy greater economies of scale, Kansas City presents some serious production problems all its own. Notice on Table 1 that the average crew time per run is 43 minutes in Kansas City, compared with only 28 minutes in Fort Wayne and Tulsa. Why? It's only a guess, but I suspect that patient delivery times in Kansas City are much longer than they are in Fort Wayne and Tulsa, particularly on non-life-threatening calls, because Kansas City is large, difficult to move through, and virtually studded with hospitals. Kansas City patients may routinely request transport to hospitals that lie 10, 20, or even 30 miles across a congested city. Such extended transport times are rare in Fort Wayne and Tulsa.

While ambulance crews in all three cities work hard to reduce hospital

Table 1: Averages Per Crew Hour* on Duty**

	Kansas City	Fort Wayne	Tulsa
Runs per hour on duty	.37/hr	.45/hr	.50/hr
Crew time per run	43 min	28 min	28 min
Patient transports per hour on duty	.26/hr	.31/hr	.35/hr
Crew time per call involving patient transport	49 min	33 min	33 min
Crew time per post/post move	16 min	9.7 min	11.4 min
Percent life-threatening response under eight minutes	91 %	96 %	81 %

*Same as "unit hour"

**Including transports, no-hauls, and turnarounds

and nursing home pick-up and drop times to a minimum, the Kansas City system has, for whatever reason, made little progress in gaining formal cooperation from hospitals and nursing homes to establish more efficient procedures for transfer of patients. In contrast, Tulsa's hospitals worked with Emergency Medical Services Authority (EMSA) to help tune the patient exchange process to achieve maximum efficiency, and Metro in Tulsa has provided each hospital with additional stretchers and other ambulance equipment to minimize both patient inconvenience and crew downtime waiting for gear. Fort Wayne is somewhere in between.

Notice also on Table 1 that a post-to-post move in Kansas City takes an average of 16 minutes, including moves aborted by an actual dispatch. Post-to-post moves in Fort Wayne and Tulsa are considerably faster, and are much less frequently aborted in progress. Table 1 doesn't show it, but post-to-post moves in Kansas City are aborted midway by an actual dispatch nearly 57 percent of the time. Thus, not only does Kansas City use far more post-to-post moves than do the other systems, as we shall discuss later, but the moves themselves take longer, mostly because posts are farther apart, and because getting around in Kansas City's traffic system is much more difficult than getting around in most other cities of that size.

Now take a look at the patient transports per hour on duty and the runs per hour on duty categories. When it comes to patient transports, paramedics in Fort Wayne and Tulsa outwork Kansas City crews by a ratio of nearly three to two. That is, for every three patients transported by Fort Wayne and Tulsa medics, a Kansas City crew transports only two patients. A similar ratio holds true for total runs. Fort Wayne and Tulsa medics average about one call for every two hours on duty, while the Kansas City medics average just over one call per three hours on duty. On the surface, this might make it look like Kansas City medics are on vacation compared to those in Fort Wayne and Tulsa, but that conclusion would be dead wrong, as I will explain shortly.

Understanding the last line of numbers on Table 1, the percent of life-threatening response under eight minutes, is essential to fair

comparison. Both Kansas City and Fort Wayne operate under the same response time standards. That is, produce a response time under eight minutes on 90 percent or more of all life-threatening emergencies or you're out of business. (Fort Wayne's 96 percent relates only to the metropolitan area.)

Tulsa, on the other hand, produces *average* response times almost identical to those of Kansas City and Fort Wayne, but Tulsa's now obsolete ambulance ordinance has not been updated to account for recent research findings relating patient outcome to response time

But just as Fort Wayne's response time performance requirements make life harder on medics and managers in Fort Wayne, as compared with the workload in Tulsa, so too do the other special difficulties inherent in serving Kansas City make life still tougher there for medics and managers. Kansas City may just be one of America's most difficult-to-serve cities. If you can do the job in Kansas City, as medic or manager, chances are most other places will seem like a vacation, as you shall soon see. Keeping these important differences in mind, let's look at some facts of paramedic life that are

Table 2: How Crew Time is Spent During Average On-Duty Hour

	Kansas City	Fort Wayne	Tulsa
Running Calls	16 min/ 27%	13 min/ 22%	15 min/ 25%
Post/Post Moves	14 min/ 23%	4 min/ 7%	1 min/ 2%
Misc. Activities	12 min/ 20%	12 min/ 20%	12 min/ 20%
At Post	18 min/ 30%	31 min/ 51%	32 min/ 53%
Totals	60 min/100%	60 min/100%	60 min/100%

performance. Tulsa's ordinance does not require the same 90 percent minimum performance under eight minutes as do those in Kansas City and Fort Wayne. For this reason, the Tulsa system doesn't have to "work as hard" as the other two systems, since less performance is expected.

