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Experiments in Group Conflict

What are the conditions which lead to harmony or friction between groups of people? Here the question is approached by means of controlled situations in a boys' summer camp

by Muzafer Sherif

Conflict between groups—whether between boys' gangs, social classes, "races" or nations—has no simple cause, nor is mankind yet in sight of a cure. It is often rooted deep in personal, social, economic, religious and historical forces. Nevertheless it is possible to identify certain general factors which have a crucial influence on the attitude of any group toward others. Social scientists have long sought to bring these factors to light by studying what might be called the "natural history" of groups and group relations. Intergroup conflict and harmony is not a subject that lends itself easily to laboratory experiments. But in recent years there has been a beginning of attempts to investigate the problem under controlled yet lifelike conditions, and I shall report here the results of a program of experimental studies of groups which I started in 1948. Among the persons working with me

were Marvin B. Sussman, Robert Huntington, O. J. Harvey, B. Jack White, William R. Hood and Carolyn W. Sherif. The experiments were conducted in 1949, 1953 and 1954; this article gives a composite of the findings.

We wanted to conduct our study with groups of the informal type, where group organization and attitudes would evolve naturally and spontaneously, without formal direction or external pressures. For this purpose we conceived that an isolated summer camp would make a good experimental setting, and that decision led us to choose as subjects boys about 11 or 12 years old, who would find camping natural and fascinating. Since our aim was to study the development of group relations among these boys under carefully controlled conditions, with as little interference as possible from personal neuroses, background influences or prior experiences, we selected

normal boys of homogeneous background who did not know one another before they came to the camp.

They were picked by a long and thorough procedure. We interviewed each boy's family, teachers and school officials, studied his school and medical records, obtained his scores on personality tests and observed him in his classes and at play with his schoolmates. With all this information we were able to assure ourselves that the boys chosen were of like kind and background: all were healthy, socially well-adjusted, somewhat above average in intelligence and from stable, white, Protestant, middle-class homes.

None of the boys was aware that he was part of an experiment on group relations. The investigators appeared as a regular camp staff—camp directors, counselors and so on. The boys met one another for the first time in buses that



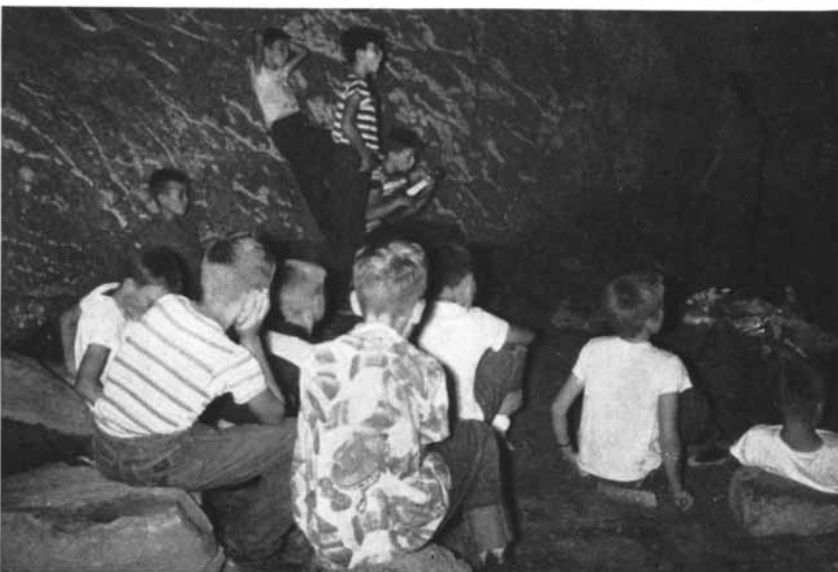
MEMBERS OF ONE GROUP of boys raid the bunkhouse of another group during the first experiment of the author and his asso-

ciates, performed at a summer camp in Connecticut. The rivalry of the groups was intensified by the artificial separation of their goals.

