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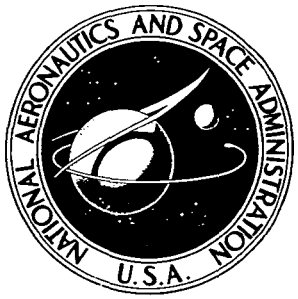

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EMOTIONALITY IN RESPONSE TO AIRCRAFT NOISE: A REPORT OF DEVELOPMENTAL WORK

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Prepared by
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16. Abstract

This report describes a literature search and pilot study which were conducted to investigate the topic of emotional response to aircraft noise. A Tell-A-Story Technique was developed for use in the pilot study requiring respondents to make up stories to a series of aircraft-related and non-aircraft-related pictures. A content analysis of these stories was made. The major finding was that response patterns varied among three groups of respondents - those currently living near airports, those who had lived near airports in the past, and those who had never lived near airports. Negative emotional feelings toward aircraft were greatest among respondents who had lived near airports in the past but no longer did. A possible explanation offered for this finding was that people currently living near airports might adapt to the situation by denying some of their negative feelings, which they might feel more free to express after they had moved away from the situation.

The report also includes a description of other techniques used in the pilot study including group interviews and a word association task.

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TABLE OF CONTENTS

EMOTIONALITY IN RESPONSE TO AIRCRAFT NOISE: A REPORT OF DEVELOPMENTAL WORK

1.0 Introduction.

1.1 Project Background.

This work was performed as a pilot study for the National Aeronautics and Space Administration (NASA) by the Behavioral Sciences Group (BSG) of the Technical Analysis Division of the National Bureau of Standards.[1]

In the early 1970's Tracor Inc., reported to NASA the findings of two studies on community reactions to airport noise. The larger study[2] included residents living near airports in the cities of Boston, Chicago, Dallas, Denver, Los Angeles, Miami and New York. The smaller study[3] surveyed residents living near smaller airports in Chattanooga, Tennessee, and Reno, Nevada. In both of these studies it was found that estimation of annoyance using noise exposure as the sole predictor was poor. But, when other variables were included, the prediction equation was improved. The variable which correlated the most highly with annoyance (of the variables investigated) was fear of planes crashing into one's yard. These results were of interest to NASA, but they had questions concerning the amount of significance to be placed on this variable based upon this one finding.

Therefore, NASA requested that the BSG investigate the topic of fear in response to aircraft noise by conducting a literature search and review of any relevant existing studies, including the Tracor work. NASA also requested that BSG perform pilot work to develop techniques which might be used in investigating the emotional reactions of people living in or near the flight paths of airports. The literature search was completed in 1973. The remaining phases of the project were carried out in 1974.

1.2 Description of Project.

The project was performed in two phases. The results of the first phase, the literature search and evaluation of relevant studies, are presented in Section 2.0 of this report.

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[1]Most of the work on this project was performed by the Technical Analysis Division. However, as a result of an organizational change, the project was completed by the Center for Consumer Product Technology, National Bureau of Standards.

[2]Community Reaction to Airport Noise. Volume 1 (1971), Tracor, Inc. Austin, Texas.

[3]Connor, W.K. and H.P. Patterson, Community Reaction to Aircraft Noise Around Smaller City Airports. (1972), Tracor, Inc., Austin, Texas.

The second phase, the pilot study, included experimentation with several techniques. The most fruitful of these, the Tell-A-Story Technique, is described in Section 3. This technique required respondents to make up stories to a series of aircraft-related and non-aircraft-related pictures. A content analysis was made of these stories and is described in Section 3.4. Results were examined for three groups of respondents: (a) those who were currently living near airports; (b) those who had lived near airports but no longer did, and (c) those who had never lived near airports. These results are discussed in Section 3.5.

Other techniques were incorporated in the pilot study and are discussed in the Appendices. These techniques included group interviews (Appendix A), a word association task (Appendix B), and the administration of an anxiety scale (Appendix C).

The author wishes to thank the participants in the planning sessions which led to the design of this study. Many of their ideas and suggestions were incorporated into the pilot study and the hypotheses discussed in this report originated in these preliminary sessions. The participants were Ms. Elaine Bunten, Dr. Robert Cunitz, Dr. Richard Mach, and Dr. Ralph Swisher.

Dr. Lynn Llewellyn assisted in planning the content analysis of the data from the Tell-A-Story Technique and his helpful suggestions are gratefully acknowledged. Dr. June Cornog's contributions to the project are also appreciated. They included conducting the group interviews and supervising the design and administration of the pilot study.

Special thanks goes to Ms. Mary Sirk who assisted with many aspects of the project including conducting interviews, coding data, handling administrative aspects of the project, and locating people to participate as subjects in the pilot study.

The reviewers of the first and final drafts of this report are thanked for helping the author to organize her thoughts. They were Ms. Elaine Bunten, Dr. June Cornog, Dr. Robert Cunitz, Mr. John Donaldson, Ms. Suellen Halpin, Dr. Lynn Llewellyn, and Dr. Ralph Swisher.

Special appreciation is extended to John Donaldson for the management support he provided after acquiring this project as one of his expanded responsibilities. Mrs. Mary Abbott and Mrs. Kendra Yates also deserve a special thanks for their assistance with administrative tasks as well as the final typing of this report.

Finally, the contributions of all the people who willingly cooperated as subjects in the pilot study are appreciated.

2.0 Literature Review.

2.1 Introduction.

The literature search and review included documents in the areas of noise research, social psychology and clinical psychology. A computerized search was requested of the Smithsonian Science Information Exchange (SSIE) for data on current research projects from all sources of Federal agency-supported research and a wide range of non-Federally-supported research. Keywords used for this search were: community attitudes toward airports; behavioral reactions to noise; fear of airplanes/airports; emotional reactions to noise; fear/noise; anxiety/noise, and anger/noise.

The studies found in the literature search which were related to the topic of fear in response to noise, are discussed in the Sections which follow. A list of materials reviewed can be found in the Bibliography.

2.2 Tracor Studies.

As stated in Section 1.1, the results of the Tracor studies were of sufficient interest to NASA to warrant further investigation. The Tracor work consisted of two community response studies. The first study, known as the Seven City Study[4], contained interviews with 8,207 people living near airports in the cities of Boston, Chicago, Dallas, Denver, Los Angeles, Miami and New York. The second study, known as the Two City Study[5], consisted of interviews with 1,960 people living around the smaller airports in Chattanooga, Tennessee, and Reno, Nevada.

In both of these studies, efforts were made to develop a prediction equation which could be used to estimate annoyance of aircraft noise among people living near airports. Estimation of annoyance using noise exposure as the sole predictor was poor. But when other psychological and social variables were included the prediction equation was improved. Of the 20 variables investigated, the 7 which best explained annoyance were: fear of aircraft crashing in the neighborhood; susceptibility to noise; distance from the airport; noise adaptability; city of residence; belief in misfeasance on the part of those able to do something about the noise problem, and the extent to which airport and air transportation were viewed as important by the respondent. As was mentioned in

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[4]Ibid.,p. 1.

[5]Ibid.,p. 1.

Section 1.1, the fear variable correlated most highly with annoyance than the other 6 variables.

In evaluating these findings, the BSG raised three points:

(1) The data concerning the fear variable were derived from only two questions in the questionnaire used by Tracor; specifically, "When you see or hear airplanes overhead, how often do you feel they are flying too low for safety of residents in the area?" and "When you see or hear airplanes overhead, how often do you feel there is some danger that they might crash nearby?" This limitation in the study occurred because the survey was concerned with determining the importance of a number of variables, making it impossible to cover any particular variable in depth.

(2) Although the questionnaire did not specifically state that aircraft noise was the topic of concern, the intent of the survey (to determine people's feelings about aircraft-related problems) was not well disguised, since most of the questions dealt with aircraft-related items. This has been a problem with other community surveys as well and is a difficult one to solve. When respondents are aware that a government agency is interested in noise-related problems, it is possible that they may give the kinds of answers which will lead to policy changes, even though these responses may not reflect their real feelings.

(3) The survey did not relate the importance of a person's concern about aircraft crashing to the importance of other concerns in the person's life. Although a respondent might state, when asked, that he feared aircraft crashing, this fear could be relatively unimportant to him in comparison with other fears.

2.3 Heathrow Studies.

The Heathrow surveys were conducted around Heathrow Airport in London in 1961 (1,731 interviews)[6] and in 1967 (3,118 interviews).[7]

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[6]McKennell, A.D., Aircraft Noise Annoyance Around London (Heathrow) Airport. S.S.337. London: Central Office of Information, 1963.

[7]Second Survey of Aircraft Annoyance Around London (Heathrow) Airport. London: Her Majesty's Stationery Office, 1971.

The second survey, which was designed to determine changes which had occurred in people's attitudes toward aircraft-related problems, used the same questionnaire as the first. In the second survey, it was found that the percentage of respondents expressing fear of planes crashing was less than the first survey.

Table 2.3.1 FINDINGS OF HEATHROW STUDIES ON FEAR

Questions from survey:

When you hear the aircraft fly overhead, do you ever feel there is any danger it might crash nearby?

	1961 Survey	1967 Survey
YES	42 percent	30 percent
If YES, would you say you feel this:		
Very often	14 percent	9 percent
Fairly often	3 percent	13 percent
Occasionally	83 percent	79 percent

The Heathrow surveys had the advantage of allowing respondents to express the extent of their fears about planes crashing, and most respondents said they felt this fear only occasionally. But the surveys had the same disadvantage as the Tracor studies (and most other community response surveys which have been conducted about aircraft noise) in that the purposes of the survey were not well disguised. Although the surveys were presented as studies of living conditions, most of the questions in the surveys concerned aircraft noise.

2.4 Douglas Aircraft Surveys.

Two surveys were conducted by the Douglas Aircraft Company in neighborhoods around the Los Angeles Airport in 1968 (200 interviews)

and 1969 (500 interviews).[8] One of the findings was that females more often expressed fear of aircraft noise (32 percent, 25 percent) than did males (14 percent, 11 percent). These surveys were less specific about fear than some of the others. The respondent was asked only if he occasionally felt frightened as a result of aircraft noise, without specifically distinguishing between fear of planes crashing and other possible fears.

2.5 Multi-disciplinary Research on Effects of Aircraft Noise on Man.

A complex interdisciplinary research study[9] conducted in 1969 was reported at a symposium on noise in July 1974. The researchers concluded, based upon their literature review, that "knowledge of the stimulus variables alone (measured noise levels) does not provide sufficient predictability of reactions, since correlations are not very high and there remains considerable variance in reactions even if the stimulus is held constant." These authors formed the hypothesis of "a complex system of interdependent variables in which 'moderator' variables are being attributed a decisive influence on the process of turning affecting stimuli into resulting reactions." The authors reported that three variables which correlated with both stimulus variables (e.g., noise) and reaction variables (e.g., psychological and physiological effects) were fear of aircraft, association of adjectives like "threatening" to a picture showing aircraft, and association of adjectives like "irritating" to a picture showing aircraft.

Complete details of this study had not been published in 1973 when this literature search was conducted. The study is of interest since the researchers seem to be using some techniques similar to those which we used in the pilot study - although it will be necessary to see the research report to determine the details about the techniques which were used.

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[8]Burrows, A.A., and D. Zamarin, "Aircraft Noise and the Community: Some Recent Survey Findings," Aerospace Medicine (January 1972), 27-33.

[9]Finke, H.O., R. Guski, R. Martin, B. Rohrmann, R. Schumer, and A. Schumer-Kohrs, "Effects of Aircraft Noise on Man," presented at the Symposium on Noise in Transportation, University of Southampton, England.

2.6 Noise Annoyance Susceptiblity Study.

A study by British researchers has suggested the importance of personality factors in determining reactions to noise.[10] These researchers reviewed previous studies and concluded (as have other researchers) that human annoyance reactions to noise are affected by factors in addition to level of the stimulus noise. They hypothesized that there may be certain personality variables which explain why there are differences in the extent to which different people are bothered by a noise of a particular level.

A laboratory study was conducted in which 20 subjects were presented with tape recordings of street noise, aircraft noise and industrial noise at levels of 55 to 95 dBA. Subjects were asked to make judgements as to whether the noises were: quiet, noticeable, intrusive, annoying, very annoying or unbearable. Subjects were categorized as being relatively noise sensitive or noise insensitive according to how they rated these sounds. (Noise sensitive subjects were those who found relatively low levels of noise bothersome, while subjects who were relatively insensitive to noise required the noise to be presented at higher levels before rating it as annoying.) Subject ratings of stimulus noises versus actual measured levels of stimulus noises were graphed for each subject. These graphs showed that subjects who were relatively sensitive to noise had high annoyance ratings at moderate noise levels, but their annoyance curves did not go up as sharply as those for less noise-sensitive subjects.

The researchers considered a number of variables which might account for the differences. Variables such as age, sex, education, job responsibility, scores on the Eysenck Personality Inventory, and scores on the Minnesota Multiphasic Personality Inventory did not account for differences. (For some of these variables, however, the sample size was not large enough to be certain of these conclusions.) However, scores for subjects on the Rorschach Projection Test (which measures different aspects of personality than the other personality tests administered) did show that there were significant personality differences between the relatively noise sensitive and noise insensitive subjects. Characteristics of the noise sensitive person included creativity, a high level of empathy, and a relatively high intellectual level.

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[10] Moreira, N.M. and M.E. Bryan, "Noise Annoyance Susceptibility," Journal of Sound and Vibration 21, 4 (1972), 449-462.

The study had certain weaknesses. A small sample of only 20 subjects was used and the authors acknowledge that results of a Rorschach test may be interpreted differently by different people. The study does suggest however that personality factors are one of the variables to be considered in developing an understanding of human emotional response to noise.

2.7 Research Reported by Smithsonian Science Information Exchange (SSIE).

Several of the projects found using the computerized SSIE search were of potential interest, but the one which seemed to be the most relevant was one being conducted by Singer and Glass on social and psychological reactions to stress.[11] The project is very general and includes research on behavioral and physiological effects and after-effects of exposure to various unpredictable and uncontrollable aversive events, including high-intensity noise. Research will include both laboratory and field studies on a variety of topics. Two field studies on the long-term aftereffects of noise are planned. Laboratory experiments will include studies on the influence of cognitive factors on the reduction of autonomic response and adverse aftereffects. Particular attention will be given to a subject's perceived control over the stressors.

This research should be reviewed after completion to see if the findings relate to the topic of emotional response to aircraft noise.

2.8 Considerations in Planning the Pilot Study.

After the literature search was completed, several sessions were held to discuss the development of a pilot study to investigate human emotional response to aircraft noise. Several conclusions which were reached in these sessions are discussed below.