Just in case you don't understand the difference between the comparative luxury of an average response time standard versus the grueling demands of the 90 percent eight-minute limit, let me explain that the last 10 percent is hard as hell to come by. You can get to 70 percent under eight minutes almost by accident. Eighty percent under eight minutes comes with little more effort. But only a handful of systems can consistently meet the 90 percent eight-minute standard, and most of those are subsidized at per capita levels far beyond the levels received by any of these three systems. (Tulsa currently receives no subsidy at all.)

The important point of this response time discussion is that life *should* be easier for medics and managers in Tulsa because the response time demands there are less. (Although, I have been informed that the Tulsa system intends to achieve the 90 percent eight-minute standard very soon, ordinance or not.)

the direct results of combining these unique conditions with the communities' simultaneous demand for excellence and efficiency.

Measuring the Workload

Table 2, however rudimentary the analysis may be, contains some very illuminating information. What I wanted to know was how crews in the three systems generally spend their time. Of course, these times are averages, meaning that sometimes crews work more, and sometimes they work less. But, even so, the numbers shown in Table 2 tell a useful story.

When it comes to time spent actually on a rig handling calls, Kansas City medics average 16 minutes per on-duty hour, compared with 13 minutes for Fort Wayne medics and 15 minutes for Tulsa medics. Thus, even though Kansas City medics run fewer calls per on-duty hour than do the Fort Wayne and Tulsa medics, that is, about one-third fewer calls per hour, the extended crew time per call discussed earlier more than makes up for the difference. On duty, Kansas City medics spend an average of 27 percent of their time actually running calls, compared to Fort Wayne's 22 percent and Tulsa's 25 percent.

But an even bigger difference is

shown when we look at time spent by crews during post-to-post moves. Tulsa's medics average only one minute per on-duty hour in post-to-post moves. This may be partly because, having the highest unit hour utilization ratio (.35/hour), Tulsa's ambulances may be dispatched more often directly to a secondary post assignment from a hospital, thereby simply skipping the intermediate post assignment. But Tulsa's medics may rest assured that, if Tulsa intends to achieve and maintain the 90 percent eight-minute response time standard, Tulsa's post-to-post moves will triple or quadruple. To achieve Fort Wayne's superb response time results, the Fort Wayne medics must "make the coverage" about four times as often as Tulsa's medics, averaging four minutes out of every on-duty hour.

Leaving Tulsa out of the discussion for a minute because of its lower response time performance requirements, let's look at the difference between post-to-post moves in Kansas City versus Fort Wayne. The data underlying these figures show that Fort Wayne medics average about one post-to-post move every three hours on duty, while Kansas City medics average nearly one post-to-post move per on-duty hour. Furthermore, the average post-to-post move in Fort Wayne takes only 9.7 minutes, while the average move in Kansas City takes 16 minutes. When these higher volumes and longer times are combined, the result is that Kansas City medics average 14 minutes spent in post-to-post moves for every hour worked, compared with Fort Wayne medics' four minutes of the same activity.

Why Not Just Reduce the Post-To-Post Moves?

Just prior to this writing (mid-November 1983), Medevac introduced changes to Kansas City's system status plan to reduce post-to-post moves in the system. Prior to those changes, the frequency of post-to-post moves in Kansas City was reportedly nearly one-third higher than the frequencies reported here. Since both costs of fuel and maintenance are borne by the ambulance companies in all three of these systems, and since the companies are free to employ any system status management techniques they choose as long as performance is delivered,

it is obviously in everyone's interest, especially Medevac's, to reduce post-to-post moves as much as possible.

Before the reductions in post-to-post moves, Kansas City response times had been running around 93 percent to 94 percent under eight minutes for life-threatening emergencies. After the reductions in post-to-post moves, Kansas City's response time performance has been hovering dangerously close to the 90 percent minimum. Apparently, there is simply no more breathing room left in the system, which simply means that about 14 minutes in post-to-post activity goes with every hour of employment in that system. It's not a policy, but a fact of life.

