

Chapter 3.

The meteorological conditions immediately responsible for London's great killer smog began to develop on Thursday, the fourth of December, 1952. It was then that an extensive high-pressure weather system spread slowly, in a southeasterly direction, across most of the British Isles. The system brought with it light, variable winds, dry air, and rather frigid temperatures. At dusk its center lay ml little more than two hundred miles to the northwest of the capital and the gently sloping valley of the Thames.

After sundown, the light breezes began to fail. By midnight, instruments on the roof of the Air Ministry building at Kingsway, in the heart of London, could record a wind velocity of only two knots an hour. At Kew Observatory, in the western part, of the city, there was no wind velocity at all.

During the night many sections of the almost windless valley experienced a temperature inversion; air near the ground grew colder; soon, it was trapped beneath a lid of warmer air above. Unable to rise vertically, and with no wind to disperse it laterally, the shallow layer of low-lying frigid air was now totally inert. London found itself becalmed. It was destined to remain so, almost without remission, for a period of four days and nights.

Considerable fog began to-form late Thursday evening, and during the early hours of Friday morning. At remained comparatively clean and harmless-but not for long. As the city awoke, tons of smoke from millions of domestic chimneys were hurled upward into the cold, motionless, foggy air. Huge power stations added still more tons of coal smoke and sulfur oxides to the atmosphere. Cars, trucks, buses, and a variety of factories and industrial plants all contributed their pollutants. In a short time the fog had become massively contaminated by a mixture of smoke, soot, carbon particles, and gaseous wastes. Now yellow, now amber, now black, the great killer smog held London in its grip and by early evening, only twelve hours after its onset, the first of the city's inhabitants began to die.

The full toll of human life extracted by London's worst air pollution disaster was never determined. Results of a belated statistical investigation, conducted for the government by the Ministry of Health, indicated that nearly one out of every two thousand people in the city either perished during the four-day smog or else succumbed during the following two weeks.

These, however, were not the only victims. In addition, thousands of Londoners became seriously ill, recovered and then died, months or even years later. To what extent their lives had been shortened by the destructive of the smog, no governmental or private organization could afterward say, and indeed, no particular effort was ever made to examine the matter.

An official study of the killer smog, published more than a year after the event, disclosed considerable information the nature and dimensions of the tragedy; it also left a number of important questions unanswered. Curiously, the most searching question of all was never even raised: why, in the light of prior knowledge and despite both old and recent warnings, had no one in a position of influence or authority made a serious attempt to forestall the disaster? Because one thing was certain: London's foggy climate, her many industrial plants, her inefficient coal-burning domestic chimneys, and her long history of smoky, polluted air, all made

the formation of a vast killer smog extremely likely; omens were clear, had anyone cared to read them.

Yet, when the great killer smog finally came, it caught London and the nation by surprise. Perhaps that was the most incomprehensible thing about it.

Chapter 21

During the early hours of Friday morning, the sleeping metropolis slowly began to stir again. Millions of new fires were lit, millions of electric appliances switched on; soon, additional tons of smoke, fly ash and sulfur dioxide were floating gently upward, unseen, into the cold, motionless air. The smog thickened and expanded. Gradually it spread, in an uneven pattern, over most of the 693 square miles of Greater London. As daylight came, residents peered from their windows to discover that the weather predictions had been all too accurate. Fog was everywhere. Patchy in one location, dense in another, it seemed to shut out the sky and to give the wintry morning a look of bleak hostility. Perhaps it would clear off later in the day. All but the worst fogs generally did.

Londoners ate their breakfast of eggs and toast and gammon, swallowed an extra cup of tea or coffee to ward off the damp, and then, hunching themselves into winter jackets and coats, stepped out into the gray drifting smog. There was nothing to caution them that they might be entering a new and dangerous realm; as far as anyone knew, it was just another pea-souper or, if you had a more literary turn of mind, another London particular.

One of the first men who prepared to leave home on Friday morning, even while it was still dark, was James Allen. He lived about five miles south of London Airport, on the outskirts of Weybridge. Mr. Allen worked for the London Transport Board. He was a Green Line control inspector and was due at his garage in Staines, a low-lying suburb near the Thames, at 5:00 A.M.