(1) Any research technique used should allow the respondent to relate his fear and other emotional reactions toward aircraft to other concerns in his life. The various community-response surveys which have been done all suffered from the same limitation as the Tracor work. They were not able to provide data about the importance of an individual's emotional feelings about living near an airport

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[11] Singer, J.E. and D.C. Glass, Collaborative Research on Social Psychological Reactions to Stress. Division of Social Sciences, National Science Foundation, Washington, D. C. (n.d.).

when placed into perspective by relating these feelings to his other problems and concerns. For example, if a person states that he is afraid a plane might crash into his back yard, is this an intense fear, or is it a peripheral concern when compared to his fears about crime, unemployment or other problems?

(2) The research technique should be capable of eliciting a respondent's feelings about aircraft-related problems indirectly, in such a way that he is not aware of the purpose of the study until after the interview is completed. There has been some controversy about direct versus indirect techniques of acquiring data. Research techniques can be viewed along a continuum of direct to indirect. Direct techniques are those in which the respondent is told what the researcher would like to know and why (e.g., "We want to know how you feel about aircraft noise so that any problems can be corrected."). Indirect methods are those which try to elicit data about a research topic without telling the respondent what the topic is or what information about the topic is desired (e.g., a study which asks about an individual's daily activities with the unstated purpose of determining how changes in aircraft noise level will affect these activities). Some techniques fall in between on the continuum. An example is a community response survey which tells the respondent that the survey is a study of living conditions, but includes a number of specific questions about the topic of interest.

One of the disadvantages of the direct technique is that a respondent's answers may be affected once told the kinds of information sought after, in that he may express stronger emotions than he feels in an effort to influence policy, or he may tell the researcher what he thinks the researcher would like to hear rather than expressing his real opinions.

More indirect techniques also have disadvantages. An obvious one is the difficulty in interpreting the data when you have not told the respondent what you want to know. However, the indirect methods have the advantage of being less likely to guide the respondent or suggest answers to him.

Since community response surveys have been relatively direct in that they have not been able to mask their purposes well, it was felt that the pilot study should attempt more indirect techniques in which the purposes of the research would be less obvious to the respondent.

An important consideration when using indirect techniques is that dealing with the ethical issues involved when research goals require that subjects be given less than complete information. In the planning sessions it was decided that this problem would be handled by informing respondents at the time of recruitment that, because we did not want to guide their responses, we would not be able to tell them the topic under study until after our research was completed. Anyone who did not wish to participate under these conditions would be free to choose not to volunteer for the study.[12]

(3) In the sessions held to discuss the pilot study, it was suggested that, although a person might express more annoyance than he felt to a research interviewer to influence government policy, the mechanisms which a person might use to adjust to living in a noisy environment could involve denial of some feelings of annoyance. One hypothesis which was discussed was that of a person currently being exposed to aircraft noise feeling less of a reaction to it than a person who had moved away from the noisy situation. That is, a person might deny some of his annoyance while being forced to live in a noisy situation, but once he moved away from it, he might become aware of a greater level of annoyance toward aircraft noise than he had previously felt.

To examine this hypothesis, it was decided that the pilot study include three groups of respondents: those currently living near airports, those who had lived near airports in the past, and those who had never lived near airports.

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[12]Under these conditions, questions can be raised about whether people who refuse to volunteer are differect from those who do choose to participate. Probably, there are differences between the two groups, but it is difficult to determine what the differences are when ethical considerations require that subjects be restricted to volunteers.

3.0 The Tell-A-Story Technique.

3.1 Background.

The Tell-A-Story Technique is a projective test based on the theory that when a person is presented with an ambigious stimulus, such as an inkblot or a shadowy picture, and asked to make some response to this stimulus, he will draw upon his own experiences, feelings and concerns in order to do so. The technique is patterned after the Thematic Apperception Test (TAT), which has been used in the field of clinical psychology for many years. The TAT, which consists of a series of pictures around which one makes up stories, was considered for use as a method of studying emotional response to aircraft noise. However, the kinds of pictures which exist in the series are not very appropriate since they are designed to elicit responses around topics of interest to clinical psychologists, such as family relationships. But the test did seem useful as a model around which a series of pictures could be developed which would be appropriate for the research problem.

There has been some debate in the field of clinical psychology about the usefulness of projective techniques for diagnosing individual pathology, such as neurosis or psychosis. However, when these techniques are used for research purposes, on a topic unrelated to mental disturbance, this debate is of little consequence since the techniques are not used for diagnosis of illness.

A difficult problem which had to be addressed was that of determining whether the technique would validly assess the variables under study. Validation of a new technique is sometimes established by correlating it with existing techniques. But if existing techniques for measurement are poor, a new technique which improves on the existing methods will not correlate well with existing measures. Furthermore, if some of the techniques use direct methods of eliciting data and others use indirect methods, comparison becomes even more difficult.

A recent book entitled, "Attitudes and Their Measurement," discusses some of the issues surrounding the use of direct or

indirect methods and discrepancies among the various techniques. The author states that:

> "Disguised measures are often cumbersome to use and unsuitable for group administration; when they are used they often seem to generate inconsistent results; when validity checks have been imposed they often appear to be inferior to direct attitude scales. Is there then a future at all for the disguised measures? In spite of their inadequacies, the answer must be yes.
>
> "The justification for use of disguised measures was made at the beginning of the chapter. It was argued here that the role of disguised measures is to broaden the conceptual basis of attitude measurement. If 'attitude' is to have any explanatory importance it must be able to both integrate and explain a wide range of habitual behavior.... The value of disguised measures lies in their potentiality to tap other aspects of attitudinal behavior which are not tapped by more direct methods....
>
> "When normative influences (behavior) and attitudinal factors are in opposition, the relationship between attitude measures and behavior can be usefully conceptualized in terms of a series of hurdles of increasing difficulty....
>
> "The easiest hurdles are represented by measures which tap purely autonomic responses to the attitude object. Since these are least subject to conscious control, they are most likely to be elicited when influences against expression of the attitude are the strongest.... As pressures against expression decrease (or the strength of the attitude increases) attitude will be expressed in projective measures, then in direct verbal questionnaire measures, and then last of all in overt behavior. The precise ordering of responses suggested here is still speculative, since we still know little about the relationships between different disguised measures and a more accurate ordering will rest upon the results of further research. Nonetheless such a model shows that apparent discrepancies between the different types of measures could be less arbitrary than they appear at first sight."[13]

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[13]Lemon, N., Attitudes and Their Measurement. 1973, 138-140.

Another author, D. L. Varble, in discussing the current status of the Thematic Apperception Test, also alludes to the complexity of the problem of using projective techniques in a research study. Varble states:

> "Evaluating the status of an instrument like the TAT is a subjective matter, and one always has to choose the perspectus from which the judgments are to be made. In a rather curious way, the position of reviewer or evaluator is very similar to that of the subject in a clinical or research setting who is required to write stories to the various TAT cards. Indeed, reviews of this sort probably say as much about the reviewer as they do about the test being evaluated. With these limitations in mind, the present author will venture the conclusion... that the TAT has a great deal to offer as a projective instrument. There are blemishes on the record of the TAT, but there are still a large number of clinicians who feel that at least a part of the TAT is useful, and also a sizeable number of researchers who have modified the test to serve purposes of their own. Because of this popularity the TAT will not soon disappear as an entity (although it might disappear as a 'test')."[14]

The ideas proposed by these authors represent our thinking in justifying the development of a technique, based on the TAT, which indirectly elicits feelings and attitudes about aircraft noise.

3.2 Development of Stimulus Pictures.

The process for selection of the stimulus pictures used in the Tell-A-Story Technique began with a listing of ideas for scenes that might prompt the respondent to tell aircraft-related stories. Some of the ideas included pictures of aircraft flying directly over a private residence, and pictures of activities that could conceivably be interrupted by aircraft noise without actually depicting aircraft. Other ideas included scenes such as a peaceful rural countryside or a farm to provide contrast with scenes depicting noisy aircraft. Also included were ideas for pictures totally unrelated to aircraft noise, such as a picture of a non-descript face, for the purpose of de-emphasizing the study topic.

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[14]Varble, D. L., "Current Status of the TAT," Advances in Psychological Assessment 2 (1971), 233.

The list of ideas was submitted to an artist with instructions to make black and white line drawings of the scenes described. The artist prepared two different pictures for each topic. The drawings were done on 5 by 7-inch cards originally, and were then enlarged and photographed. The photographer was instructed to make the pictures blurry and indistinct, with gray backgrounds in order that they be sufficiently ambiguous in detail to encourage the respondent to project his own interpretations. The complete set of pictures is reproduced in Appendix E; the themes illustrated in each of the pictures are presented below:

THEMES OF PICTURES USED IN THE TELL-A-STORY TECHNIQUE

Identifying Code:	Topic Illustrated in Picture
A1 and B7	An outdoor scene of several people having a picnic; a man at a barbecue grill.
A2 and B1	A busy airport scene with planes taking off and landing.
A3	A congested traffic scene with a railroad train and a shopping center in the background.
A4 and B6	A blurred, indistinct face which could be viewed in a number of ways as being happy, sad, evil, malicious, etc.
A5 and B3	Two people talking over a fence (could be interpreted as a back yard or an airport) with a plane flying overhead in the background.
A6 and B8	A peaceful rural scene.
A7 and B2	A person buying a ticket at a ticket counter (could be interpreted as an airport or a bus or train station)
A8 and B4	A picture of a home (apartment in one picture, single family dwelling in other picture) with a large plane flying directly overhead.
A9 and B5	A person sitting at a desk appearing to be doing paperwork.

3.3 Pilot Study: Administration of the Tell-A-Story Technique.

The Tell-A-Story Technique was administered during the individual interview phase of the pilot study. A total of 40 respondents participated in the individual interviews, 12 males and 28 females. Of these, 17 were currently living near enough to an airport for the aircraft noise to be heard indoors and outdoors; 10 were not currently living near an airport but had lived near an airport in the past, and 13 had never lived near an airport.

The interviews were conducted at a location most convenient for the respondent, either in his/her home or at the National Bureau of Standards in Gaithersburg, Maryland. The portion of the interview in which the Tell-A-Story Technique was administered was tape recorded. During recruitment, respondents were told: (1) that this was a developmental study in which a number of techniques were being explored; (2) that the research topic would not be disclosed until the completion of the study so as to avoid guiding their responses; (3) that they would be asked to make up stories to pictures and that their stories would be tape recorded, and (4) that they would be asked to complete a questionnaire, as well as perform several other exercises, such as a word association test.

They were further instructed that the interview would take about 1 hour and that they would be paid $5 for their time. At the beginning of the interview, the tasks were again described to the respondent in somewhat more detail. Respondents were given a telephone number to call to obtain copies of the research report.

The Tell-A-Story Technique was the first exercise administered in each of the individual interviews. The interviews were conducted by two psychologists experienced in interviewing and by a research assistant who was trained and supervised by psychologists. The interviewers experimented with several different instructions for the Tell-A-Story task, such as "make a story," "put yourself into a story and tell how you feel," and "make a story and tell what people in the story are thinking and feeling." The last instruction worked best and was used in all but the first several interviews. Respondents were told that, if there were no people in the picture, they were to imagine people and tell what the people were thinking and feeling. They were assured that there were no "right" or "wrong" answers; that the data were to be used only for research purposes and not be used to make any psychological assessments or evaluations of any individual.

Pictures were presented in random order to respondents, one at a time. No time limits were placed on the task and respondents were told to take their time.

As the first few pictures were administered, the interviewer encouraged them to make more lengthy stories by using phrases such as "anything else," "can you tell me more about what that person is feeling," "what do you think that person is feeling right now," and other similar phrases. These probes usually were successful in encouraging respondents to get involved in the task. If probes did not succeed in drawing a respondent out in the first few stories, this was usually a sign that the respondent was unable or unwilling to handle the task. Most respondents handled the task very well, however, and often expressed enthusiasm and enjoyment about the stories at the end of the interview.

Efforts were made to administer the stories to as many types of people as possible including children, elderly people, and people of various socio-economic levels. We explored the possibility of obtaining an appropriately stratified random sample but, due to time constraints and contracting difficulties, we were forced to rely on staff suggestions for possible willing subjects.

3.4 Content Analysis of Stories Elicited Using Tell-A-Story Technique.

3.4.1 Description of Content Analysis.

Content Analysis is a technique for categorizing and quantifying data which exist in the form of written material such as stories or responses to open ended questions on questionnaires. A content analysis usually includes establishing categories into which data will be coded; determining the unit of response (e.g., one paragraph, one story); determining the written material which will make up the sample and coding it according to the categories established; determining inter-coder reliability by having more than one person code the same materials, and quantifying the results in some way.

3.4.2 Development of Content Analysis for Tell-A-Story Technique.

In planning the Content Analysis for data from the Tell-A-Story Technique, the idea of treating the total set of stories from an individual respondent as one unit of data was considered. This idea was rejected when it became apparent that not all respondents had recieved the same number of stimulus cards. Some respondents were administered only the A set of cards, some only the B set of cards, some both A and B sets, and some combinations of the A and B sets. (Lack of standardization of interview procedures in the beginning

phases of the interviewing created this problem.) Since both the A and B sets of data included stories made up around the same themes it was assumed that they could be treated as comparable (the artist drew two versions of pictures for each theme; one set of pictures was labelled the A set and the other the B set).[15]

We decided that each story would be regarded as one unit of data. Stories would be coded for the presence or absence of each category topic within the story. The "sample" of material to be coded for each respondent would be the eight stories making up one complete set of themes (either the A set of pictures or the B set).[16] If a respondent had made up stories to both A and B sets of pictures, data from only one of the two sets (randomly chosen) were to be coded. If one story was missing from the set, the data would be accepted as complete; if more than one story was missing, the interview would be exlcuded from the data.

3.4.3 Categories Used In Content Analysis.

Categories for coding the data from the stories were developed by setting up a few of the categories which seemed obvious and trying them out on some of the stories. As coding progressed, other categories seemed to be useful and were added. After working with about 10 of the interviews, a complete list of categories was established. A written definition of each category was prepared. These definitions, to be presented in the following sections, were used by two people to code the data. A category-by-category correlation of agreement between these two people is presented in Section 3.4.4.

The coding form was designed so that identifying information about each respondent such as age, sex, whether or not he had lived near an airport, etc., could be included on the form. However, none of the identifying information was filled in until after coding was completed so that coders had no information about the respondent when coding his stories.

In the following sections, the categories used by coders are described.

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[15]This assumption should be tested in future studies as the Tell-A-Story Technique is further developed.

[16]Picture A3, the congested traffic scene, was excluded from the analysis, since it was not administered to many of the respondents.

CATEGORIES

Positive and Negative Emotional Response

Any emotional responses mentioned in the stories were coded in one of the two above categories, as well as in any of the more specific categories if appropriate:

Positive emotional response included responses such as pleasant, nice, happy, relaxed, romantic, warm. A story involving any generalized good feelings was coded here.