Time At Post

All three of these systems utilize very similar procedures for crew check-in, check-out, inventory control, paperwork, vehicle maintenance and cleaning procedures, and so forth. The category for miscellaneous activities on Table 2 includes the average times reported to dispatchers related to such activities as food breaks, fuel stops, crew changes, and similar duties. Administrative duties and other duties that may be performed at post may not be included in this category. In all three systems, about 20 percent of crew time, or about 12 minutes out of every on-duty hour, is spent performing these miscellaneous activities.

The time not spent running calls, making post-to-post moves or performing reported miscellaneous activities is spent at post. In Tulsa, crew members spend an average of 32 minutes out of every hour at post. That's a reasonably comfortable 53 percent of on-duty time. In Fort Wayne, medics spend an average of 31 minutes out of every on-duty hour at post, or about 51 percent of their on-duty time. But Kansas City

medics spend 3 more minutes per hour running calls, and 10 more minutes per hour making post-to-post moves than do Fort Wayne medics. Kansas City medics also spend one more minute per hour running calls and 13 more minutes making post-to-post moves than do Tulsa medics. As a result, Kansas City medics average only 18 minutes per hour at post, or about 30 percent of their on-duty time.

Put another way, both Fort Wayne and Tulsa medics enjoy about 13 more minutes per on-duty hour, on the average, at post than they would if their communities were as difficult to serve as Kansas City. If you work the streets in Kansas City and you think you are working harder, you're right.

In case this article falls into the hands of some elected official, bureaucrat or manager who doesn't understand our industry, allow me to clear up a possible misconception in advance. All time spent at post is not necessarily time spent sleeping or resting. Much at-post time is spent performing various vehicle maintenance-related checks, cleaning the vehicle, perhaps waxing it; completing paperwork; checking or stocking vehicle inventory levels; checking on-board equipment used in patient care; studying for in-service training, continuing education, and periodic recertification; and other miscellaneous duties. We haven't actually checked to determine how much at-post time is eaten up with these other work activities. However, it's safe to say that there isn't much time left to rest at post in Kansas City. This should help to explain, at least for those who need an explanation, the views of Steve Brown, as reported later in this article.

Night Time in Kansas City

Kansas City uses a lot of 24-hour

Table 3 (Kansas City only)

Length of uninterrupted at-post time segments	Percent of at-post time between 2300 and 0500 hrs.
1- 14 minutes	22
15- 29 minutes	16
30- 60 minutes	20
60- 90 minutes	13
90-120 minutes	8
Over 2 hours	21

shifts. In fact, most street medics in Kansas City have at least a few regular 24-hour assignments. That's the way the union likes it, mostly because people seem to prefer the off-duty benefits of the 24-hour shift. I'll come back to that later.

As in most systems, the heaviest workloads in Kansas City usually hit during daytime or early evening hours. Even so, I was concerned about what happens at night to a Kansas City medic working a 24-hour shift. Here it is, based on an analysis of 51 different 6-hour periods falling between 2300 and 0500 hours during 24-hour shifts.

Of the 306 nighttime unit hours expended, 152.28 hours were spent at posts. That is, in Kansas City about 50 percent of the nighttime, on-duty

hours were spent at the post. On the surface, that doesn't sound unusually rough, but take a look at the breakdown in time increments, by percentages, spent at post as shown in Table 3.

The average calls per unit hour during the night was .35 per on-duty hour, just slightly less than the overall average of .37 calls per hour. However, post-to-post assignments at night fell from an overall average of nearly one per hour to .68 post-to-post assignments per unit hour. It should be clear to anyone that 24-hour crews in Kansas City must routinely be experiencing lack of rest and sleep of a magnitude sufficient to threaten impairment of both judgment and motor skills, not to mention the mood they're in when

off duty.

What Does It All Mean?