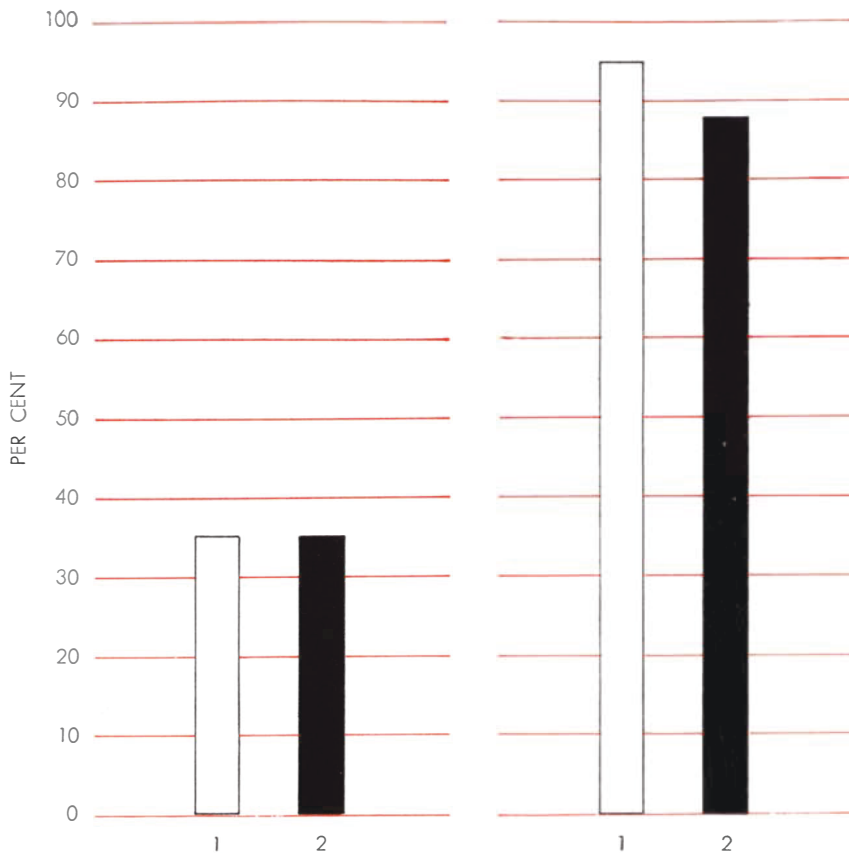
took them to the camp, and so far as they knew it was a normal summer of camping. To keep the situation as lifelike as possible, we conducted all our experiments within the framework of regular camp activities and games. We set up projects which were so interesting and attractive that the boys plunged into them enthusiastically without suspecting that they might be test situations. Unobtrusively we made records of their behavior, even using "candid" cameras and microphones when feasible.

We began by observing how the boys became a coherent group. The first of our camps was conducted in the hills of northern Connecticut in the summer of 1949. When the boys arrived, they were all housed at first in one large bunkhouse. As was to be expected, they quickly formed particular friendships and chose buddies. We had deliberately put all the boys together in this expectation, because we wanted to see what would happen later after the boys were separated into different groups. Our object was to reduce the factor of personal attraction in the formation of groups. In a few days we divided the boys into two groups and put them in different cabins. Before doing so, we asked each boy informally who his best friends were, and then took pains to place the "best friends" in different groups so far as possible. (The pain of separation was assuaged by allowing each group to go at once on a hike and camp-out.)