Negative emotional response included fear and anger responses (which were also coded in other categories) and other negative feelings such as sad, lonely. A story with generalized negative feelings was coded here.

Fear/Anxiety

This category included specific mention of fear or anxiety; also stories with anxiety themes such as "hard to concentrate," "must hurry and rush around," "quite concerned about...." It included excitement if the word was used in the sense of anxious or stirred up; if excitement seemed to be used in the sense of a happy, pleasurable feeling, it was not included. Fear and anxiety themes which were specifically related to aircraft themes were also coded in other categories in addition to this one.

Fear/Anxiety with Aircraft Response and Fear/Anxiety of Aircraft Response

These two categories were used to make a distinction between stories in which both fear and aircraft were mentioned but NOT linked together and those stories in which the fear or anxiety was specifically of aircraft.

Fear/Anxiety With Aircraft Response was used if both fear themes and mention of aircraft occurred but the theme of the story did not link these two responses together. For example, a story in which a person was at an airport and was anxious because the ticket agent was taking too long to write out the ticket would fall into this category.

Fear/Anxiety of Aircraft Response covered stories in which there was specific mention of fear or anxiety of aircraft. It included fear of the aircraft crashing into an apartment, fear of the plane crashing, fear of flying in the aircraft and other fear of aircraft. This category could have been further subdivided into those fears having to do with the plane crashing into one's residence or crashing while a passenger on the aircraft. This subdivision was not made in this analysis because of the small number of subjects.

Plane Flying Too Low But No Mention of Fear

This category was used when there was reference to a plane flying too low, being about to crash or being in danger without specific mention of anyone feeling fear of this situation.

Anger/Annoyance

This category included specific mention of anger (being mad, annoyed, pissed off, and so forth); it included "being bothered" if used in the sense of being annoyed (e.g., "Those planes are bothering him so much that he is going to move out of the neighborhood"). Anger and annoyance themes related to aircraft were also coded in other categories.

Anger/Annoyance WITH Aircraft Response and
Anger/Annoyance OF Aircraft Response

As with fear responses, a distinction was made between anger/annoyance with aircraft responses in which the annoyance was not specifically linked to aircraft (e.g., "The two people are mad at each other. There is a plane flying overhead.") and anger/annoyance of aircraft responses in which the anger or annoyance was directed toward the aircraft (e.g., "He is annoyed by the noise of the plane.").

Aircraft/Airport Mentioned

This category was used to count the number of stories in which the words aircraft, airport, airplane and other similar words were used.

Plane As Polluter

This category was used to record the number of stories in which specific mention of a plane causing pollution occurred.

Plane As Transportation

This category provided data on the extent to which respondents focused on aircraft as a form of transportation rather than emphasizing noise, fear or other components of response to aircraft. The category was used for a story in which the characters in the story used a plane to travel or wished they could be taking a trip on a plane. The category did not include responses in which there was a physical description of planes taking off and landing without mention of a person travelling or wishing to travel on the plane.

Aircraft Noise Disturbs Sleep

This category covered responses in which there was specific mention of sleep being affected by aircraft noise.

Aircraft Noise Affects Concentration

This category was used for responses in which there was specific mention of aircraft noise disturbing one's thoughts or concentration.

Aircraft Noise Response

This category provided a count of the number of stories in which there was mention of planes in the picture making noise. These responses were also coded in the broader category of "aircraft/airport mentioned" and, if there was mention of the noise being annoying, disturbing sleep and so forth, the response was coded in the other appropriate categories as well.

Non-Aircraft Noise Response

This category included all noise responses in which the noise was attributed to sources other than aircraft.

Self In Picture

This category provided data on the extent to which a respondent clearly indicated that he was projecting himself into a story. It was used only when a respondent indicated that he was in the story through use of words such as "that's me," "that's like me," "I..." and so forth. If the story indicated that a family member, a friend, or any other person was in the story, but did not include the respondent, if was not coded in this category.

Adaptation Response

This category included stories which had themes of people getting used to airplanes, adapting to the noise, not being bothered since they had become accustomed to the noise and other specific mention of adaptation to the aircraft situation only.

3.4.4 Between-Coder Reliability

To check for coder reliability, a random sample of 26 of the interviews was coded by two people, one a psychologist and the other a professional without specific training in psychology. The following tables show a comparison of the results of coding on a category-by-category basis.

Table 3.4.4.1

In the following categories there was total agreement between the two judges on all entries (1.0 correlation):

Category	Number of Interviews In Which This Response Occurred One or More Times
Aircraft/Airport Mentioned	26
A-7/B-2 Interpreted as Airport	6
A-7/B-2 Interpreted as Train/Bus	6
A-7/B-2 Interpreted as Non-Transportation Response	7
Planes Flying Too Low	6
Plane As Polluter	4
Aircraft Noise Disturbs Sleep	2

In the first group of categories presented in Table 3.4.4.1, there was total agreement between the two judges on all responses. These categories were those which dealt with whether pictures A-7 and B-2 were interpreted by respondents as airports, train or bus stations or non-transportation settings; whether airplanes or aircraft were mentioned in the pictures; whether planes as polluters were included in the themes of the stories; whether there were references to aircraft noises disturbing sleep, and whether there were references to planes flying too low.

Table 3.4.4.2

In the following categories there was substantial (but not total) agreement between the two judges on entries:

Category	No. of Interviews In Which This Response Occurred*
Negative Emotional Response	25
Positive Emotional Response	25
Plane as Transportation	18
Fear/Anxiety	18

*As coded by at least one of the two coders

Table 3.4.4.3

In the following categories there was substantial (and sometimes almost total) agreement between judges, but correlations were not calculated because of the relatively small number of interviews in which these responses appeared:

Category	No. of Interviews in Which This Response Occurred*	No. of Individual Responses in Which Judges Disagreed
Aircraft Noise Mentioned	14	3
Anger/Annoyance of Aircraft	14	3
Anger/Annoyance	13	3
Fear/Anxiety of Aircraft	10	1
Fear/Anxiety with Aircraft Response	7	1
Separation Themes	6	1
Anger/Annoyance with Aircraft Response	5	2
Aircraft Noise Affects Concentration	4	1
Non-Aircraft Noise Mentioned	3	1

*As coded by at least one of the two coders

In the remaining categories (presented in Tables 3.4.4.2 and 3.4.4.3), there was some disagreement between the coders. Although some of this disagreement reflects real differences, coding errors may also be included in this count. The coding of these interviews manually is a laborious task and some themes may have been missed by one coder but not the other. The greatest real differences in coding seemed to occur in the categories involving emotional responses. Coding difficulties occurred more often on the non-aircraft related pictures, particularly those with the distorted face. This picture aroused a great deal of

emotional response, but the responses were often ambivalent, involving combinations of emotions which could be categorized differently by different judges. In order to obtain higher reliability in coding, it may be necessary to eliminate or change some pictures in the series.

Coding reliability could be improved by having several judges reach agreement on the responses which caused coding problems. A coding manual could be developed which would include a number of specific examples, with explanations of why judges decided that the response did or did not fall into a particular category. This step was not taken in the pilot study, since funds and manpower were not available.

For purposes of the data analysis, the coding done by the judge who tended toward a broader interpretation of the data was used.[17] This decision was made because this was a pilot study and it was felt that until agreement could be reached on what should be included, the broader rather than narrower interpretation should be used.

3.5 Results.

3.5.1 Abbreviations Used in This Report.

Results are presented for respondents according to whether they were now living near an airport, had lived near an airport in the past or had never lived near an airport. Rather than repeat these phrases over many times, the abbreviations presented below have been used in the text and in some of the tables:

Presently Near Airport. Describes data (in terms of either responses or respondents) from respondents who were currently living near an airport.

Past Near Airport. Describes data from respondents who had lived near an airport sometime in the past, but no longer were near enough to an airport to be exposed to aircraft noise.

Never Near Airport. Describes data from respondents who stated that they had never lived near an airport.

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[17]Interestingly, this judge was the professional who was not a psychologist.

3.5.2 Some Points to Keep in Mind in Interpreting These Data.

In interpreting the results from the content analysis of respondents's stories, the reader is cautioned to keep the following points in mind:

(1) The number of respondents was very small, and there were not equal numbers of respondents in each category. Results should be viewed as indications or trends which should be validated in larger studies.

(2) The respondents were NOT randomly chosen. Respondents were recruited informally through "networks" of people who knew each other. Since people tend to reject some types of people and accept other types when forming friendships, this group of respondents may have been more homogeneous than a random sample.

(3) Percentages were calculated for some of the data to provide a means of making comparisons between groups of unequal size. Some of these percentages are based on extremely small numbers, however. The reader should look at the number of respondents upon which each percentage is based when reading data tables. In presenting results, distinctions were made between number of times a particular response was given and number of respondents giving a particular response. Data based on "respondents" means that number of respondents which gave one or more responses for the category (e.g., 16 respondents had one or more responses categorized as "annoyance of aircraft" in their stories). Data based upon "responses" represent the total number of responses which occurred for that category (e.g., a total of 19 responses occurred for the category of "annoyance of aircraft").

(4) In interpreting results based on the three categories, (Presently Near Airport, Past Near Airport, Never Near Airport) the reader should realize that these categories are based upon self-reporting. A respondent's subjective estimate of whether or not he had ever lived near an airport was accepted as the basis for determining the appropriate category in which to place him. There may be a difference among the groups into which a person would be placed, if noise measurements were made, and the group into which he places himself when he is asked whether he perceives himself as having lived near an airport. For example, a person may have lived close enough to an airport to be included in a sample based on noise measurement, but if he is not bothered by the noise, he may not feel that he has lived near an airport.

3.5.3 Description of Respondents Upon Which Data Are Based.

Of the 40 respondents interviewed, 17 were currently living near an airport (42.5 percent of the total), 10 had lived near an airport in the past but no longer were exposed to aircraft noise (25 percent of the total) and 13 had never lived near an airport (32.5 percent of the total).

The group of respondents was weighted heavily in favor of females - a ratio of 7:3. A balanced ratio of 5:5 would have been more desirable and is recommended in future studies.

Table 3.5.3.1 Respondents Who Participated

	Males		Females		Total	
	#	%	#	%	#	%
Presently Near Airport	7		10		17	42.5
Past Near Airport	1		9		10	25
Never Near Airport	4		9		13	32.5
TOTAL	12	30	28	70	40	100

Respondents ranged in age from 6 to 71 years. Within the total group, respondents were about evenly divided between those under 30 and those 30 or more years of age (53 percent, 47 percent). Females were divided into two equal groups with exactly 50 percent of females under 30 and the other half 30 or older. Males were also about evenly divided (58 percent, 42 percent).

Table 3.5.3.2 Age Range of Respondents

	Under 30		30 or Older	
	#	%	#	%
Presently Near Airport (N=17)	6	36	11	64
Past Near Airport (N=10)	8	80	2	20
Never Near Airport (N=13)	10	77	3	23
Male (N=12)	7	58	5	42
Female (N=28)	14	50	14	50
TOTAL (N=40)	21	53	19	47

The age range of respondents living near and away from airports was not as well balanced, however. There were many more respondents 30 years or older (64 percent) in the group currently living near an airport than in either of the groups of people who had lived near an airport in the past (20 percent) or had never lived near an airport (23 percent). The relationship between age and other variables in this study is not known. The composition of the respondent group by age should be kept in mind by the reader as he interprets data in this report which might be affected by this variable.

Of the total group of respondents, half had completed high school,[18] and half had at least some college or were college graduates. Slightly

[18]Respondents under 18 who had not yet completed high school were included in this category since they are potential high school graduates rather than dropouts.

more of the females than males had attended college. There were somewhat fewer respondents who had attended college in the "Past Near Airport" group than in the other two groups (Presently Near Airport, Never Near Airport), but there were no major differences in educational level among the various categories of respondents.

3.5.4 Aircraft-Related Responses Among Various Categories of Respondents.

One of the hypotheses which was discussed when this project was designed was that the level of annoyance toward aircraft might be greater among people who have lived near airports in the past but have moved away, than among people currently living near airports. It was hypothesized that people who are forced to live in a high aircraft-noise situation might deny some of their negative feelings to make their current situation more tolerable. Once a person leaves the situation, he might then become more aware of his previously denied feelings.

Some evidence in support of this hypothesis is found in the results presented in Table 3.5.4.1. In some of the categories dealing with negative feelings about aircraft, the percentages for respondents who had lived near airports in the past were greater than for respondents who were currently living near airports, or respondents who had never lived near airports. The percentage of respondents who expressed anger or annoyance of aircraft in their stories was greatest among Past Near Airport respondents (70 percent); anger toward aircraft was expressed in the stories by fewer of the Presently Near Airport respondents (47 percent), and by very few of the Never Near Airport respondents (7 percent).[19] Of the Past Near Airport respondents 40 percent had responses in which planes were presented as polluters, while only 1 percent of Presently Near Airport respondents and 7 percent of Never Near Airport respondents had this response in any of their stories.

In the category Adaptation Responses (which included only adaptation to aircraft-related problems), Never Near Airport respondents were most likely to mention the theme of adapting

[19]Past Near Airport respondents more often had themes of Planes as Transportation in their stories (90 percent) than did respondents in the other two groups (52 percent, 61 percent). Since seeing a plane as a form of transportation is not an annoyance response, these results are not offered as evidence of the hypothesis being discussed. If these findings are replicated in other studies, efforts should be made to find out what does account for them.

Table 3.5.4.1 Number and Percentage of Respondents Whose Stories Included Themes In Various Aircraft Related Categories.

Category	Now Near Airport (N=17)		Past Near Airport (N=10)		Never Near Airport (N=13)	
	#	%	#	%	#	%
Aircraft/Airport Mentioned	17	100	10	100	13	100
Plane As Transportation	9	52	9	90	8	61
Aircraft Noise Mentioned	8	47	6	60	7	53
Anger/Annoyance of Aircraft	8	47	7	70	1	7
Fear/Anxiety of Aircraft	6	35	4	40	3	23
Fear/Anxiety With Aircraft Response	4	23	3	30	3	23
Anger/Annoyance With Aircraft Response	3	17	0	0	3	23
Aircraft Noise Disturbs Sleep	2	11	1	10	1	7
Aircraft Noise Affects Concentration	2	11	1	10	1	7
Plane as Polluter	1	1	4	40	1	7
Adaptation Response	2	11	0	0	4	30

to the noises in their stories (30 percent). Presently Near Airport respondents were less likely to include this theme (11 percent), and respondents who had lived near airports in the past but had left the situation, NEVER mentioned the possibility of adapting to the noise in any of their stories. The percentages are based on very small numbers of respondents, but the trend is interesting. It indicates that experience living near an airport seems to decrease one's belief in the possibility of learning to live with the situation.