First of all, let's list a few reasonable assumptions. Kansas City is a tougher town to serve. The people working there have already proven that they can get the job done with the resources available, but they have to work hard to do it. While neither management nor labor likes Kansas City's higher frequencies and longer distances of post-to-post moves, there is no evidence that response times can be maintained any other way without increasing unit hours, the size of the labor force and therefore subsidy or fees. *Everyone* would like to reduce the post-to-post moves, but it's starting to look like a highly active system is what it

The 24-hour Shift

We can all sympathize with the desire for the 24-hour shift. In fact, when I first got to Fort Wayne, there were no 24-hour shifts, so I instituted them. However, the Fort Wayne system has since abandoned all 24-hour shifts, except for supervisors, mainly due to the risk to patient care. In responding to my request for data, Steve Brown, manager of the Fort Wayne system, added the following:

"As for my thoughts, comments, advice, etc., on reducing strain on 24-hour crews, I really don't have a lot to offer in the way of constructive advice, but I can offer some personal comments: We are now using only one 24-hour car, that being the shift supervisor's unit and we have *tried* to create a variety of utilization techniques to allow them to actually be supervisors, yet provide some unit hour coverage with minimum physical, mental, and emotional strain. To date we have been unsuccessful on all fronts....

"We have experimented with an additional 24-hour crew in the past. Based on that experience, I have come to the following conclusions:

1. Our desire to streamline production capabilities to meet actual needs, coupled with the size of our system, makes it very impractical at this point to utilize 24-hour crews.

2. No larger than our system is, it is difficult to actually have any particular post where coverage is a must for response times, but where call volume is low enough to provide a predictable break for a 24-hour crew. *Generally, if the 24-hour car is not making calls, it is*

still needed to be mobile in the system status plan to help provide proper coverage for the rest of the service area. Personally, our minimum and peak demand volumes do not vary widely enough for significant lengths of time to permit the "dropping" of a unit from the system status plan without significant risk to area coverage. If in the future this system expands to encompass the entire county, or even a remote rural sector with sufficient demand to warrant routine posting of a unit for coverage and response time compliance, we will be able to "stash" a 24-hour crew in the area with reasonable expectations of giving them an occasional breather.

3. I have a pointed philosophical problem with using a 24-hour crew that routinely cannot expect to have an opportunity to stay physically and mentally fresh.... Putting myself in the position of a critically ill or injured patient, I don't think that I would want some blurry-eyed, exhausted and possibly grumpy individual taking my life into his/her hands, nor someone who has been working hard for 16 to 20 hours and just got to sleep about an hour ago. That is putting too much faith in the ability of the adrenals to bring the brain 100 percent back to the world of the conscious.

"I also question the ability of most systems to provide a proper balance between giving the 24-hour crews adequate opportunity to rest, versus the true need for those same unit hours of production capacity.... Certainly there are going to be situations where those unit hours are absolutely necessary for coverage whether they are worked in

patient transportation or not. I believe, however, that only the most experienced and sharpest managers of variable-staffing pattern systems will be able to strike that chord. And although I have had more experience than a majority of EMS managers around the country in dealing with these types of questions, in my personal opinion there are woefully few people in existence who meet these qualifications, and at this point I too am only striving to join the group.

"As a medic, I enjoyed working a 24-hour car when I had the opportunity to do so, but both situations were vastly different; one being in a small, rural system where getting a breather consumed 80 percent of my time, while the other provided a general glut of unit hours, although there were times when I questioned my own effectiveness in patient care."

Keep in mind that Steve Brown's comments are offered in the context of a system that has a union contract which makes the effective labor cost per unit hour lower to management if 24-hour shifts are utilized. As a manager, Steve has a powerful financial incentive to use 24-hour shifts, but, out of concern for patient care, as well as his own employees, Steve strongly objects to the 24-hour shift in a high-performance urban setting. Also keep in mind that Steve's comments are related to a system that is able to afford the luxury of 31 minutes per on-duty hour at post, on the average. To the extent Steve's objection against use of extended shifts applies in Fort Wayne, doesn't it apply even more in Kansas City? □

takes to do the job in places like Kansas City.

Is the Work Too Hard?

I guess the last question to resolve has to do with determining whether the workloads imposed by the demands of a highly active system status plan are unreasonable. If we are talking about use of extended shifts, you will get no argument from me. Having looked at the data, the facts, I have to question seriously the use of the 24-hour shift, or any shift running more than 12 hours, as well as back-to-back shifts in any high-performance, high-efficiency urban system using aggressive system status management techniques.