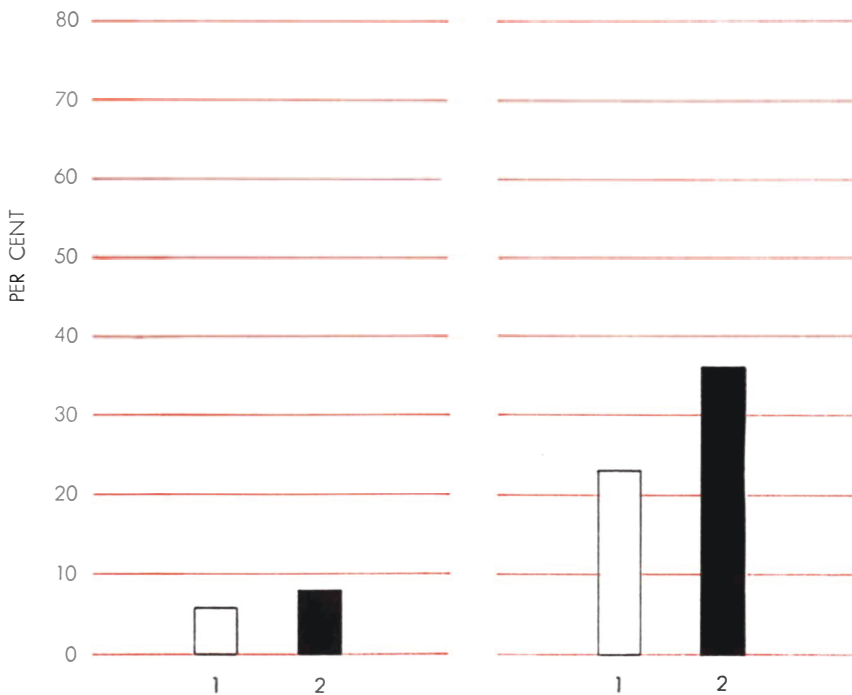
As everyone knows, a group of strangers brought together in some common activity soon acquires an informal and spontaneous kind of organization. It comes to look upon some members as leaders, divides up duties, adopts unwritten norms of behavior, develops an *esprit de corps*. Our boys followed this pattern as they shared a series of experiences. In each group the boys pooled their efforts, organized duties and divided up tasks in work and play. Different individuals assumed different responsibilities. One boy excelled in cooking. Another led in athletics. Others, though not outstanding in any one skill, could be counted on to pitch in and do their level best in anything the group attempted. One or two seemed to disrupt activities, to start teasing at the wrong moment or offer useless suggestions. A few boys consistently had good suggestions and showed ability to coordinate the efforts of others in carrying them through. Within a few days one person had proved himself more resourceful and skillful than the rest. Thus, rather quick-



MEMBERS OF BOTH GROUPS collaborate in common enterprises during the second experiment, performed at a summer camp in Oklahoma. At the top the boys of the two groups prepare a meal. In the middle the two groups surround a water tank while trying to solve a water-shortage problem. At the bottom the members of one group entertain the other.



FRIENDSHIP CHOICES of campers for others in their own cabin are shown for Red Devils (*white*) and Bulldogs (*black*). At first a low percentage of friendships were in the cabin group (*left*). After five days, most friendship choices were within the group (*right*).



DURING CONFLICT between the two groups in the Robber's Cave experiment there were few friendships between cabins (*left*). After cooperation toward common goals had restored good feelings, the number of friendships between groups rose significantly (*right*).

ly, a leader and lieutenants emerged. Some boys sifted toward the bottom of the heap, while others jockeyed for higher positions.