Any further studies on the present research topic should consider the patterns of differences evidenced among the three groups of respondents in the pilot study. In the studies conducted previously, respondents were grouped according to their current relative distance to an airport. Most of these studies excluded control groups (respondents living away from airports) or, if control groups were used, the respondents were not categorized according to previous exposure to aircraft noise. In order to obtain valid results, respondents should be grouped in all three categories (Presently Near Airport, Past Near Airport, Never Near Airpot) in future studies.

In any longitudinal research performed to study changes over time in people living near airports, it is important to follow-up respondents who move out of the area not only to find out why they moved, but also to administer the same study instruments to them as the experimental group, so that comparisons can be made between people who stay and those who move away.

Table 3.5.4.2 RELATIVE FREQUENCY OF OCCURRENCE OF VARIOUS AIRCRAFT-RELATED CATEGORIES

	Respondents (N=40)		Responses (N=274)	
	#	% of Respondents	#	% of Respondents
Aircraft/Airport Mentioned	40	100	122	45
Plane as Transportation	26	65	42	15
Aircraft Noise Mentioned	21	53	26	9
Anger of Aircraft	16	40	19	6
Fear/Anxiety of Aircraft	13	33	15	6
Fear/Anxiety with AC Response	10	25	12	4
Plane as Polluter	6	15	6	3
Plane Flying Too Low - No Mention of Fear	6	15	6	3
Adaptation Response	6	15	7	3
Anger with Aircraft Response	6	15	8	3
Aircraft Noise Disturbs Sleep	4	10	4	1
Aircraft Noise Affects Concentration	4	10	4	1
Non-Aircraft Noise Mentioned	3	7	3	1
TOTAL			274	100

Another way of looking at the data just presented is to examine the overall results in terms of themes most often mentioned by respondents and themes occurring most frequently in terms of overall number of responses. It can be seen from the table above that all 40 respondents

mentioned aircraft or airports in at least one of their stories. About two-thirds of the respondents included the theme of plane as a form of transportation at least once in their stories.

Only about half of the respondents (53 percent) specifically mentioned aircraft noise anywhere in their stories. This finding is interesting since, as the reader will note by looking at the stimulus pictures in Appendix E, aircraft were included in almost half of the pictures and sometimes were a prominent part of the scene. Yet 47 percent of the respondents were able to make up eight stories each around these pictures without mentioning aircraft noise. More respondents had stories with themes of planes as transportation (65 percent of respondents) than with themes of aircraft noise (53 percent). This finding shows the importance of relating feelings about aircraft noise to other concerns in the person's life. Studies which focus only on aircraft noise do not allow a person to indicate how important this problem is to him when compared with other aspects of his life.

The theme of anger of aircraft was expressed by 4 out of every 10 respondents in at least one story. It can be seen from comparing the number of respondents (16) with the number of responses (19) that, on the average, respondents mentioned anger of aircraft about once (1.1 responses per respondent) in the series of eight stories.

One-third of the respondents had at least one story which specifically included the theme of fear of aircraft in the story.[20] While 15 percent of the respondents had stories in which planes in the picture were described as flying too low, there was no specific mention of any character in the story feeling fear of the situation.

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[20]It should be noted that when respondents were asked the question: "When you hear the aircraft fly overhead, do you ever feel there is any danger they might crash nearby?" in the Heathrow studies, 30 percent of respondents in the 1967 survey stated that they felt fear. This comparison of results from a questionnaire which asks a direct question and a projective technique which elicits data indirectly shows that both techniques got about the same results.

For anger and, to a lesser extent, fear, it was more common for the response to relate specifically to aircraft than merely occur in the same story with aircraft. Anger of aircraft themes were expressed by 40 percent of the respondents as compared to 15 percent of respondents who expressed anger with aircraft in their responses. The comparable figures for fear were 33 percent and 25 percent.

The theme of planes as a source of pollution was included by 15 percent of respondents; 10 percent of respondents included themes of aircraft noise disturbing sleep and 10 percent had themes of aircraft noise disturbing concentration. One of the pictures in the series was designed to elicit themes of concentration being disturbed (the picture of a person sitting at a desk seeming to be concentrating), but there were no pictures in the series of people sleeping. A picture of a person sleeping could be added to see if the frequency of sleep disturbance themes is affected.

Some additional analysis of data from the Tell-A-Story Technique is presented in Appendix D. These analyses include the relationship between total emotionality scores and specific emotional responses; extent of projection of self into pictures; interpretation of ambiguity in the pictures, and sex differences in responses.

Sample stories made up by respondents to stimulus pictures are presented in Appendix G. The reader is urged to read through as many of these stories as possible to pick up the flavor of the kinds of data which were obtained using the Tell-A-Story Technique.

3.6 Advantages and Disadvantages of the Tell-A-Story Technique.

The conclusions we have reached about the advantages and disadvantages of the Tell-A-Story Technique are described below.

Advantages

This technique provides a way of determining how important aircraft-related concerns are to a person in comparison with other problems in his life. As was shown in Table 3.5.4.2 almost half of respondents did not mention aircraft noise at any time in their stories, although pictures of aircraft appeared in a number of the stimulus pictures. The intuitive feeling of the interviewers who administered the Tell-A-Story Technique was that there was a wide variation in the extent to which people seemed concerned about aircraft-related problems, and this variation was reflected in their stories. Some respondents seemed willing to talk about almost nothing except aircraft-related problems. Other people, even among some of the respondents living directly in the flight path of an airport, did not seem at all interested in talking about aircraft-related topics.

This technique provides an indirect way for determining emotional response to aircraft which reduces the possibility of guiding people's responses by suggesting to them the topic of interest. Although some of the respondents made comments about our interest in airplanes, most completed the interview without seeming to have much idea about the research topic. Because the task of telling stories interests most people in such a way that they become very involved in what they are doing, there seemed to be less interest in what the research problem was than might be the case if an interviewer were to come to the door and ask direct questions. In order to foster an attitude of involvement in the task among respondents, it is important that they have a feeling of trust in the interviewer and do not feel that anyone is "putting something over on them." This feeling can be encouraged by being honest with respondents about the fact that there are some aspects of the project which cannot be discussed with them until after the study is completed. Given a way to learn the results of the study when complete (e.g., a telephone number), they seemed willing to accept less then complete information at the time that the study was conducted.

This technique may avoid some of the response bias which occurs with direct questionning. Cultural pressures, for example, which encourage males to be less open about emotional feelings than females,

may not have as great an influence when this technique is used as they do with techniques using direct questionning. Further research with the Tell-A-Story Technique is needed, however, before this conclusion can be reached with confidence.

Disadvantages

The disadvantages associated with the Tell-A-Story Technique are those of administration and data analysis. Highly skilled interviewers and cooperative respondents are most necessary. Both the transcription of the interviews and their coding for content analysis are tedious tasks. Coding must be done by people with sufficient education and training to make judgments on placement of data in established categories. It is possible that data from a large study could be handled using computerized techniques; anyone interested in pursuing computerized content analysis should check the references suggested in the Handbook of Social Psychology in its chapter on Content Analysis.[21]

The question of validation of the Tell-A-Story Technique is a complex one as was discussed in 3.1. The issues raised could be viewed as disadvantageous or challenging.

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[21] Holsti, O., Handbook of Social Psychology, Volume II. 593-673.

4.0 Conclusions and Recommendations

4.1 Limitations of This Study.

Since this was a pilot study, it had certain limitations, including the following:

(1) The number of respondents who participated in the study was small;

(2) Respondents were not selected from a random sample;

(3) Interviewing procedures were not standardized, since experimentation continued throughout the interviewing phase of the project, and

(4) In performing the content analysis of the data from the Tell-A-Story Technique, an assumption was made that the two sets of stimulus pictures (which are similar but not identical) could be treated interchangeably. This assumption must be tested in future work.

4.2 Conclusions.

Based upon the results of the literature search and the pilot study, several conclusions can be made.

(1) The Tell-A-Story Technique tested in the pilot study seems promising as a method for indirectly assessing emotional reactions to aircraft noise. This conclusion is based upon the advantages of the Technique discussed in Section 3.5.

(2) The data in the pilot study show that negative emotional response was greater among those people who had lived near airports in the past. The reason for this finding remains speculative, although one hypothesis suggests that people adapt to noise when they are forced to live with it by denying some of their negative feelings.

(3) Data from the literature search support the conclusion that human emotional response to noise cannot be predicted well if noise exposure is used as the sole criterion. In Section 2.0 a number of studies in which this conclusion was reached are reported.

(4) There seems to be wide variation in the extent to which different people are bothered by aircraft noise. In the pilot study it was found that almost one-half of respondents did not include aircraft noise in any of the stories they told in response to a series of pictures, many of which were aircraft-related. Interviewers who administered the Tell-A-Story Technique reported their subjective feelings that there was wide variation in the extent to which respondents focused on aircraft-related problems in the interviews, even among respondents living near airports.

(5) Emotionality may be one of the variables which account for differences in response by different people to noise of a particular level. Respondents in the pilot study varied in the extent to which stimulus pictures, which suggested aircraft noise, elicited negative emotional reactions from them. The number of respondents was not large enough to systematically test hypotheses concerning emotionality as a variable, but the pilot study indicated that this variable seems important enough to warrant further investigation.

4.3 Recommendations

(1) The Tell-A-Story Technique needs to be further developed for use as a research tool for laboratory and field studies, particularly in situations where it is not feasible to administer questionnaires. Further development of the test should include the following steps:

- Experimentation with the stimulus pictures to determine the combinations of pictures which produce the most useful results;

- Categories to be used in the content analysis of data from the stories needs to be defined more completely by having the same stories coded by a number of different judges with differences in interpretation of categories possibly resolved by having the judges discuss these differences to reach decisions on how the material is to be coded.

- Test the Tell-A-Story Technique in a variety of situations to determine its applicability, including: laboratory settings with paid versus unpaid subjects; home interviews in which advance contact is made to schedule interviews; home interviews in which homes are chosen randomly with no advance scheduling of appointments; home interviews in which participants are paid; home interviews with unpaid participants and home interviews in which non-monetary forms of payment are used.

- Examine the feasibility of using computerized techniques for performing content analysis of data from the stories.

- Investigate method for validating the Technique in accordance with the standards for psychological tests recommended by the American Psychological Association.[22]

(2) In future studies of community response to aircraft noise, consideration should be given to including various categories of respondents including: people currently living near an airport, people who have lived near an airport in the past but no longer do, and people who have never lived near an airport.

(3) Future work should give greater emphasis to the study of personality/emotionality variables as components in determining human response to noise. Although these variables are more difficult to study (than the variable of noise level, which can more easily be measured), the evidence from both the literature search and the pilot study suggests that these variables must be taken into account to understand and predict response to aircraft noise.

(4) Finally, further investigation should be made of the hypothesis that a person adapts to a noisy environment

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[22]These standards can be found in the publication, Standards for Educational and Psychological Tests and Manuals, prepared by a joint committee of the American Psychological Association, The American Educational Research Association and the National Council on Measurement in Education. American Psychological Association: 1966.

by denying negative emotional feelings. Some questions which could be investigated include: what are the differences between people who deny their annoyance and other emotional feelings and those who do not; are people who deny their feelings of annoyance more likely to develop psychosomatic symptoms in response to intrusive noise than other people, and what are the long-term effects on people who deny negative emotional feelings toward aircraft noise.

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APPENDIX A

GROUP INTERVIEWS

Purpose. Group interviews were conducted to determine the usefulness of this technique for studying emotionality in response to aircraft noise and to get information from which research hypotheses might be formulated.

Methodology. Two group interviews were conducted, one with respondents living directly in a flight path (designated as the First Interview), and the other with respondents who were not living near an airport but were exposed to other urban noise (designated as the Second Interview). The First Interview group was composed of 5 students, all white males around 20 years of age. The Second Interview group was made up of 7 urban black respondents, 6 females and 1 male, in their early 20's, who were exposed to traffic noise and other noises associated with a congested urban environment. One of the respondents had lived near an airport in the past; the others had never lived near an airport. The interviews with both groups of respondents lasted about 2 hours and were tape recorded. Respondents were paid $5 each to participate in the interviews.

Respondents were told that they were participating in developmental interviews from which a more structured research study would be designed. They were asked to talk about their feelings and reactions to noise of all types. The interviewer asked few direct questions but summarized what respondents were saying and encouraged respondents to talk in more detail when they brought up relevant topics such as aircraft noise.

Results. Some of the themes which developed in these interviews included the following:

> Sound Versus Noise - A distinction was made by some respondents between a sound, which involves the perception of a stimulus, and a noise, in which the sound is interpreted as unpleasant, intrusive or annoying. As one respondent stated; when she was invited to a party next door, she enjoyed the sounds people were making. But when she was not invited, the sounds of the party were interpreted as annoying noise. In aircraft noise research, this distinction must be taken into account. An airplane makes a sound which can be measured, but annoyance is a psychological reaction which involves an interpretation of the stimulus by a human subject. As has already been

discussed in Sections 2.0 and 4.3, a number of studies have shown that estimation of annoyance using noise exposure as the sole predictor is poor. These results are not surprising when one considers the complexities involved when a human perceives a sound but includes many variables in determining whether or not that sound is to be interpreted as an annoying noise.

Positive Aspects of Noise - In both group interviews, but particularly in the Second Interview, there was discussion of background noises as being reassuring evidence of life, of people being around, of people feeling alive, even when the noise is not pleasant. These respondents reacted to sounds in the urban environment as noise, in the sense that these sounds were intrusive stimuli, but found the presence of the noise reassuring, at least some of the time. In the Second Interview one respondent said: "It's an association thing because you always equate total stillness with calamity." These results do NOT suggest that people enjoy aircraft noise in the usual sense, but suggest the complexities which must be taken into account in interpreting psychological response to noise. One respondent did talk about the positive fascination with aircraft which he felt when he first moved near National Airport. He said: "I'm from a very rural area...and I've never been exposed to an excessive amount of airplanes flying over. So the first couple of days I was here I was fascinated...I never found them irritating at all. I was sort of engrossed otherwise. And marveled at how the patterns were always so perfect and they always came within a few feet of one another. It's marvelous. But after that they started, well, unnerving me as much as anyone else, I guess."

Effects of a Person's Perceived Ability to Control Noise on Reactions - Results from the group interviews suggest that the extent to which a person feels he can control an annoying noise may be a factor in influencing both his interpretation of the sound and his reaction to it. A dialogue in the Second Interview touched on this point:

> Respondent A. "Well, the thing is, in Washington, the airport's there, they can only fly up and down the river because there's a restricted air space and the river is the only place they can fly. And we're right near to the

river, so we get the planes... You learn to put up with it or you learn to listen a little more attentively...."

