



SHARE SESSION REPORT

61	B546	HOW TO MAKE THE SUPPORT CENTER WORK FOR YOU	122
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Text of presentation is attached.

HOW TO MAKE THE IBM SUPPORT CENTER WORK FOR YOU!

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Session #B546, SHARE 61

ABSTRACT

Most initial software problem resolution takes place through the Support Center, which is composed of people and computer systems in many locations around the country. This presentation, by a Level 1 PSR, will attempt to provide a thread through the labyrinth. I will describe the process of resolving your problems, what resources are available, how to get to them and who has responsibility for what system components. A sample APAR (Authorized Problem Analysis Report) will be explained.

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03/B/TLT/1

IBM SUPPORT CENTER

Good afternoon, and once again welcome to SHARE. My name is Peggy Sykes. I am a Program Support Representative from the Tampa Support Center, where I assist customers with problem resolution via the telephone.

I will be discussing the different aspects of the IBM Support Structure and the method of operation within each of these areas. The agenda consists of a support structure overview which focuses on the implementations of the center, what resources are available and how customers can better utilize these resources.

Refer to Figure 1

The Support Center concept was put into effect as a test in February of 1978. This was a result of increased complexity of teleprocessing networks and its applications. Because of the wide usage of teleprocessing networks IBM addressed the problem of increasing system availability, and came up with the idea of remote support.

Our test included 314 customers, consisting of DOS, MVS and VS1 users which lasted one year. During this time 2000 problems were addressed and our statistics revealed 65% were resolved by Level 1 without the involvement of any other segment within our support structure. We accomplished down time minimization for customers by providing an 800 number which provides access to our centralized service.

The technical reps are trained on all the System Control Programs (SCPs) and Program Products (PPs) we support. You dial an 800 number and receive PSR assistance almost instantly as opposed to our previous method of arranging a convenient time with your local PSR. Customers also have better flexibility in scheduling because we are available 24 hours a day. You are able to schedule maintenance, installation of new products and testing procedures during off hours or weekends when system availability is not as crucial.

Figure 1 SUPPORT CENTER CONCEPT

REASONS FOR REMOTE SUPPORT

- COMPLEX SYSTEM NETWORK
- MINIMIZE DOWN TIME
- FLEXIBILITY IN SCHEDULING SERVICE

Refer to Figure 2

The Support Center is comprised of a multitude of information, technical skill levels and administrative services. Listed are the benefits and the services provided. You are encouraged to use these resources. Throughout the presentation I will expand on each of these areas to ensure that you will be able to make the Support Center work for you!

Refer to Figure 3

The possible avenues a call can take are indicated here. Customer initiates the call to Level 1. If the problem is a re-discovery it will be resolved by the Level 1 PSR with no further interface from the other groups. However, if it is a new problem or one that can not be resolved by Level 1 we will pass the call to Level 2. Unlike Level 1, who are the system specialists supporting a variety of products, Level 2 are component specialists with expertise in one particular area. At any time Level 1 and Level 2 are able to dispatch a PSR to go to the customers site if necessary.

So you can see that we have not eliminated the field PSR, but made available an expedited support service in addition to your local help.

There is also a change team, sometimes referred to as Level 3, for each Level 2 location. They specialize in correcting coding errors in the Developers logic for their applicable component areas.