Anticipating mud, he pulled on his gum boots, shut the back door of the house, and picked up his bicycle. The fog looked thick. Exactly how thick, it was impossible to tell in the dark. But he'd set off in many a fog before, and he didn't intend to make any concessions to this one.

His usual shortcut saved him ten or fifteen minutes getting to the garage. It meant wheeling his bicycle across the back field until he came to a farmer's gate, then pedaling along a country lane till he reached the main road, finally following this directly into town. The other way round meant going out the front of his house and taking the main road directly; it came to an extra mile or so of travel.

Ordinarily, it took him about five minutes to cross the field. He pushed ahead slowly now, for the fog seemed extremely thick, worse than he'd believed at first. Visibility was only a yard or two. Things were as bad as he'd ever seen them.

Somewhere in the field ahead, perhaps fifty feet from the farmer's gate, there was a large tree. He was sure that in another minute or two it would begin to loom out of the misty darkness. He might even stumble into one of the lower branches if he didn't take care.

After awhile, though, he came to a halt. He couldn't see a single, blessed thing. He listened, but there wasn't the faintest sound. Mr. Allen looked at his watch. He'd been walking for a full ten minutes. Plenty of time to cross the field. Somehow, he'd missed the tree-and the gate as well. He peered around again, but there was still nothing to be seen. He hadn't a clue as to how far he'd come or what part of the field he might be in. He decided to press forward, cautiously, to avoid stumbling into a hedge or a ditch. Sooner or later he was bound to make out the tree, or at least to meet up with a segment of the fence.

After walking another ten minutes, Mr. Allen had to admit the obvious. He was lost-in the same sixty-acre field behind his house that he'd crossed every working day for the past eight years. As far as he could tell, he might have been heading in any direction. He didn't have the slightest idea if he was facing north or south, toward the gate or away from it. He glanced at his watch a third time. it was 5:00 A.m. He was already due at the garage.

There really was no choice now but to push on again, wheeling the bicycle slowly until he came to something he recognized. The field was muddy, but at least his feet were still dry. The silence was complete, except for the squashing sound he made each time he drew one of his boots out of the mud.

Suddenly he rammed into something with the front of his bicycle. At first he thought that he'd finally reached the farmer's gate. A closer look told him he was mistaken. He had been walking in a circle for the past half hour and was standing by the house, right where he'd started. He had bumped into his own back fence.

Feeling a new sense of respect for the fog, Mr. Allen decided to play it safe this time. He went around to the front of the house, mounted his bicycle, and began to pedal along the road in the direction of Staines.

The going still wasn't easy, though. Things were growing a bit brighter as the night faded, but even so, he could only see ahead two or three yards. It was quite tricky, keeping to the road. He had to turn on his bicycle lamp to guide himself by the reflection it made in the string of "tom-cat's-eyes" along the shoulder. He moved at a snail's pace, just turning the wheels enough to maintain balance.

The road was utterly deserted. For perhaps a mile he didn't pass a soul. The stillness was incredible. It was so complete that it made you wonder if some disaster mightn't have taken place and you were the last man left in the world.

Without warning, the silence was broken in the most awful way. The sound come from directly ahead - a half-cry, a half-groan. He braked to a stop and listened. It came again. An unearthly sound. Nearer this time.

He dismounted and stood in the road, both feet planted, peering into the mist. There was a movement, and something began to emerge from the gray shadows. A flicker of white, and then a curious form seemed to rise up in the middle of the road. He saw the curving neck and the heavy body, clumsy now because it was out of its element. A ruddy swan, that's what it was. A ruddy swan from the river.

Mr. Allen drew back to the shoulder of the road and began to let the bird pass. They were all right to watch from a distance, but because of their bad temper, it didn't pay you to draw too close. As he watched the swan lumber by, a thought struck him. The Thames was at least a half mile, away - what was the damn bird doing all the way up here?

Plainly, it was lost. As lost as he himself had been in the field a few minutes ago. The creature must have traveled away from the river a few yards and then hadn't been able to find its way back. Now it was wandering up the middle of the highway, trying to locate the water-and going in exactly the wrong direction.