Respondent B. "It doesn't bother me at all. I've gotten used to it."

Respondent C. "Yeah, I never pay any attention. The only kind of noise that bothers me is things that can be stopped. Like the noise, that humming right now. Whatever it is, the clock or something. It doesn't bother me like somebody tapping a pencil or doing something that they could stop. That sort of thing. The planes have to fly in and out and you know you can hear them."

In individual interviews in which the Tell-A-Story Technique was used, a similar kind of reaction was sometimes observed with respondents living in flight paths of airports. Respondents would state that the planes did not bother them because there was nothing they could do about the planes. However, noisy neighbors did bother them because the neighbors could be quieter if they wanted to be. These results support the hypothesis that expressed level of annoyance may increase among respondents who have lived near airports but have moved away, since a person may deny his annoyance while being in a situation over which he feels he has no control. But after he no longer must live in the situation, he may become aware of negative emotional feelings. There are two components involved in this hypothesis: The use of denial defenses in dealing with intrusive noise is assumed; and, it is also hypothesized that there is a relationship between feeling of control over the noise and reactions to it.

Fear in Response to Noise - Respondents in the Second Interview did not focus much on fear reactions to noise, but those in the First Interview did talk about several aspects of fear. One respondent felt that fear of a noise was not as strong when the noise could be identified. Another respondent felt that if a person is comfortable in his environment, he will be less frightened. This respondent stated that when he heard a robber entering his home, he didn't feel frightened. But in a strange situation, while he was camping, slight noises scared him. These respondents were touching on a number of components of fear. In the robbery situation the person may have been denying feelings of fear by focusing on the comfort of being in familiar surroundings. But this respondent raised a point which

has been discussed by the experimental psychologist, D. O. Hebb.[23] Hebb states that it has been shown through animal studies that, in many animals, the source of fear comes from the strangeness of the situation. Harlow's studies[24] with animals have also shown that monkeys showed more fear when away from the surrogate mother with whom they were raised, than when his surrogate mother was present.

None of the respondents in either groups interviewed acknowledged feeling any fear of planes crashing into buildings in their neighborhoods. But one respondent did talk about his feelings on the powerfulness of the plane. This person said: "...I know I don't feel fear. If something like a plane crashed into a building, it's just too far for me to even visualize. When I'm sitting in a building and a plane will pass overhead and shake the building like that, I'm much more impressed with the power of the whole situation. I oftentimes find that I, you know, I get a kind of internal shudder as it passes over, and I know that's not because I'm fearful that it's going to crash, just so much that I guess you are just, more in awe. You are awed by the power of this, you know, this passing overhead and that it's your little world out there."

Another respondent talked about listening for the kind of sound which might indicate that a plane was going to crash. This person said: "I know what to expect when I start to hear this real loud whining coming this way. Then I could hit the deck. That's because I know what to expect." These remarks suggest the hypothesis that there may be two components involved in fear reactions: (1) a rational fear based on listening for a sound which signals danger, and (2) an irrational fear in which a person projects his internal fears onto the aircraft.

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[23]Hebb, D. O., "On the Nature of Fear," Psychological Review 53 (1946), 250-275.

[24]Harlow, H. F. and R. R. Zimmerman, "Affectional Responses in the Infant Monkey," Science 130 (1959), 421.

APPENDIX B

WORD ASSOCIATION TASK

Purpose. The Word Association Task was conducted to determine whether this technique would be useful in obtaining information about emotional response to noise from respondents when asked for their associations to words related to the research topic.

Methodology. The Word Association Task was added to the interviewing process after the first few interviews had been completed, and therefore was performed by only 35 of the 40 respondents. The Word Association Task was administered after the respondents had completed the Tell-A-Story Technique and the Self-Evaluation Questionnaire (described in Appendix C). Respondents were asked for their associations to the words "chair," "scary," and "noisy." The word "chair" was included as a neutral word, unrelated to the research topic. The words "scary" and "noisy" were chosen to examine: (a) if they would elicit aircraft-related associations, and (b) what, if any, differences would there be in the kinds of associations among the different categories of respondents. These words were preferred over other more formal-sounding words, such as "fear" and "noise," because "scary" and "noisy" were thought to be more vivid and emotional in tone.

At the beginning of the exercise, each respondent was asked to read the instructions at the top of each page. (The forms used for the Word Association Task are presented in Appendix F.) For each of the three words in the Word Association Task, the respondent was given 90 seconds in which to write his associations. Almost all respondents were able to complete the task without difficulty. Only one elderly respondent seemed unable to understand what was required. She wrote out sentences in response to each word rather than individual word associations.

Results. The greatest percentages of aircraft-related responses occurred among the group of people currently living near airports. Of this group, 70 percent associated the word "plane" to the stimulus word "noisy," as compared to 60 percent of the group of respondents who had lived near airports in the past, and 50 percent of the group of respondents who had never lived near airports. The word "plane" was associated to the stimulus word "scary" by only 3 respondents, all of whom were currently living near airports.

NUMBER AND PERCENTAGES OF VARIOUS RESPONSES ON WORD ASSOCIATION TASK, PRESENTED ACCORDING TO EXPERIENCE WITH LIVING NEAR AIRPORTS

	Now Near Airport (N=17)		Past Near Airport (N=10)		Never Near Airport (N=8)		Total All Respondents (N=35)	
	#	%	#	%	#	%	#	%
Association:								
PLANE to stimulus word SCARY	3	17%	0	0%	0	0%	3	18%
NOISY to stimulus word SCARY	2	11%	1	10%	1	12%	4	11%
PLANE to stimulus word NOISY	12	70%	6	60%	4	50%	22	62%

These differences in percentages, while not very large, do give some indications of the trend which seemed to be occurring in the data. These results contrast with those on the Tell-A-Story Task, in which respondents who had once lived near airports, but had moved away, often had the highest percentages of aircraft related responses in their stories. It may be that in the Tell-A-Story Task a person draws upon all of his life experiences in order to provide the material necessary to create a number of stories, while in the Word Association Task he taps only those thoughts which reflect his immediate, present concerns. This hypothesis seems logical if one considers the differences in the types of tasks. The Word Association Task asks the respondent to instantaneously respond with what he is thinking; while the Tell-A-Story Task asks him to take his time, go slowly, and create as long and as detailed a story as he can.

APPENDIX C

ANXIETY SCALE: SELF-EVALUATION QUESTIONNAIRE

Purpose. An anxiety scale was administered to the respondents in order to determine how anxiety, as measured directly from such a scale, would compare with anxiety as measured indirectly from the Tell-A-Story Technique.

Methodology. The Self-Evaluation Questionnaire developed by Spielberg, Gorsuch, and Lushene was chosen for use as the anxiety scale in this study because it provides scores for both the "state" (X1) and the "trait" (X2) anxiety of the respondent. "State" anxiety refers to one's current level of anxiety which may be affected by the anxiety introduced when asked to perform as a research subject. "Trait" anxiety refers to one's characteristic level of anxiety, which presumably is independent of any anxiety-inducing factors in a current situation. The anxiety scale was administered to the respondents upon completion of the Tell-A-Story Technique. Respondents were asked to read the instructions and complete the questionnaire. They were assured that our only interest in obtaining this information was for purposes of data comparison and not an effort to make evaluations of them as individuals. All of the 36 respondents who were requested to complete this task did so.

Results. A subjective impression was expressed by the psychologists who conducted the individual interviews during the Tell-A-Story phase. They were of the opinion that the anxiety scale was not valid for respondents whom they felt to be "high deniers" (that is, people who are not conscious of some or all of their feelings). A few respondents who subjectively appeared to be very anxious, and whose stories had a number of anxiety themes, nonetheless scored very low on the Self-Evaluation Questionnaire. This lack of correlation between the trait anxiety scale and other measures was confirmed when the data were analyzed.

RELATIONSHIP BETWEEN SCORES ON ANXIETY SCALE AND CATEGORIES FROM THE TELL-A-STORY TECHNIQUE

Score on Trait Anxiety Scale:*	Categories from Tell-A-Story Technique	
	No. of negative emotional responses	No. of anxiety responses
First Quartile (X2 scores of 21-28) N=9	22	12
Second Quartile (X2 scores of 29-32) N=9	41	12
Third Quartile (X2 scores of 34-37) N=9	31	12
Fourth Quartile (X2 scores of 38-51) N=9	36	10

* Raw scores on the anxiety scale were used rather than standardized scores, since standardized scores were not available for a normal population.

As shown in the table, the respondents were divided into quartiles using the levels of trait anxiety from the Self-Evaluaiton Questionnaire. There was no variation in the number of anxiety responses when compared with questionnaire trait anxiety scores. Similarly, the number of negative emotional responses was unrelated to trait anxiety scale scores. These results seem to provide confirmation of the subjective impressions of the interviewers that the respondents who appeared anxious did not always have high scores on the anxiety scale. This is an example of the issues which were raised in Section 3.1 concerning validation of the Tell-A-Story Technique. When a new technique does not correlate

well with results from an existing technique, it may mean that the new technique is not valid. However, it could also mean that disagreement between the two techniques occurred because the new technique is a better measure of the variable under study than the existing technique. It is also possible that the two techniques may be measuring different apsects of anxiety, since anxiety is a complex feeling which could include a number of components.

APPENDIX D

ADDITIONAL ANALYSES PERFORMED ON
DATA FROM THE TELL-A-STORY TECHNIQUE

Relationship between Total Emotionality and Specific Emotional Responses.

One issue raised concerning questionnaire surveys is whether willingness to report emotional feelings in general affects responses on questions about specific emotions such as fear of aircraft crashing.

The Tell-A-Story Technique provides a way to look at this issue, since one can determine whether the people who had much emotional content in their stories more often expressed specific negative emotions to aircraft than did people who had little emotional content in their stories.

RELATIONSHIP BETWEEN TOTAL EMOTIONALITY AND
FEAR/ANXIETY OF AIRCRAFT RESPONSES

Number of Total Emotional Responses	Number of Respondents	Number of These Respondents With 1 or More Fear Responses	Percentage of These Respondents With 1 or More Fear Responses
Respondents with 6 or less emotional responses	17	1	1%
Respondents with 7 to 9 emotional responses	15	8	53%
Respondents with 10 or more emotional responses	7	3	42%

As shown in the table on the preceeding page, respondents who had very little emotional content in their stories, a Total Emotionality score of 6 or less, rarely had themes of fear of aircraft in their stories (1 percent); while half of the respondents who had Total Emotionality scores greater than 6 also had fear of aircraft themes in their stories. Thus, there did seem to be some relationship between willingness to report emotion and the reporting of fear of aircraft. However, the group of respondents with the most emotional responses (10 or more) did not have the greatest percentage of fear responses. It could be that the people who were reluctant to express any emotional feelings at all were also reluctant to express any aircraft-related fears, but among people who were more willing to express feelings, there might not be a direct relationship between the total amount of emotion expressed and the amount of aircraft-related fear responses which occurred. These hypotheses must be tested in a larger study before conclusions can be made.

RELATIONSHIP BETWEEN TOTAL EMOTIONALITY AND ANGER/ANNOYANCE OF AIRCRAFT

Number of Total Emotional Responses	Number of Respondents	Number of These Respondents with 1 or More Anger Responses	Percentage of These Respondents with 1 or More Anger Responses
Respondents with 6 or less emotional responses	17	7	41
Respondents with 7 to 9 emotional responses	15	7	46
Respondents with 10 or more emotional responses	7	4	57

Unlike the case with fear responses, there did not seem to be much relationship between total emotionality and reporting of anger or annoyance of aircraft. As can be seen from the above table, the percentage

of respondents with anger responses increased as Total Emotionality scores increased but the differences were not large. Half of respondents with Total Emotionality scores of more than 6 and 41 percent of respondents with Total Emotionality scores of 6 or less had anger/annoynace of aircraft responses.

RELATIONSHIP BETWEEN EXPRESSING FEAR OF AIRCRAFT AND ANGER OF AIRCRAFT IN STORIES

	Number of Respondents	Percentage of Total Respondents of that Type
Respondents with Fear of Aircraft Responses (But NOT Anger of Aircraft)	6	46% of Fear Respondents
Respondents with Anger of Aircraft Responses (But NOT Fear of Aircraft)	11	61% of Anger Respondents
Respondents with BOTH Fear of Aircraft and Anger of Aircraft Responses	7	53% of Fear Respondents 38% of Anger Respondents

To determine whether the same people usually had both fear and anger responses in their stories, the data presented in the above table were tabulated. Of respondents with fear of aircraft responses, more than half (53 percent) also had anger/annoyance of aircraft responses. Of respondents with anger/annoyance of aircraft responses, a little more than a third (38 percent) also had fear of aircraft responses. There was a larger group of respondents who expressed only anger (61 percent) than expressed only fear (46 percent).

AVERAGE NUMBER OF EMOTIONAL RESPONSES PER RESPONDENT BY RESPONDENT CATEGORY

Category	Average No. of Positive Emotional Responses per Respondent	Average No. of Negative Emotional Responses per Respondent	Average No. of Total Emotional Responses per Respondent
Now Near Airport (N=17)	3.94	3.82	7.76
Past Near Airport (N=10)	3.10	4.10	7.20
Never Near Airport (N=13)	2.84	2.76	5.61
Overall Sample (N=40)	3.37	3.60	6.92

Average number of emotional responses per respondent was also calculated. In the sample as a whole, respondents had an average of almost 7 emotional responses each in their stories. These responses were about equally divided between positive and negative emotional feelings. Respondents who had at some time in their lives lived near airports (Present Near Airport, Past Near Airport) averaged over 7 responses each in their stories while respondents who had never lived near airports had on the average almost 2 fewer emotional responses per story. It is interesting that the series of aircraft-related pictures presented in the Tell-A-Story Technique did not elicit as much emotional response in people who had never lived near airports as they did with people who had.

Projection of Self Into Pictures.

To determine how many respondents were aware that they were using their own experiences in their stories, the category, Projection of Self Into Pictures, was created. This category provided a tally of the number of times a person used phrases such as "me," "I," "myself," in his stories.

NUMBER AND PERCENTAGE OF RESPONDENTS WHO PROJECTED SELF INTO PICTURES, BY SEX

Respondents:	Male (N=12)		Female (N=28)		Total (N=40)	
	#	%	#	%	#	%
Projected Self Into Picture 1 or More Times	3	25	13	46	16	40

The above table provides data on the numbers and percentages of respondents who used phrases such as "I" and "me" one or more times in their stories. It can be seen that 4 out of every 10 respondents indicated that they were using themselves and their experiences in their responses. There was a noticeable sex difference, with almost half the women and only a quarter of the men using these phrases.

Interpretation of Ambiguity in Stimulus Pictures.

Pictures A-7 and B-2 were drawn by our artist in response to the instructions that he draw a person buying a ticket at a transportation station, without making it specific as to the type of transportation station.