But what about crews working 8-, 10- or 12-hour shifts, with reasonable off-duty opportunity between shifts, including regular two-day weekends that the rest of the world enjoys? Are the workloads that are necessary to the performance of a system like Kansas City's too great even to be imposed upon crews working such schedules as 10-hour shifts with five-day weeks or 12-hour shifts with four-day weeks? Keeping in mind that all three systems run both emergency and nonemergency calls on something like a 50/50 basis, it seems doubtful that even Kansas City's workloads are unreasonable when applied to appropriately rested personnel. Perhaps in the context of a completely dedicated emergency-only system, the higher workload implied by Table 2 might be excessive. But in a full-service, all-paramedic system, there is always the routine transport of old Mrs. Jones from the nursing home to her 2:00 p.m. doctor appointment to relieve the stress of continuous emergency production.

Outdated notions of efficiency throughout the health care industry held that money could be saved by restricting the most highly trained (and therefore expensive) personnel to handle only the most critical and complex patient conditions. Our industry's two-tiered and even three-tiered ambulance systems were a product of this grossly oversimplified thinking. Some years ago the Kaiser-Permanente HMO instituted a similar tiered approach to patient care, allowing nurses, technicians, and health educators to handle most preventive and routine patient contact, so that physicians could be "freed" from mundane

responsibilities. The concept didn't work and was abandoned because the physicians were overstressed by the constant repetition of complex and serious conditions, and by the absence of occasional "mundane" physician-patient contact. Our own multitiered ambulance systems make the same mistake and several more.

But medics in places like Kansas City *do* work more of every hour than many of their counterparts elsewhere in the industry. Perhaps shift assignments and work weeks in Kansas City should reflect that unavoidable reality.

What About Abuse?

Is it abuse to ask a reasonably well paid person, by industry standards, to work steadily, with only occasional breaks throughout an 8-, 10- or 12-hour shift assignment? I can name dozens of professional, skilled and semiskilled jobs, even high-stress

"The welfare of employees was an issue, but, in the local news media, it fell well below the welfare of patients."

jobs, where such practice is routine. With 18 minutes per on-duty hour remaining at post, and with nearly 50 percent of the calls being of a nonemergency nature, the term abuse is likely to seem far out of place to the average high-beam steelworker, inner-city beat cop, oil field roughneck, most registered nurses, fuel transport driver, merchant seaman, commercial fisherman, or other skilled worker who holds any job that combines periodic stress with almost continuous physical activity.

Why Not Save Fuel and Hire More People?

It is often suggested that more people could be hired, the workload could be spread out, and labor relations would be sweeter if those silly post-to-post moves were ended, and the money saved to be used to hire more ambulance crews. We can put

that myth to rest quickly with a few simple calculations. Let's try Kansas City.

The average post-to-post move costs Medevac something like \$2.00 (my estimate), but certainly no more than \$3.00 per move for fuel, additional maintenance, replacement, and so on. At about .9 post-to-post moves per unit hour, Kansas City must be averaging about 10 moves per hour, 24 hours per day, 7 days per week. The marginal cost of post-to-post moves in Kansas City must, therefore, be something well under \$30.00 per hour for the entire system.

With overtime, fringe benefits, employers' share of FICA and other direct labor-related marginal costs per unit hour (see 1984 *jems Almanac* issue for further details of these labor costs per unit hour), you may safely make book on the following figures: If the Kansas City system stopped all post-to-post moves entirely, the resulting savings would finance fewer than two additional around-the-clock crews, or probably not much more than an additional 200 unit hours per week.

But let's take the optimistic figure. Let's assume that two additional crews could be put on duty around the clock, or that the equivalent unit hours could be otherwise better utilized using the money saved by stopping all post-to-post moves. Could the system meet its minimum response time standards using the additional unit hours, but without resorting to frequent post-to-post moves?

The answer is absolutely no. Years ago, Kansas City had a fixed-station plan dispatching 14 ambulances, 24 hours per day, seven days per week from a single dispatch center. That involves approximately 1,000 unit hours per week more coverage than Kansas City currently employs. Practically no post-to-post moves were utilized at that time, everyone was working a 24-hour shift, nearly everyone got plenty of rest at night, and the response times were so bad that reporter Harry Jones, then with the Kansas City *Star*, wrote a series of articles so powerful in their criticism that radical changes took place.

No, Kansas City can never be well served except by a hard-working, almost continuously active organization employing some of the most aggressive system status management

techniques in the industry. That statement will hold true at almost any level of unit hour production capacity, using any form of fixed-station deployment. Kansas City is a tough place to be an ambulance company — not the toughest, but pretty tough. It follows then, that Kansas City and other cities like it will demand more from everyone who chooses to work in such cities, management and labor alike.