Mr. Allen watched the swan pass by, and when it had disappeared into the fog again, he remounted his bicycle. A quarter of an hour later he was finally in Staines, approaching the garage.

The motor coaches were on the forecourt waiting to go out. The night-staff engineers, had gotten them ready. Mr. Allen found a few of the drivers and conductors there ahead of him. They were men who lived near the garage. Some had hiked in, some had walked.

The London Transport-System, in common with the Metropolitan Police, the Postal and Ambulance Services, the Automobile Association, and the Port of London Authority, was staffed with men who had experienced heavy weather before. During wintertime they expected a certain amount of fog, and when it occurred they went about their work calmly, following whatever prescribed procedures their particular organization might have evolved. In the absence of specific instructions, they fell back on common sense. If conditions were especially bad, they used any expedient that seemed suitable-sometimes it was nothing more than the familiar wartime method of "muddling through."

Few of the motor coaches at Staines left on time Friday morning, but Mr. Allen got all of them off eventually. He sent them out with a good supply of flares-long staffs of wax and cord-which the conductors would light and carry ahead of the vehicles, if the fog proved too thick for the drivers to see unaided.

The Green Line coaches provided an express service for the huge suburban area surrounding the metropolis. Ordinarily the coaches ran from one of 30 main garages, like the one at Staines, through London and on to a number of stations on the far side of the capital. A typical of other town routes was the one from Staines that followed the river eastward, all the way to Northfleet and Gravesend.

But on Friday morning an emergency plan began to go into effect. Many of the usual trips were curtailed. The coaches, instead of entering central London, approached only as far as the outskirts of the city. Then they turned around and headed back to their home garage. In this way, they continued to provide the suburban area with a somewhat reduced service, without becoming snarled in the traffic jams that were bound to form in the more built-up sections of the metropolis.

After Mr. Allen had watched the last coach leave the forecourt, he sat down at his desk with a mug of tea and a biscuit. It was going to be a hard day for everyone, the drivers and conductors, the mechanics and supervisory personnel. But they had to keep the routes open if possible. All along the roads people would be standing in the wet, chilly fog, waiting for the coaches. Most of

them would be trying to get to their jobs. A lot of the coaches would be late arriving. They would be even later getting back to Staines. Mr. Allen thought of the swan wandering up the 95 road. In all his years with London Transport he'd never seen anything like it. He told himself that this pea-souper was going to be a real ruddy mess before it got done.

Conditions in many parts of Greater London were not yet severe, although by late morning all riverside areas were heavily affected. Westminster and other districts near the water reported a thick, yellowish fog everywhere. Visibility was almost nil on the Thames itself and was less than a dozen yards around the Houses of Parliament. A few localities in central London were still relatively clear, and in some, pedestrians could catch the vague outline of buildings, as far distant as 70 or 80 yards.

But the smog was unquestionably growing thicker. As it did, familiar landmarks began to disappear. Shortly after noon, an observant passerby in Trafalgar Square noticed that the huge figure on top of the Nelson Column, 185 feet above the ground, was gradually receding into the mist.

The Underground was still maintaining a normal schedule, but the city's double-decker buses had begun to experience delays. Traffic in the West End sometimes moved briskly, sometimes only at a vexing crawl. In the snarls and tie-ups of the morning rush hour, cars, trucks, taxis, and buses, often with idling motors, poured out a blend of noxious vapors in the already polluted air.

All morning long the city's coal-burning railway engines added clouds of smoke to the thickening haze. There had been fog throughout the Midlands during the previous night, and now many trains from the north were overdue. Two that came in from Scotland several hours late were special trains of fifty cars each. They carried hogs, sheep, and cattle for the Smithfield Club's livestock show. By the time the animals had been quartered at Earl's Court, their handlers could see that some of the cattle were experiencing difficulty breathing.

During the morning, pedestrians said that they had known heavier fogs than the present one but could hardly recall one that seemed "dirtier" or more obnoxious. At times, the yellow haze had a remarkably pungent and penetrating smell. Some people described the odor as "smoky." others said it was distinctly "sulfur-like." Most Londoners shrugged and continued on their way. They had more important things to do than to try to identify the particular scent of a December pea-souper.