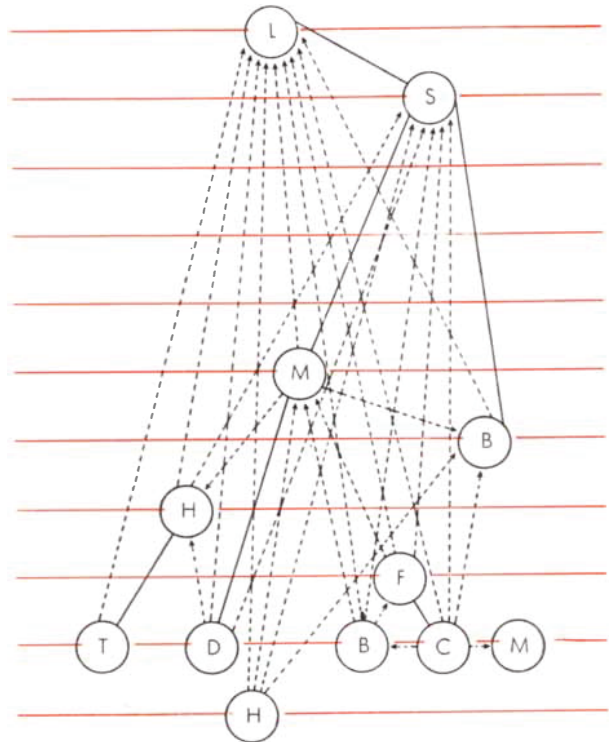
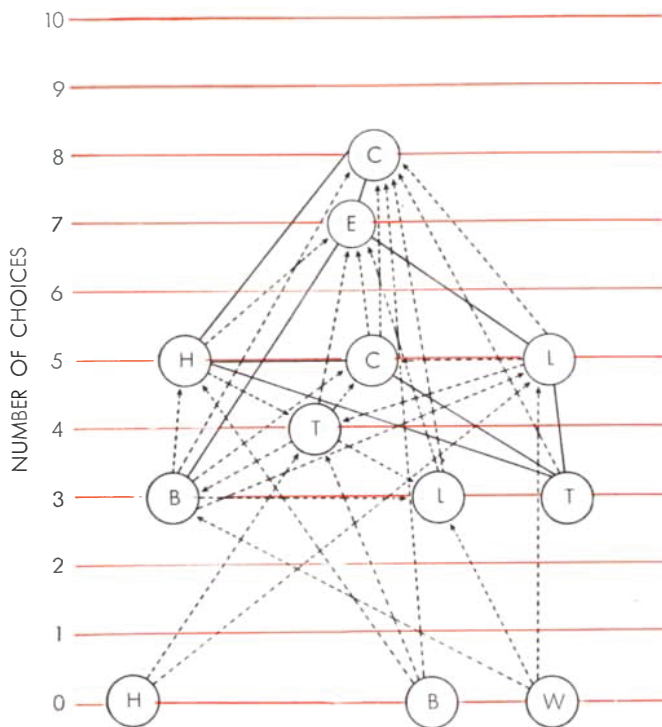
We watched these developments closely and rated the boys' relative positions in the group, not only on the basis of our own observations but also by informal sounding of the boys' opinions as to who got things started, who got things done, who could be counted on to support group activities.

As the group became an organization, the boys coined nicknames. The big, blond, hardy leader of one group was dubbed "Baby Face" by his admiring followers. A boy with a rather long head became "Lemon Head." Each group developed its own jargon, special jokes, secrets and special ways of performing tasks. One group, after killing a snake near a place where it had gone to swim, named the place "Moccasin Creek" and thereafter preferred this swimming hole to any other, though there were better ones nearby.

Wayward members who failed to do things "right" or who did not contribute their bit to the common effort found themselves receiving the "silent treatment," ridicule or even threats. Each group selected symbols and a name, and they had these put on their caps and T-shirts. The 1954 camp was conducted in Oklahoma, near a famous hideaway of Jesse James called Robber's Cave. The two groups of boys at this camp named themselves the Rattlers and the Eagles.

Our conclusions on every phase of the study were based on a variety of observations, rather than on any single method. For example, we devised a game to test the boys' evaluations of one another. Before an important baseball game, we set up a target board for the boys to throw at, on the pretense of making practice for the game more interesting. There were no marks on the front of the board for the boys to judge objectively how close the ball came to a bull's-eye, but, unknown to them, the board was wired to flashing lights behind so that an observer could see exactly where the ball hit. We found that the boys consistently overestimated the performances by the most highly regarded members of their group and underestimated the scores of those of low social standing.

The attitudes of group members were even more dramatically illustrated during a cook-out in the woods. The staff supplied the boys with unprepared food and let them cook it themselves. One boy promptly started to build a fire, asking



SOCIOGRAMS represent patterns of friendship choices within the fully developed groups. One-way friendships are indicated by broken arrows; reciprocated friendships, by solid lines. Leaders were among those highest in the popularity scale. **Bulldogs (left)**

had a close-knit organization with good group spirit. Low-ranking members participated less in the life of the group but were not rejected. **Red Devils (right)** lost the tournament of games between the groups. They had less group unity and were sharply stratified.

for help in getting wood. Another attacked the raw hamburger to make patties. Others prepared a place to put buns, relishes and the like. Two mixed soft drinks from flavoring and sugar. One boy who stood around without helping was told by the others to “get to it.” Shortly the fire was blazing and the cook had hamburgers sizzling. Two boys distributed them as rapidly as they became edible. Soon it was time for the watermelon. A low-ranking member of the group took a knife and started toward the melon. Some of the boys protested. The most highly regarded boy in the group took over the knife, saying, “You guys who yell the loudest get yours last.”