INTERPRETATION OF AMBIGUOUS SURROUNDINGS IN PICTURES A-7/B-2

	RESPONSES					
Picture Interpreted As A:	Male (N=12)		Female (N=28)		Total (N=40)	
	#	%	#	%	#	%
Airport	5	41	14	50	19	47
Train or Bus Station	3	25	6	21	9	22
Non-transportation Response	2	16	8	28	10	25

About half of the respondents interpreted the picture as being an airport. Almost one-fourth of respondents saw the picture as a train or bus station and one-fourth did not see the picture as a transportation terminal at all. Some of the responses were very idiosyncratic and seemed to show that the person's own needs and personality caused him to interpret the picture in a rather unique way. For example, one respondent saw the picture as a courtroom trial scene; another as a burglar robbing a housewife.

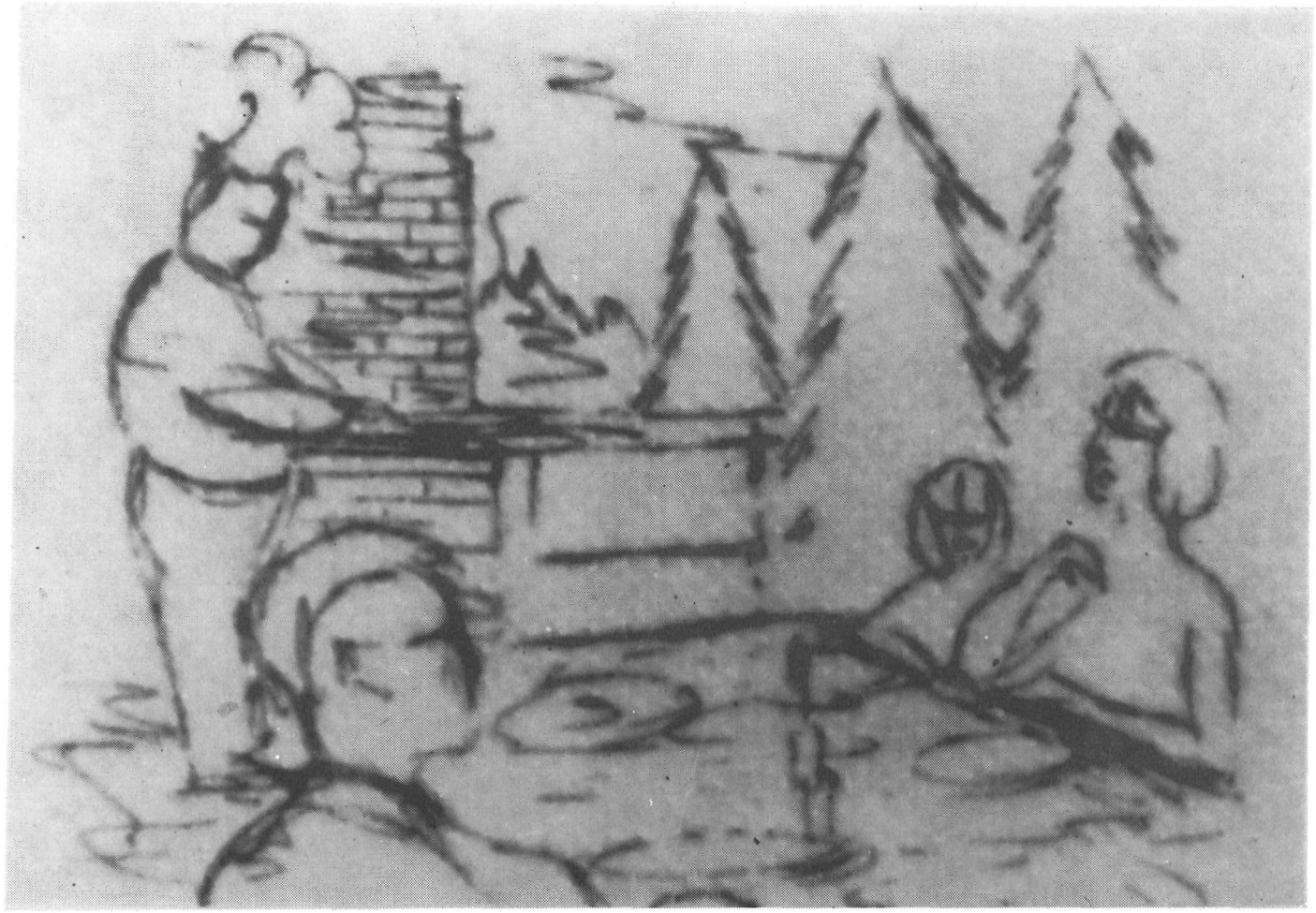
SEX DIFFERENCES IN RESPONSES TO VARIOUS CATEGORIES

Category	No. of Responses	% of Total Responses of that Category	% of Males in Sample Giving This Response	No. of Responses	% of Total Responses of that Category	% of Females in Sample Giving this Response
Plane as polluter (N=6)	0	0	0	6	100	21
Adaptation response (N=6)	3	50	25	3	50	10
Fear of Aircraft (N=13)	4	30	33	9	70	32
Plane as transportation (N=26)	7	26	58	19	73	67
Anger of aircraft (N=16)	4	25	33	12	75	42
Aircraft noise disturbs sleep (N=24)	0	0	0	4	100	14
Aircraft noise affects concentration (N=4)	1	25	8	3	75	10
Positive emotional response (N=39)	11	28	91	28	71	100
Negative emotional response (N=38)	12	31	100	26	68	92
Fear/Anxiety (N=30)	8	26	66	22	70	78
Anger/Annoyance (N=19)	6	31	50	13	68	46

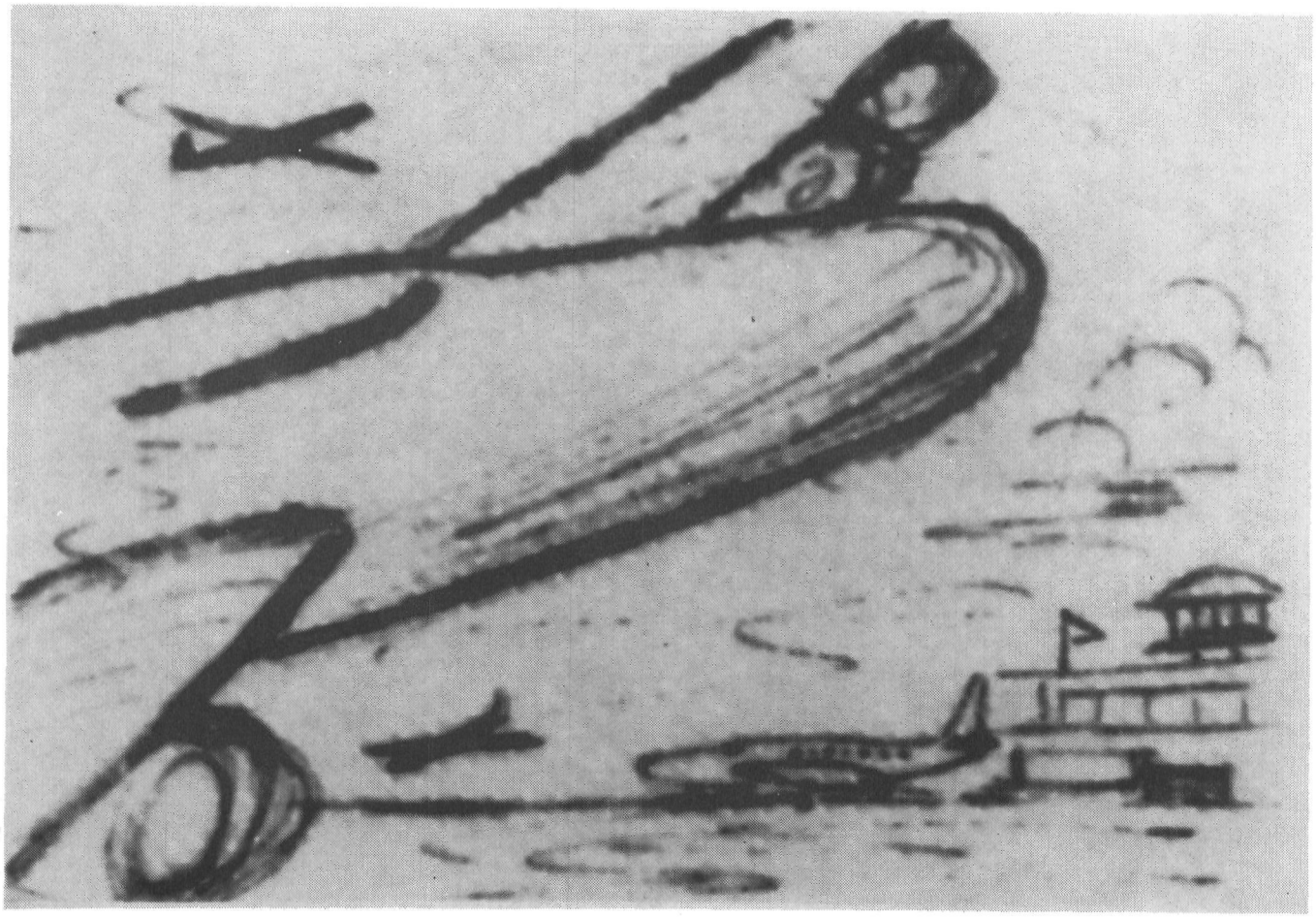
Sex differences were computed for various categories. The reader is reminded in interpreting this data that there were more females than males in the sample. For most categories there were not major differences in response between males and females.

APPENDIX E

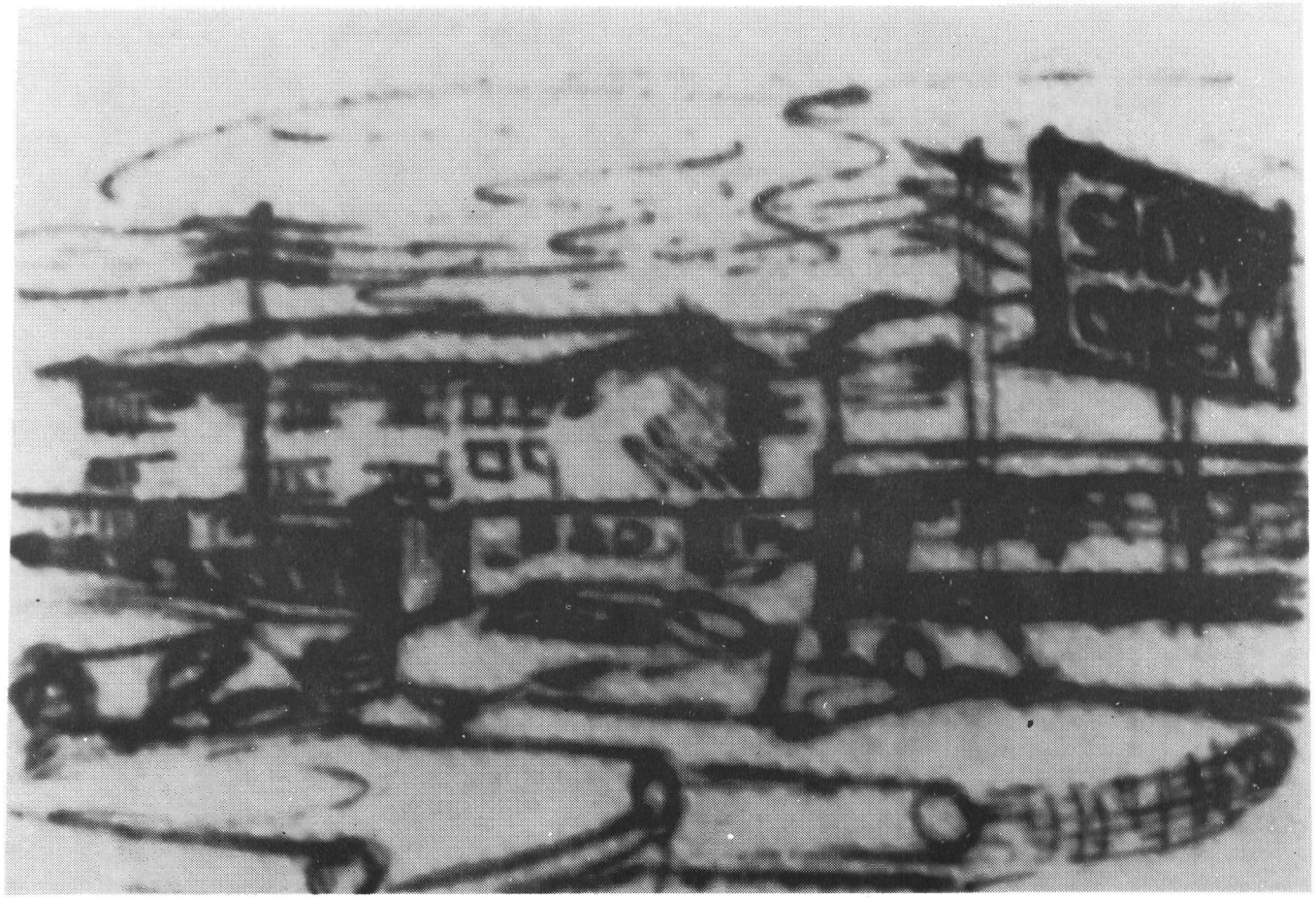
STIMULUS PICTURES USED FOR THE TELL-A-STORY TECHNIQUE



A1 An outdoor scene of several people having a picnic.