At first Dr. White failed to notice the sulfurous smell as he left his Knightsbridge flat on the way to visit his sister. The morning mail had come and with it his reservations. A single glance at the tickets was enough to make his mind leap ahead to the train, the dock at Marseilles, and the sparkling blue waters of the Mediterranean Sea. Metaphorically, at least, by the time he left home, he was already coming down the gangplank in Egypt.

It was only after he had hailed a taxi in the Brompton Road that he began to realize how strong the odor was and to notice how singularly yellow and ugly the fog looked. Of course bronchitics like himself were often excessively apprehensive about the atmosphere they breathed, but all the same, today's cold air did seem unusually irritating to the nose and throat. He began to cough, though only lightly at first.

The smell, as he told his sister afterward, was remarkably sulfurous. No doubt it was caused by the low-grade coal being burned all over the city, both in people's homes and in the power stations. According to what one read in the newspapers, it was the stations like Battersea and Fulham that were the principal culprits. But Londoners themselves were to blame, too. Smoke, sulfur dioxide, and moistureladen air-what a perfect irritant for the mucous membranes.

Difficult or labored breathing. Dyspnea. That was the trouble with retired doctors. Whenever they had the chance, they began to analyze their own symptoms. Even in a London taxicab in the middle of a fog. To distract himself from glimpses of the slow-moving traffic and the yellowish mist hanging overhead, Dr. White allowed his mind to turn back to a story one of his former colleagues had told him down in the borough, years before. The man's name was Rush and he had been unfortunate enough to take a flat without first making a full investigation.

Rush had been the Chief Administrative Officer in the borough. During the 1930's he had kept a home in the suburbs because his wife wanted "better air" for their children. By 1946, though, the children were safely off at school, and Rush, who had never been fond of commuting, decided to return to the city.

He and his wife took a flat in Pimlico, hard by the Thames. They had a balcony overlooking the water. It was a handsome, modern flat, and the balcony was the piece de resistance, appealing particularly to Mrs. Rush, who greatly fancied the idea of eating their summer breakfasts there.

It hadn't worked out that way because the building not only overlooked the river, it also stood rather near Battersea Power Station. A little to the northeast of the station, which placed their new home squarely in the prevailing airflow.

It wasn't long before Rush and his wife realized they were not going to eat many breakfasts on that balcony of theirs. Not unless they wanted to fish dirt out of the marmalade each morning or drink their coffee while being half-asphyxiated by the stench of the smoke and gases from across the river.

Actually, after the first day or two, they didn't even try. They simply closed the balcony off, sealed the French windows as tightly as possible, and did their best to keep the dirt and soot out of the rest of the flat. Even then, the sills inside were usually covered in the morning with a coating of grime.

They stayed in the flat a year, until their lease was up. Then they moved. But before they did, the French windows fell off-right out into the middle of the balcony. At first they couldn't imagine why the windows had fallen off. They found that the metal hinges had been eaten through. The building was brand-new, and the Rushes had been the first tenants in the flat. Which meant that in less than twelve months the hinges had been completely corroded by the daily stream of sulfur dioxide pouring down from Battersea Station.

As a doctor, he had been interested in Rush's story. Human lung tissue was known to be tough and resilient, but could it be expected to endure that kind of treatment more successfully than copper or brass? Was it any wonder, with the kind of air they were forced to breathe, that half the people in London complained of feeling chesty?

Dr. White did not remain long at his sister's house. She noticed almost at once that he looked paler than usual and that his breathing sounded a little "labored," as she expressed it. Of course she was right, although he didn't acknowledge it. The journey across town had taxed his resources more than he cared to admit. Still, it wasn't pleasant to hear the truth from somebody else. Nor to be told that he had been foolhardy to come, and that he should have remained at home till the fog had lifted.

The air seemed even worse, once he was outside again. He walked to the corner to find a taxi, but apparently there was a dearth of them in the neighborhood just then. He hesitated. Then he began to climb uphill toward the nearest thoroughfare. In a block or two he ought to find a taxi, and once inside, he could lean back and rest.