Preventing Future Abuse

I remember reading only a few years ago about the really horrible abuse of labor in a large and famous fire department-based EMS system. Fire department medics, transferred to EMS duty from traditional fire-fighting jobs, continued the traditional 24/48-hour shifts, but found themselves running eight times as many calls — all emergency requests. The higher run volumes, the continuous stress of emergency-only work and the unreliability of rest opportunity wrecked the morale of the labor force, attracted the attention of local news media and threatened to destroy the system entirely. The welfare of employees was an issue, but, in the local news media, it fell well below the welfare of patients.

The full-service, all-ALS system partially eliminates that sort of potential abuse by deliberately including both emergency and non-emergency transfer work in the job description. Most non-emergency transfer assignments involve very low stress, modest physical effort and, perhaps best of all, afford a sort of temporary immunity from the dispatch center.

There is another form of abuse that also deserves brief mention. It is the abuse that occurs when working in a bad prehospital care system. It comes with arriving late on the emergency scene, short on training and equipment, and experiencing endless failures of system performance. It comes with having to explain why you are late at the scene or why your equipment won't work. It is the ultimate abuse that goes with the humiliation of working for an organization that cannot perform. Worst of all, it is the kind of abuse that impacts patient care. If you have forgotten what it was like, or never experienced it at all, you may not know what abuse really is.

But what of the abuse that goes

with overly extended shift schedules in the context of a highly active urban system? What can be done about that? First, let's look at what won't work. We have already shown that hiring more people to spread the workload using the savings from an end to post-to-post moves can't succeed. Perhaps we might ask for an increased local tax subsidy to finance the additional crews to relieve the workload. Think about it. You are standing in front of the city council, reporters with tape recorders rolling. Your argument is that you work a 24-hour shift in a high-activity, high-performance urban ambulance system and you can't get any sleep while on duty. What you are asking for is that the city put up additional tax dollars for the purposes of hiring additional people to do some of the work, primarily so that you can sleep at night, at full pay. When asked why you don't just eliminate the use of extended shift schedules, you inform the mayor that you prefer the off-duty lifestyle that goes with the extended shifts, and that you would like the taxpayers to support your off-duty lifestyle with a contribution of hard tax dollars. My prayers go with the person who tries to sustain that argument, or its corollary argument to raise the rates to support off-duty lifestyle preferences.

I guess this is the bad news I was talking about earlier. It was once possible to be a medic in Kansas City, and a lot of other cities, enjoying four or five days off each week. You could even rent or buy a house near your assigned post, and, except to pick up your paycheck, you might never even see a manager for days. For every 24 hours of pay, you could work maybe 16 hours or less. You could hold steady off-duty jobs, maybe making more money off duty than on duty. Perhaps that was the reason you entered the profession in the first place.

In urban areas, it's over. And it won't be back. Perhaps Steve Brown is right. Perhaps shift schedules must simply change to accommodate today's performance demands.

But there is still some good news. The future of high-performance prehospital care includes a direct linkage of rural-urban service areas. Even as I write, I can think of dozens, even hundreds, of places where medics on one side of a geopolitical boundary are working at

warp speed, while medics on the other side of the boundary (that is, the rural side) are losing their skills through lack of practice. There are cities with superb ALS service surrounded by remote rural areas that can't afford it but need it more. They need it more because their trip times are more extended, and because their populations are often older and at greater risk.

The long-range answer to all this is a nationwide network of full-service, all paramedic, completely professionalized rural-urban systems. As a medic in such a system, you will be able to rotate your schedule to alternate high-volume, short-shift assignments with intermittent opportunities to cool your heels at a low-volume, long-shift assignment. Skills are maintained, the people are well served, and nobody is abused.

But even under these utopian circumstances, the job of the professional paramedic will surely not be for everyone. Rotating shifts mean continuously changing off-duty lifestyles and no real opportunity for secondary employ-

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ment. And while the emotional strain of emergency work can be considerably reduced by the nonemergency transfer work mixture, and by periodic assignment to low-volume rural posts, your lower back can't last forever. Marty Yenawine, owner of Eastern Ambulance Service (Syracuse, NY), is convinced that professional paramedics shouldn't demand a retirement program at all, but, instead, a career development program designed to pave the way, in an orderly fashion, for transition completely out of the prehospital care industry.