When the two groups in the camp had developed group organization and spirit, we proceeded to the experimental studies of intergroup relations. The groups had had no previous encounters; indeed, in the 1954 camp at Robber’s Cave the two groups came in separate buses and were kept apart while each acquired a group feeling.

Our working hypothesis was that when two groups have conflicting aims—i.e., when one can achieve its ends only at the expense of the other—their members will become hostile to each other

even though the groups are composed of normal well-adjusted individuals. There is a corollary to this assumption which we shall consider later. To produce friction between the groups of boys we arranged a tournament of games: baseball, touch football, a tug-of-war, a treasure hunt and so on. The tournament started in a spirit of good sportsmanship. But as it progressed good feeling soon evaporated. The members of each group began to call their rivals “stinkers,” “sneaks” and “cheaters.” They refused to have anything more to do with individuals in the opposing group. The boys in the 1949 camp turned against buddies whom they had chosen as “best friends” when they first arrived at the camp. A large proportion of the boys in each group gave negative ratings to all the boys in the other. The rival groups made threatening posters and planned raids, collecting secret hoards of green apples for ammunition. In the Robber’s Cave camp the Eagles, after a defeat in a tournament game, burned a banner left behind by the Rattlers; the next morning the Rattlers seized the Eagles’ flag when they arrived on the athletic field. From that time on name-calling, scuffles and raids were the rule of the day.

Within each group, of course, solidar-

ity increased. There were changes: one group deposed its leader because he could not “take it” in the contests with the adversary; another group overnight made something of a hero of a big boy who had previously been regarded as a bully. But morale and cooperativeness within the group became stronger. It is noteworthy that this heightening of cooperativeness and generally democratic behavior did not carry over to the group’s relations with other groups.

We now turned to the other side of the problem: How can two groups in conflict be brought into harmony? We first undertook to test the theory that pleasant social contacts between members of conflicting groups will reduce friction between them. In the 1954 camp we brought the hostile Rattlers and Eagles together for social events: going to the movies, eating in the same dining room and so on. But far from reducing conflict, these situations only served as opportunities for the rival groups to berate and attack each other. In the dining-hall line they shoved each other aside, and the group that lost the contest for the head of the line shouted “Ladies first!” at the winner. They threw paper,

food and vile names at each other at the tables. An Eagle bumped by a Rattler was admonished by his fellow Eagles to brush "the dirt" off his clothes.

We then returned to the corollary of our assumption about the creation of conflict. Just as competition generates friction, working in a common endeavor should promote harmony. It seemed to us, considering group relations in the everyday world, that where harmony between groups is established, the most decisive factor is the existence of "superordinate" goals which have a compelling appeal for both but which neither could achieve without the other. To test this hypothesis experimentally, we created a series of urgent, and natural, situations which challenged our boys.

One was a breakdown in the water supply. Water came to our camp in pipes from a tank about a mile away. We arranged to interrupt it and then called the boys together to inform them of the crisis. Both groups promptly volunteered to search the water line for the trouble. They worked together harmoniously, and before the end of the afternoon they had located and corrected the difficulty.

A similar opportunity offered itself when the boys requested a movie. We told them that the camp could not afford to rent one. The two groups then got together, figured out how much each group would have to contribute, chose the film by a vote and enjoyed the showing together.