He was forced to walk six blocks, instead, stopping every block and then going on. The fog was growing denser and the air colder. Before finding a taxi he had to cough several times into his handkerchief. The mucoid material was thick and yellowish-gray. Raising it brought only a little relief. If anything, the spasms exacerbated the burning in his throat and the tightness of his lungs.

The taxi driver was helpful. He did his best to get through the foggy streets as rapidly as possible, but there were inevitable delays. As they were reaching his address in Knightsbridge, a spasm of coughing seized him again. The driver came round and gave him a hand as far as the front hall.

Dr. White paused on the staircase, before climbing to the second floor. He was still sitting there when one of his neighbors passed by on her way out. She asked him if he was all right. He thanked her and said that he was.

When he reached his flat, he administered 1/2 a cc of adrenalin in oil for the bronchial congestion and 2 cc's of Mercuhydrin for his heart. He was feeling utterly drained and shakier more exhausted than he had ever been in his life. And he was still having moderate palpitations of the heart.

The phone began to ring. It was his sister. She just wanted to be sure that he had gotten back safely through the fog. Was he really all right? For some reason, he didn't quite sound like himself.

He described his return, the way things were outside, and the delays en route. He said he was better now. He was going to rest for awhile. Till the morning, perhaps, when he'd be back on his pins again.

Dr. White took off his shoes and placed them to one side, under the bed. He stretched out and drew a light woolen blanket over his legs and feet. Then he raised the pillows, put his head back, and closed his eyes. The cough had subsided. Soon his breathing would be normal again, and the sharp pain in his chest would pass away.

Dr. White's nephew came to the flat in Knightsbridge as early as he could. It was well after closing time at the office because the journey through the fog had taken longer than usual. His mother had called him in the afternoon. She was concerned. Uncle Charles had not looked well during his visit. Later, over the phone, she thought that he had sounded a bit vague. As though

he was wandering. And with his heart already so weak ... would it be too much for him to look in I on his uncle, just to be sure?

There was no answer when he rang the bell, and he had to hunt up the owner of the building so that he could get into the flat with her passkey. It was dark inside. He found the switch and walked across the living room. The door to the bedroom was ajar. It was dark there, too. "Uncle Charles" he called out. "Are you having a nap?"

When there was still no reply, he pushed the door wider. He switched on another light. His uncle lay on top of the bed, a blanket over him. He seemed to be sleeping peacefully.

"Uncle Charles?"

Again there was no answer. Dr. White's nephew crossed to the bed and shook his uncle gently by the shoulder. It failed to rouse him. He raised his hand and touched his uncle's forehead. As he did, his eye fell on the envelope from Thomas Cook. The coldness of his uncle's forehead told him that he would have no use for his ticket to Egypt now. This year the old gentleman had stayed in London a few weeks too long.

Chapter 26

From beginning to end, Saturday was a nightmare for anyone in London who had to be out-of-doors. All the city's streets were filled with the thick, choking mist, and many soon became completely impassable. During the afternoon, instead of thinning, the smog seemed to become even denser.

Numerous buses were forced to halt in their paths and await the arrival of flares, before attempting to resume their journey back to their home garage. At one time, a procession of seventeen clumsy double-deckers, nose-to-tail like a huge, red, metallic caterpillar, could be seen trying to poke along through the smog. The drivers took turns steering the lead bus, while the conductors, armed with spluttering flares, ran around in front and shouted directions.

At its headquarters in Leicester Square, the Automobile Association found itself inundated by appeals for information and assistance. The A.A. had almost three-quarters of a million members, and in the Operations Room at Fanum House, there were times when it seemed as if all of them were trying to reach the Whitehall exchange simultaneously. The thirty-odd operators there answered the calls as best they could; sometimes, no one in the room had a chance to put down his phone receiver for an hour at a stretch.

Many of the calls-primarily the early ones-were of the kind that Operations had to deal with on any routine day. Drivers were in trouble on the road; some lacked the necessary spare parts to make repairs themselves; others required a breakdown van to tow them off to a garage. And there were the usual inquiries about the best route available in crossing London for someone going to Kent or Surrey, or just a question or two about what the weather was like - better or worse than the latest bulletin on the BBC?