The arguments Marty makes regarding his position are so powerful that I will devote a future guest writer slot in the "Interface" column to a contribution on the subject from Marty. In this same context, Steve Williamson, executive director of the Tulsa system, is currently researching the relationship between such factors as seniority and no-haul ratios, patient outcome and other variables. Steve's preliminary statistics seem to support Marty

Yenawine's position from the patient's own perspective.

For several personal reasons, this has been the most difficult article I have ever written. The strong temptation has been to report the good news and avoid the bad news. I hope I've not given in to that temptation.

A small suggestion: the times ahead are both tough and exciting. But we could all help to make them less tough and more exciting if we could all stop believing the worst about each other. Throughout our industry, I hear labor saying that managers (and consultants) can't possibly understand what it's like out on the streets. Management is certain that field people will never be willing to accept the realities of limited resources or to grasp the big picture. Both management and labor believe that consultants live in a fantasy world all their own, while consultants often feel left out and unappreciated. My little suggestion is that we all stop thinking that we know each other so well. It is unproductive and unfair to assume that another man or

woman has experienced so little of life as to be incapable of understanding your situation and point of view. □

Coming in the April "Interface": Jack Stout visited with management and labor in Kansas City — exciting and positive changes are afoot to solve their problems.

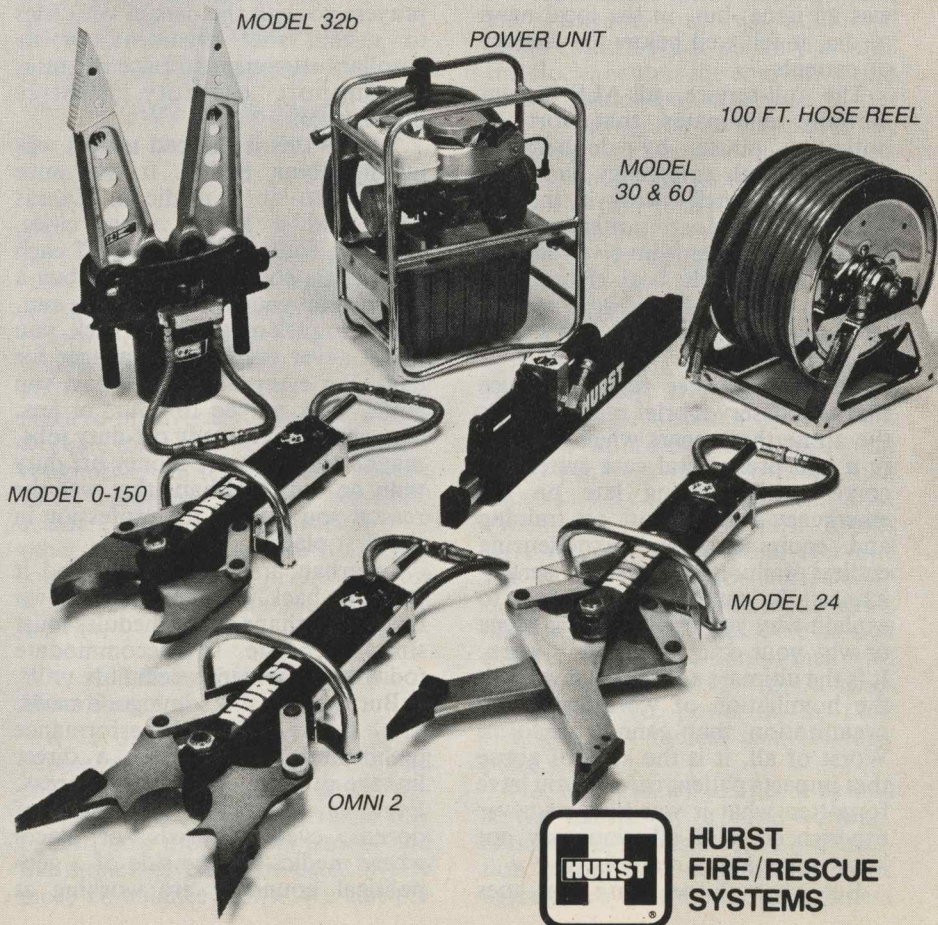
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