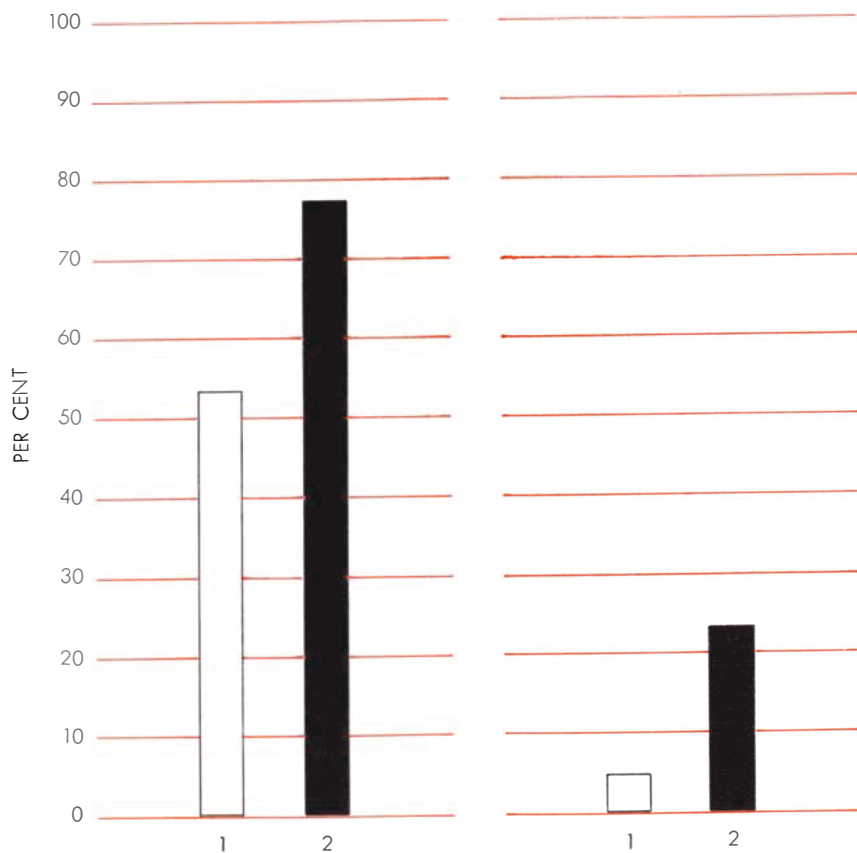
One day the two groups went on an outing at a lake some distance away. A large truck was to go to town for food. But when everyone was hungry and ready to eat, it developed that the truck would not start (we had taken care of that). The boys got a rope—the same rope they had used in their acrimonious tug-of-war—and all pulled together to start the truck.

These joint efforts did not immediately dispel hostility. At first the groups returned to the old bickering and name-calling as soon as the job in hand was finished. But gradually the series of cooperative acts reduced friction and conflict. The members of the two groups began to feel more friendly to each other. For example, a Rattler whom the Eagles disliked for his sharp tongue and skill in defeating them became a "good egg."

The boys stopped shoving in the meal line. They no longer called each other names, and sat together at the table. New friendships developed between individuals in the two groups.

In the end the groups were actively seeking opportunities to mingle, to entertain and "treat" each other. They decided to hold a joint campfire. They took turns presenting skits and songs. Members of both groups requested that they go home together on the same bus, rather than on the separate buses in which they had come. On the way the bus stopped for refreshments. One group still had five dollars which they had won as a prize in a contest. They decided to spend this sum on refreshments. On their own initiative they invited their former rivals to be their guests for malted milks.

Our interviews with the boys confirmed this change. From choosing their "best friends" almost exclusively in their own group, many of them shifted to listing boys in the other group as best friends [see lower chart on page 56]. They were glad to have a second chance to rate boys in the other group, some of them remarking that they had changed their minds since the first rating made after the tournament. Indeed they had. The new ratings were largely favorable [see chart on this page].



NEGATIVE RATINGS of each group by the other were common during the period of conflict (*left*) but decreased when harmony was restored (*right*). The graphs show percent who thought that *all* (rather than *some* or *none*) of the other group were cheaters, sneaks, etc.

Efforts to reduce friction and prejudice between groups in our society have usually followed rather different methods. Much attention has been given to bringing members of hostile groups together socially, to communicating accurate and favorable information about one group to the other, and to bringing the leaders of groups together to enlist their influence. But as everyone knows, such measures sometimes reduce intergroup tensions and sometimes do not. Social contacts, as our experiments demonstrated, may only serve as occasions for intensifying conflict. Favorable information about a disliked group may be ignored or reinterpreted to fit stereotyped notions about the group. Leaders cannot act without regard for the prevailing temper in their own groups.

What our limited experiments have shown is that the possibilities for achieving harmony are greatly enhanced when groups are brought together to work toward common ends. Then favorable information about a disliked group is seen in a new light, and leaders are in a position to take bolder steps toward cooperation. In short, hostility gives way when groups pull together to achieve overriding goals which are real and compelling to all concerned.