But as the hours passed, the inquiries began to change. More and more motorists called Fanum House to say that conditions were now too bad to continue driving. There was scarcely any visibility, not even with the aid of the many flares placed along the main thoroughfares and with all of the city's thousands of street lamps turned on. They were going to have to leave their cars somewhere until the fog lifted-what advice could the Association give them in the meantime?

The A.A. replied that a driver should leave his car in a "safe" place, provided that he could find one. The best spot would be on a side street, preferably near a lamppost. Motorists also were urged to leave their lights on to avoid having their cars struck by passing vehicles. The early assumption at Fanum House was that the fog would disappear in a few hours more; when it failed to do so, hundreds of batteries ran down in cars abandoned all across London.

By late Saturday afternoon, the Association's breakdown patrols and garage tow trucks were finding it increasingly difficult to reach stranded motorists. And for the first time in its history, the Association began to discourage members who wanted to drive to the capital.

"Is your journey really necessary?" Operations asked. "You can't get into London. And if you should somehow manage it, you won't be able to get out again."

Over and over, the weary operators in Leicester Square repeated their warnings. After a few hours, the calls grew fewer. The men and women in the Operations Room-like many other workers in the city-had long since given up any thought of returning home. There wouldn't have been any point to it; everyone knew by now that the fog wasn't going lift, and the next morning they'd only have had to struggle to get back to the job again through smogbound streets. That night they slept on cots at headquarters, and most of them would do so again for two nights more.

The killer smog made extraordinary demands on the Metropolitan Police. Understaffed by more than 20 percent, the force of 14,600 officers and men worked around the clock to keep Greater London from slipping into wider confusion or panic.

The efforts of the police were strenuous and varied. Incredible traffic jams developed, and the bobbies from the local precinct stations had to disentangle them. Donning white "fog coats," some of them manned positions at major intersections, lit flares to guide motorists along the darkened streets, and abandoning their radio-equipped Humbers, organized makeshift traffic patrols on bicycle and foot. Bizarre incidents took place, and often policemen were the ones to discover them. Typical was the motorist who set out from a hotel in Mayfair to drive to nearby Battersea. An officer found him sitting in his car in the middle of a cemetery. The driver couldn't explain how he'd arrived there, especially without knocking down a few of the tombstones. The officer couldn't explain it, either.

All over the city motorists had completely lost their bearings. One police patrol car, still managing to operate south of the river, came upon a line of vehicles apparently stalled. Leaving his own driver in the Humber, the sergeant groped his way forward to the first car. The lady inside was trying to reach her home in Croydon; she hadn't the faintest notion where she was.

The sergeant walked back along the line of cars, asking, "Who wants Croydon?" Finally a convoy of eight vehicles was formed, and the sergeant, on foot, led it away through the smog. He guided the cars for two miles. Then the bad air became too much for him. He began to gag

and to choke on his own mucus. He had to leave them where they were and return to his patrol car-another two-mile walk through the poisoned air.

Members of the force sometimes were called on to perform unusual tasks. Until the growing thickness of the smog and the approach of darkness forced the last patrol cars off the streets, the police helped numerous doctors and midwives visit patients whom they otherwise couldn't have reached. The special 250-man Thames River contingent tied up their boats and did "fog patrol" on foot along the shore. All 250 were excellent swimmers and qualified lifeguards, a fact which probably gave rise to an erroneous report that they rescued a number of people from drowning. They did not; neither did they wear Mae West jackets during the smog nor lose their way and fall into the water.

As the weather grew worse, the London underworld decided to take a holiday. Criminal activity was limited to a few handbag snatchings, some simple burglaries, and an occasional smash-and-grab attack on a small jewelry shop or radio store. Not a single major crime was reported, and the men on duty in the Information Room at Scotland Yard found their work generally slack. The professional criminal needed a car to make his getaway, and he knew that he could not hope to operate a vehicle efficiently with the streets ill their present deplorable condition. Contrary to the theories of the immortal Sherlock Holmes, a fogbound metropolis did not prove an open invitation to the underworld, and during the great killer smog there was not the slightest sign of a massive crime wave.