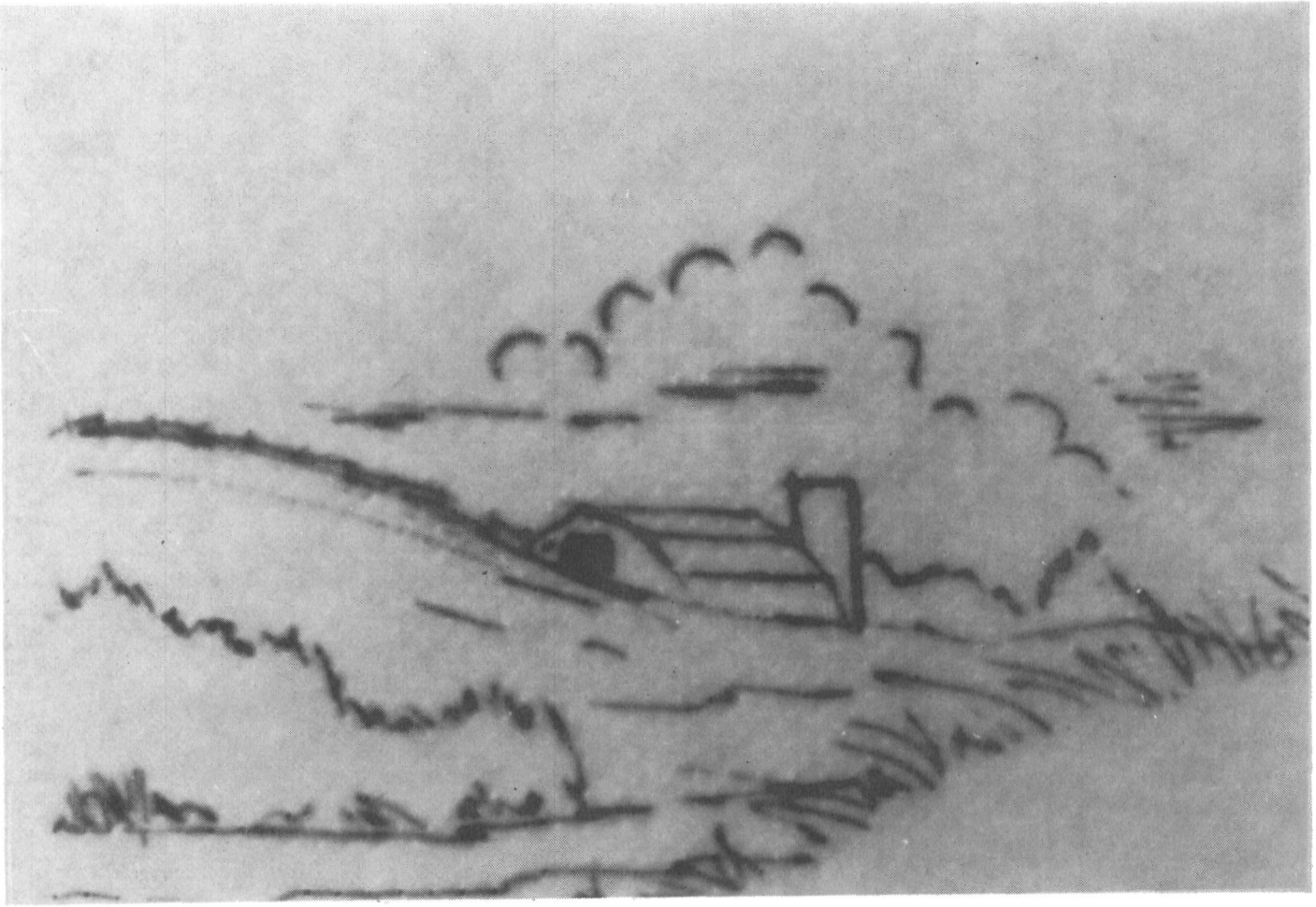
A2 A busy airport scene with planes taking off and landing.



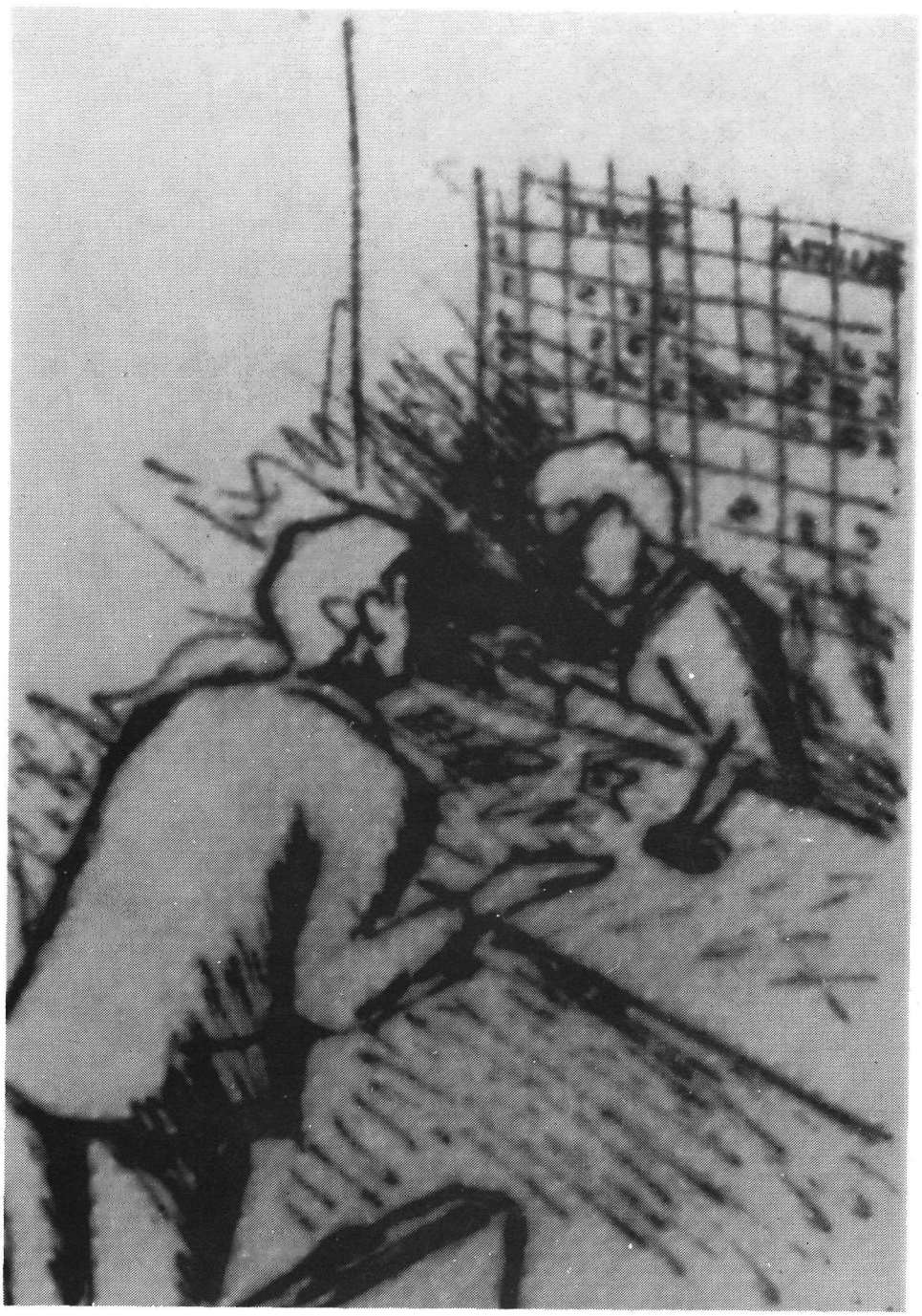
A3 A congested traffic scene with a railroad train and a shopping center in the background.

A4 A blurred, indistinct face which could be viewed in a number of ways as being happy, sad, evil, malicious, etc.

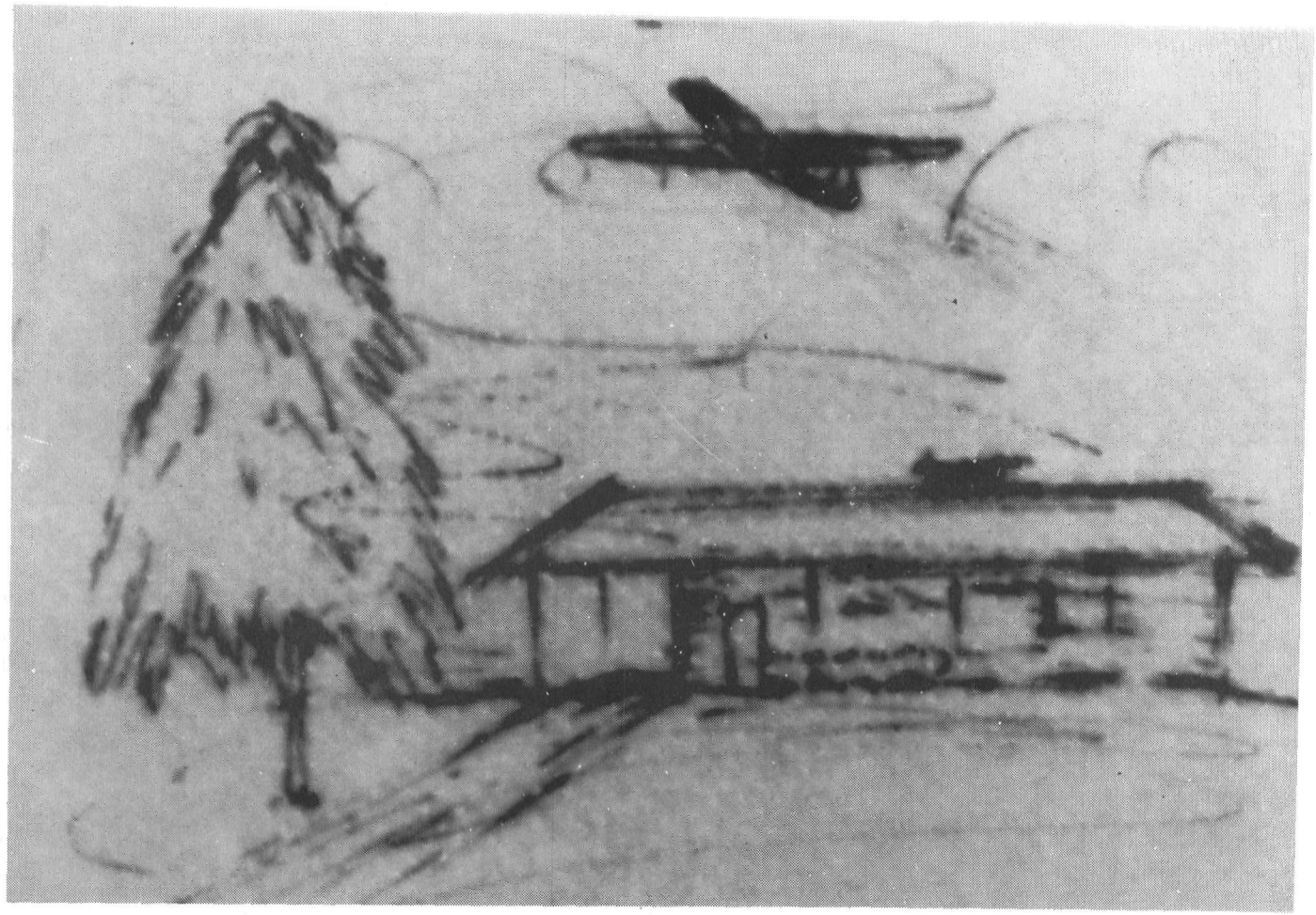
A5 Two people talking over a fence (could be interpreted as a back yard or an airport) with a plane overhead in the background.



A6 A peaceful rural scene.

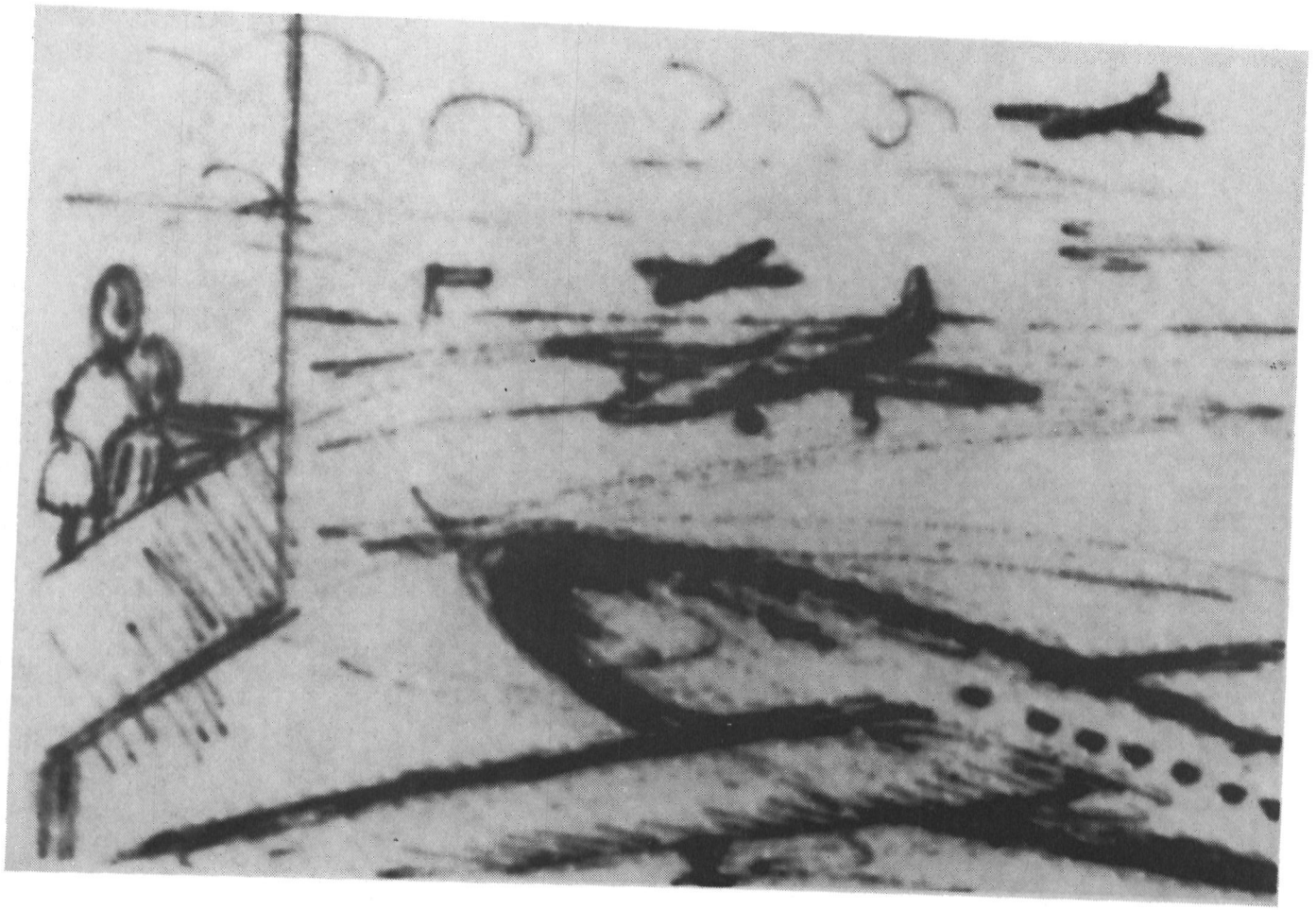


A7 A person buying a ticket at a ticket counter (could be interpreted as an airport or a bus or train station).



A8 A picture of a home with a large plane flying directly overhead.