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Monitoring the person

For better or worse, consumption of horseshoes, coal scuttles, and 1-gallon kerosene cans falls, and that of film badges steadily rises. As ever more men earn their daily bread by the care and feeding of nuclear reactors or the manipulation of reactor products, the time has come for us to systematize the nomenclature of the various materials we make that go into the badges worn for a working week and then turned in for recording how much radiation the worker has received.

The simplest of the materials is *Kodak Personal Monitoring Film, Type 1*, with a layer of the most sensitive of all x-ray emulsions on each side of the base. It comes in $1\frac{1}{4}$ " x $1\frac{5}{8}$ " size, just like dental

x-ray film, in a little packet that comes apart with the pull of a tab in the processing room. Its function, largely, is to establish that the wearer has not been exposed to more β -, γ -, or X-radiation than is considered permissible.

Now, however, the new *Kodak Personal Monitoring Film, Type 2*, goes a step farther. *Type 2* has the highly sensitive emulsion on one side only. The other side bears a low-sensitivity emulsion that is just barely affected by exposures that drive the high-sensitivity side to full density. If the film should emerge from processing a sinister heavy black, one can quickly remove the high-sensitivity emulsion and assess the full measure of the misfortune from the density of the slow emulsion. Fortunately, this happens very seldom. The previous practice of packing separate pieces of fast and slow film into the badge had seemed extravagantly pessimistic in its waste of film and processing labor. The way was clear for the genius who conceived *Type 2*.

Kodak Personal Neutron Monitoring Film, Type A, is read with a microscope. One counts within a given area the number of tracks left by protons recoiling from fast neutrons or generated in the nuclear $N^{14}(n,p)C^{14}$ reaction.

Kodak Personal Neutron Monitoring Film, Type B, is a complex sandwich of nuclear track film between aluminum shields and paper proton radiators, all contrived to make the track counts correspond more quantitatively to the dosage effect of fast neutrons such as occur around accelerators.

Eastman Kodak Company, Special Sensitized Products Division, Rochester 4, N. Y., quotes prices, gives hints on processing and calibration, and arranges delivery through Kodak dealers. (Secretaries to the contrary notwithstanding, the word is "personal," not "personnel.")

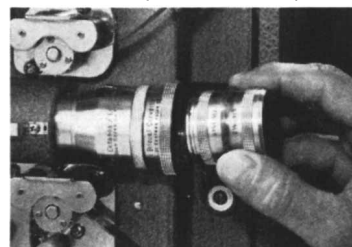
Want your focal length changed?

You are to show movies. You bring the projector in and set it up in the logical place. Screen's all set. You thread the film. The projector lamp goes on. As you bring the lens to

focus, you are confronted with one of the following three situations: 1) the rectangle of light neatly fits the screen, and the screen is big enough for all to see comfortably; 2) the picture is too small, and the room isn't long enough to get it any bigger; 3) the picture is too big for the screen, and it is inconvenient to move the projector any closer.

In cases 2) and 3) there is generally a fellow present who knows all about geometrical optics. He advises that you need the shorter or longer focal length. You look in the case. Of course, there is no other lens there; but if there were, the law of probabilistic adversity would guarantee it to be a longer lens if your difficulty is too small an image and a shorter lens if the image is too big.

All this was before the era of the *Cine-Kodak Bifocal Converter*, which



commenced several months ago. This small cylinder is a telescope of $1.25\times$ power. It slips over the *Kodak Projection Ektanon Lens, 2-inch f/1.6*, that is standard on all 16mm projectors we make. Put on one way, it can expand the projected picture from about $6\frac{1}{2}$ square feet to $10\frac{1}{2}$ square feet for a 16-foot throw. Turned the other way for a large room, it can keep the picture within an 8-foot width when the projector is 10 feet farther from the screen than without the converter.

The proposition is appealing in its simplicity. For \$26.50, a dollar less than the price of a single Ektanon lens, your Kodak dealer is in effect selling you two supplementary focal lengths. And the optical performance is good at all three focal lengths, because the designers of the converter knew exactly what projection lens it was to go on.

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