If criminal activity in London was sharply diminishing, though, sickness and death in the city clearly were not. Individual police officers realized, as early as Saturday, that the smog was claiming an exceptionally large number of victims. An officer in Paddington found that ten people in his borough had died "in police circumstances," instead of the expected one or two. In St. Pancras, another officer found sixteen dead instead of five, and the pattern was being repeated in every borough throughout Greater London.

People began coming to their local police stations on Saturday to report that a neighbor was missing. "Old Mrs. Smith," they would say, "didn't go out to do her shopping, either today or yesterday."

"Mr. Jones, he lives next door, you know-well, he just isn't around."

An officer would accompany them to the address in question and find the body.

Most of the dead who came to the attention of the police were elderly working-class people, living alone. When the smog penetrated their drafty, furnished rooms, they had no one to summon a doctor for them, and they quickly succumbed. No subsequent report would ever touch on the point, but many London policemen knew, from their own experiences, that when the smog came down, anyone poor, sickly, and alone was extremely vulnerable.

There were others in the city who knew, as early as Saturday, that sickness and death were on the rise. The Emergency Bed Service, in its building near London Bridge, was under growing pressure to find hospital space for victims of the smog. More and more doctors were calling the Service, and the twelve women members of each operations team had scarcely a moment's

respite, from the time they settled at their posts until the time when their watch was over and they were relieved.

Conditions on Saturday, however, were, not yet critical at the Service, and the warning system was not yet in effect. A "white" warning would go out to the appropriate hospital authority only if the percentage of hospital admissions to applications fell below 85 percent. Such a step would serve as a precautionary signal-saying that the Bed Service was hard-pressed and might find itself in serious trouble in a day or two should current trends continue. At 80 percent, a yellow" warning would go out, and at 75 percent, a red" one. These would be urgent calls for help; they would say that the situation was very serious, that the resources of the E.B.S. were being rapidly exhausted, and that for one patient in five - or four - no bed could be found.

In response to these warnings, the regional hospital boards would take emergency measures. Admissions from waiting lists would be reduced, extra beds added, and other steps taken to increase accommodations.

At least on Saturday, although the Operations Room was alive with calls, there was no acute emergency. But the senior staff members remained on the alert. Years of experience told them that in a heavy and prolonged fog, it sometimes took three or four days before hospital beds filled up and the sick and the dying had no place to go.

The London Ambulance Service had been operating from 6 General and 21 Accident Stations with increasing difficulty ever since Friday afternoon. Even by then the calls had already mounted far above normal, and poor visibility was making the work of drivers and attendants extremely slow and hazardous. Realizing how critical the situation was becoming, the staff at ambulance headquarters had appealed through the BBC for all off-duty personnel to return to their stations.

Dozens of men and women had responded, and as a result, on Friday evening, 22 extra ambulances were kept available, in addition to the normal nighttime complement of 29. On Saturday, the radio appeal was repeated, and 28 extra vehicles were placed in operation.

Morale was extremely high among the Ambulance personnel. Several men and women on sick leave returned promptly to duty; many drivers put on white coats and left their stations to walk ahead of a vehicle that had no attendant and that otherwise could not have gone out to answer calls. Operating without radios, each ambulance crew was entirely on its own, from departure to return, save when a driver was able to reach a telephone to check in, and this lack of communication made the general task more difficult for all concerned.

Drivers and attendants performed many prodigies of service as the smog grew worse. In the western part of the city, two drivers, alternating on the road and behind the wheel, traveled 14 miles to bring an acute mastoid patient to a hospital. It was by no means the most arduous trip undertaken. Numerous members of the Service returned to their stations utterly exhausted, after walking 15 or 20 miles on a call. By then, their eyes were streaming, they were sick to their stomachs, and their throbbing, blistered feet were covered with blood. Drivers and attendants, too weary to go out again, stayed in their stations, caught a few hours' sleep, and then returned to the job.

Day and night, driving and carrying flares, caring for the sick, the crews of the Ambulance Service answered the endless flood of calls; it seemed hard to believe that things could become worse than they already were on the second full day of the killer smog.