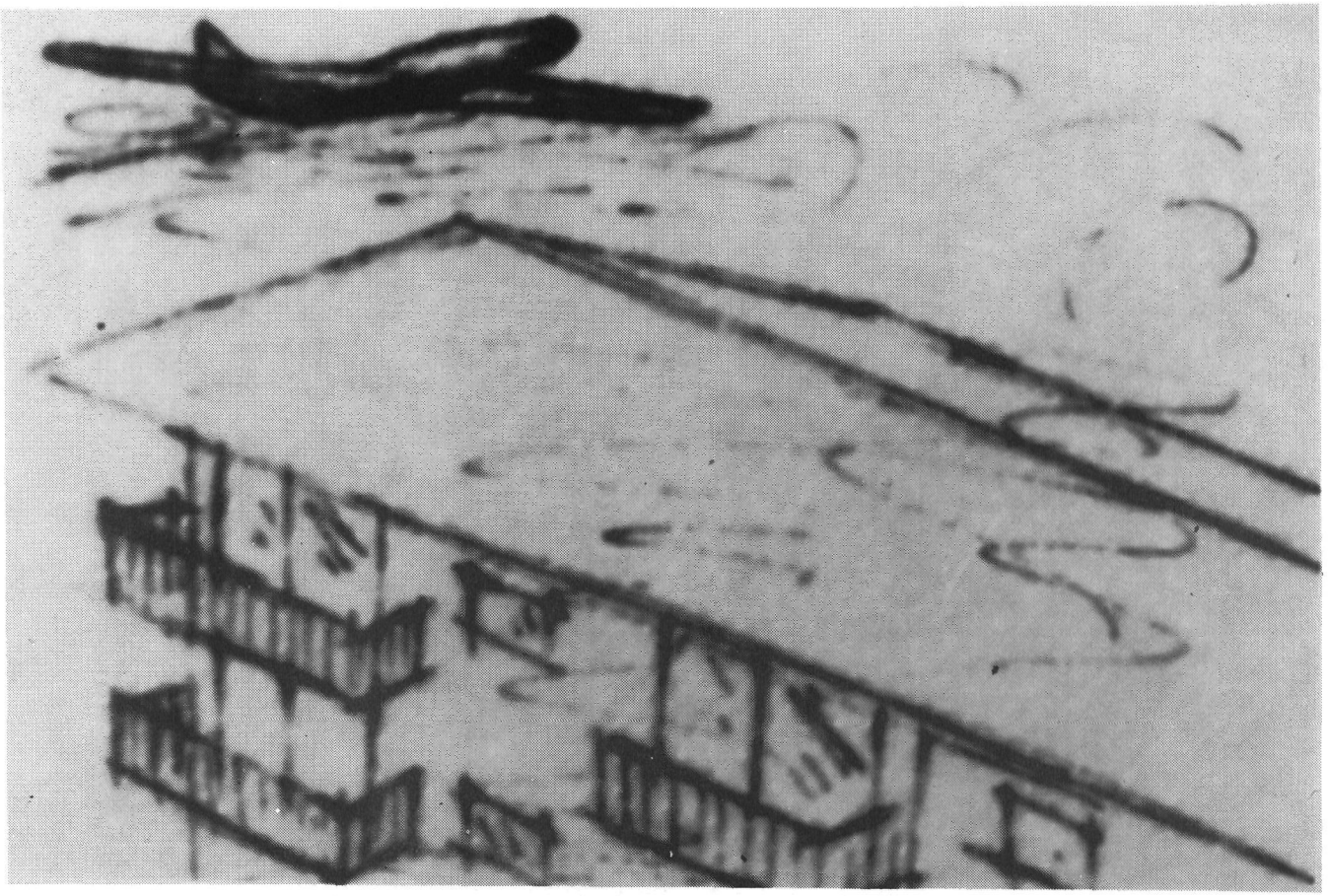
Ay A person sitting at a desk appearing to be doing paperwork.



B1 A busy airport scene with planes taking off and landing.

B2 A person buying a ticket at a ticket counter (could be interpreted as an airport or a bus or train station).

B3 Two people talking over a fence (could be interpreted as a back yard or an airport) with a plane overhead in the background.

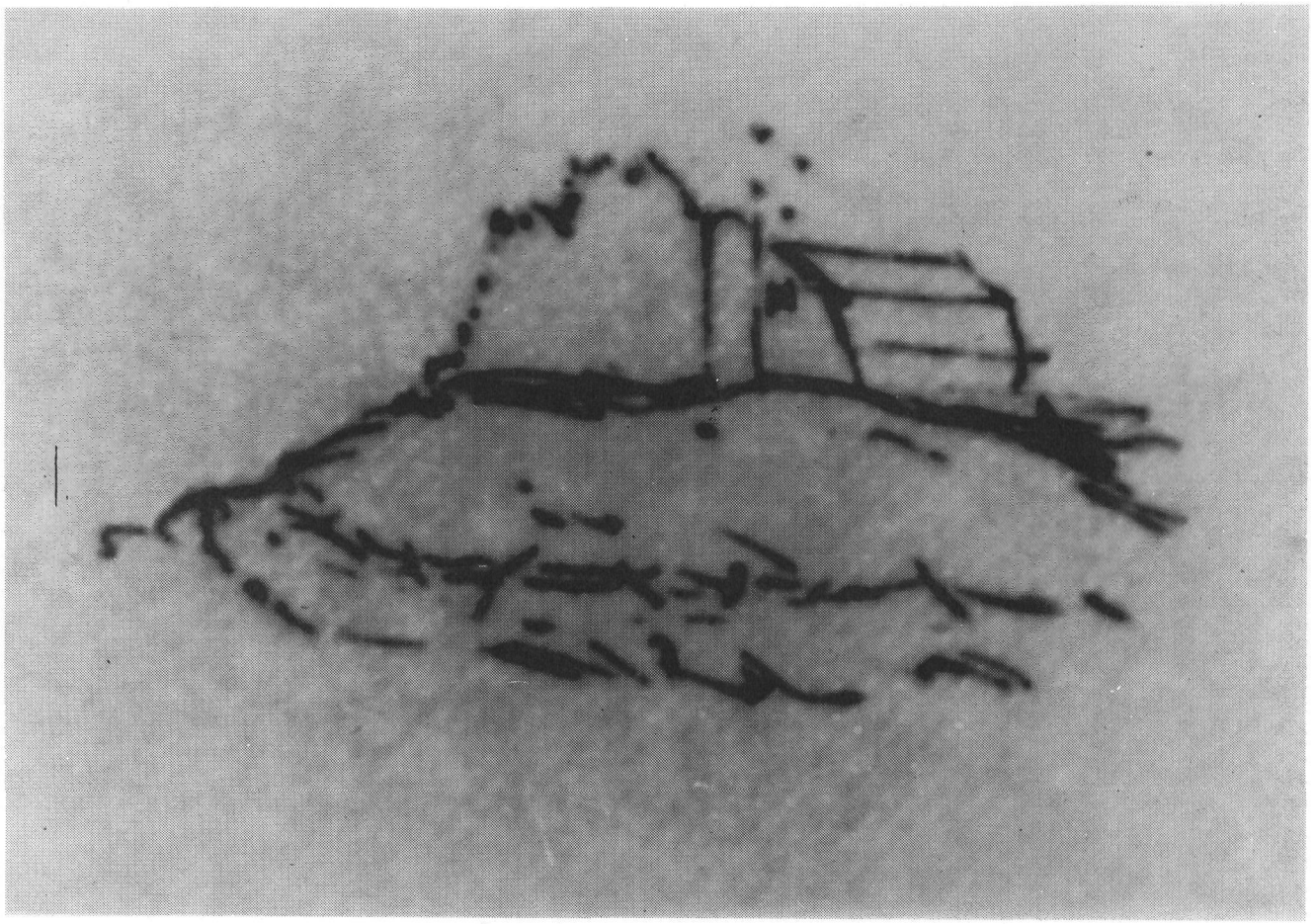


B4 Picture of a home (apartment) with a large plane flying directly overhead.

B5 **A person sitting at a desk appearing to be doing paperwork.**

B6 A blurred, indistinct face which could be viewed in a number of ways as being happy, sad, evil, malicious, etc.

B7 A man at a barbecue grill.



B8 A peaceful rural scene.

APPENDIX F

MATERIALS USED FOR WORD ASSOCIATION TASK

Name _____

INSTRUCTIONS: Please think about the word CHAIR and write down all of the words you think of in response to this term. Please come back to the word CHAIR for each of your associations, rather than associating to other words you may think of. You will have 90 seconds for this exercise.

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

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CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

CHAIR _____

Name _____

INSTRUCTIONS: Please think about the word SCARY and write down all of the words you think of in response to this term. Please come back to the word SCARY for each of your associations, rather than associating to other words you may think of. You will have 90 seconds for this exercise.

SCARY_____	SCARY_____
SCARY_____	SCARY_____
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SCARY_____	SCARY_____
SCARY_____	SCARY_____
SCARY_____	SCARY_____
SCARY_____	SCARY_____

Name ______________________________

INSTRUCTIONS: Please think about the word NOISY and write down all of the words you think of in response to this term. Please come back to the word NOISY for each of your associations, rather than associating to other words you may think of. You will have 90 seconds for this exercise.

NOISY ______________________________	NOISY ______________________________
NOISY ______________________________	NOISY ______________________________
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NOISY ______________________________	NOISY ______________________________

APPENDIX G

SAMPLE OF STORIES ELICITED FROM RESPONDENTS USING THE TELL-A-STORY TECHNIQUE

Note To Reader

These stories have been transcribed exactly as they were told by respondents in the individual interviews. Typists were instructed not to correct grammar or make other changes, but to type verbatim the transcript of the story as it was recorded on the tape recordings made of the stories. When the typist was unable to understand words on the tape recordings, these omissions have been indicated by dotted lines(...). Expletives have been left in the stories when they were used by respondents, since these words indicate the intensity of the feelings of some of the respondents who participated in this study.

At the top of each of the following pages, the code numbers of the pictures (which are presented in Appendix E) and the topics illustrated by the pictures (around which stories have been made) are indicated.

R = Respondent

I = Interviewer

Picture #A8

Topic: Picture of A House With a Plane Flying Directly Overhead

Interview #12

R. Again that noise. We thought we were going to be way out here in the country and again that noise. This damn airport. Why oh why did they have to build it out here? Well, dear, you know that we're out here in the country.

Interview #18

R. Ok, Joe and Mary live in home. They bought this home about 18 or 20 years ago. At the time it was a quiet, residential area. There were quite a few, there was a lot of trees left around, like the wooded part was left there. Since this time, progress has come into the scene and they have cleared away a lot of the land an um, built more homes and um, the couple aren't exactly happy about this. Also, an airport has been put in near by and the airplanes are in flight patterns seem to be right over their home which is very annoying. The noise in addition to the pollution problem. I think they are very annoyed by this but um, they do like their home even though the area is not quite what is used to be when they first bought it and they never had this idea when they bought the home that the area that was left wooded would be built upon and they never dreamed that an airport would be close to their home. That the airplanes would actually be flying right above them and um, very close range since they have to land and take off. Um, they are very seriously considering selling this home and moving to another area. The problem seems to be they cannot find a home that they like in the area they like and the price they can afford. So they will continue to look for a home that they care for in an area that they care for, preferably the country, probably, or another residential area that is quieter um, and until the time that they can find what they need and what they can afford they will just stay here and try to um, put up with the aggravation of the airplanes.

Interview #22

R. It's a modern house in a modern world. Perhaps it's vacant. The people in the airplane are flying overhead. Each with their own hopes and dreams of their coming destination.

I. How do you think the people in the house feel?

R. It's probably vacant. It's a new house.

A8(2)

Picture of A House With A Plane Flying Directly Overhead cont.

Interview #28

R. Well, this is a school right here. They're sitting you know, this is.... This looks like a boring class of course. And this teacher's in there, you know, 20-26 students or whatever. And the plane flies over and they all have to stop talking and she's real _____* because she's right in the middle of explaining some important English lesson or something and the kids are giggling you know, and that's you know, these are really obnoxious kids. Actually that looks like a carport. It's probably a house.

Interview #30

R. Well, the man's in the plane going over his house. He's left now. And he's probably looking down at his house, wondering what his family is doing. They're probably wondering if that's his plane going over them and they're probably having breakfast wondering if that's daddy's plane. Talking about that and he's probably in the plane looking down at his home and wondering, picturing his family eating their breakfast and probably wondering if he's in the plane.

Interview #33

R. This is a story, a Christmas story. And the house in the nearby suburbs occupied by Mr. and Mrs. Brown and their daughter Susan and two young sons, Ricky and John. Well, they decided 1 year that they're going to put light on the big fir tree and front yard. So about 2 weeks before Christmas they got their latterns out, put them up against the tree. Get out all the strings of old lights that they had and to add to them two new ones. They run their cord out from the house up to the old tree. String up all these beautiful colored lights for Christmas. They planned to start 2 evenings before Christmas, caroling just behing the manger scene in their front yard. And what do you think happens just before Christmas? The night before Christmas that's, they gat a huge snowfall. Making it just perfect for the whole thing. And snow is even predicted for the following evening, which will give them a beautiful white Christmas. And they set up the manger scene with the Christ Child. Only one thing spoiled the evening. They were constantly interrupted by the sound of airplanes going over from the nearby airport. So for the first night that they put on their night performance in front of their house, they didn't know what to do.

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*Langley Editorial Branch deletion.

Picture #A7

Topic: Picture of a Person Purchasing A Ticket At a Transportation Station

Interview #12

R. Ok, Jack Johnson finally arrived at the counter. He couldn't believe it. He made it at last. It meant a lot that this trip going to another part of the country, probably having to move his whole family. Picking up and taking off after a long settled period. But it was something that he had to do and he was finally here. He took a deep breath and he said, "I'd like a ticket please."

Interview #28

R. Oh, well this is a, this looks like a train station. And this guy is watching for, his daughter is coming. See he's separated. No, he's divorced. And his daughter lives in California with her mother. He's sitting and he's waiting for her to come in and you know, he didn't really want her to, but you know, but he thinks he's obligated to have her for six weeks out of the year, you know. And he's sitting there and the guy says, "Well, you know this little old lady that," and he's getting madder, and madder and he's saying, ____ _____ that _____* train," you know. And he's waiting for his daughter to come in and that's it.

I. What about the guy behind the counter?

R. Well, he's just, you know, kind of going - Oh, well; these things do happen. Trains do come late. You know, it's not my fault. You can go complain to the train driver. I don't know.

Interview #29

R. Well, this guy is standing at a counter and he's trying, he's traveling. Again he's.... He's actually at the bus station because the planes are on strike and the air controllers are on strike and so no planes leave. He's actually at the bus station. He's trying to get a bus to get to his destination. And because everybody else is trying to get to the bus station, there's no seats on any of the buses and he's arguing with the clerk behind the counter about how desparately he needs to get to his destination. And there's no seats and the poor fellow is not going to make it to his appointments on time.

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*Langley Editorial Branch deletions.

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