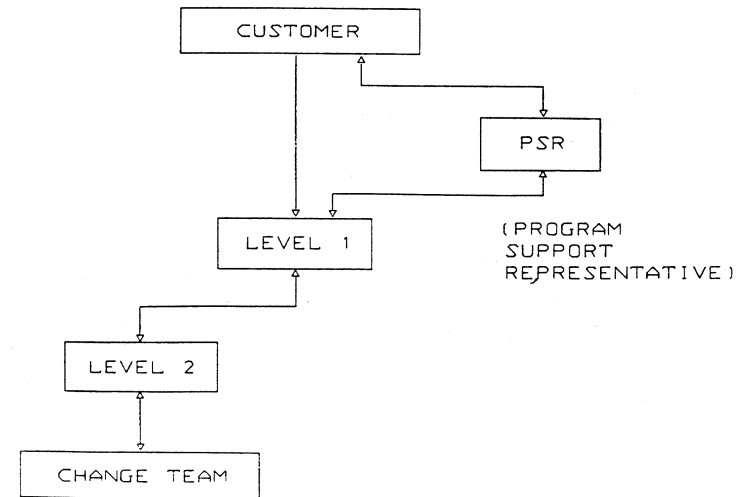
226

Figure 2! SUPPORT CENTER CONCEPT

BENEFITS

- PROBLEM SOURCE IDENTIFICATION ASSISTANCE
- PROMPT AND DIRECT RESOLUTION OF SOFTWARE PROBLEMS AND QUESTIONS
- DIRECT ACCESS TO MULTIPLE LEVELS OF SUPPORT
- NEW OFFERINGS IN LOCAL PROGRAM SUPPORT
- BETTER OVERALL SYSTEM AVAILABILITY
- PREVENTIVE SERVICE INFORMATION
- OPEN PROBLEM STATUS INFORMATION
- 24 HOUR ASSISTANCE

Figure 3 THE SUPPORT STRUCTURE



Refer to Figure 4

When you encounter a problem, the first step should be problem analysis. Determine what type failure you have. This is called problem determination, referred to as PD. Is it hardware or software? The customer can be assisted by the Customer Engineer in making this determination. The CE at all times has access to a PSR. If the problem is diagnosed as hardware, the CE will pursue its resolution. If it is software, further problem source identification is necessary to determine the failing module and source of the problem. PSI is the customers responsibility and if assistance is required, the Support Center has PSI queues for each SCP we support.

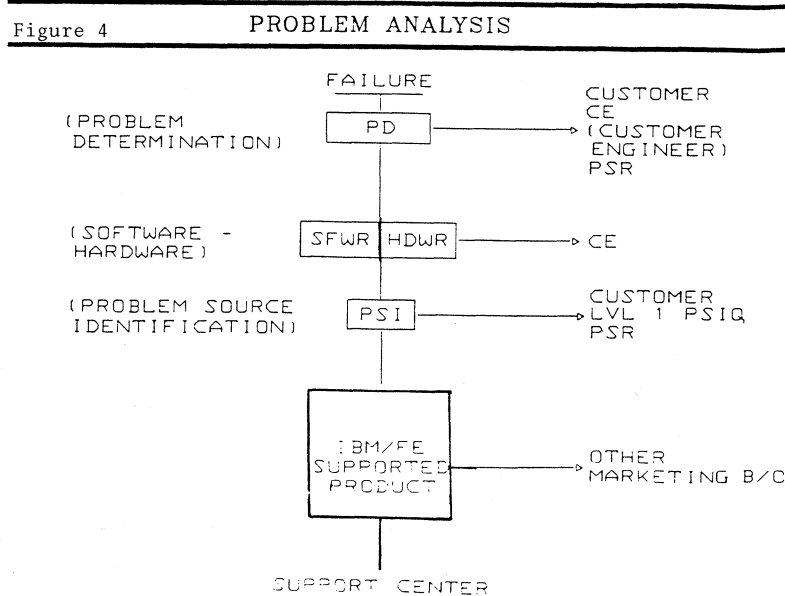
To access this queue, when calling the Support Center, inform the Customer Service Coordinator (CSC) that you are uncertain of the failing component and would like the applicable PSI queue. For example VMPSI queue, MVSPSI queue, VS1PSI queue, etc.... These queues are managed by Senior PSRs who are technically capable in assisting you to find the source of the problem or directing you in what additional documentation must be obtained to make this determination. The local PSR is also available for PSI assistance for problems that can not be isolated over the telephone.

There is also a manual called Programming System General Information (G229-2228-24) referred to as the PSGIM. It may be ordered through your Marketing Representative. It is intended for System Programmers or others who solve program problems at IBM customer accounts. It contains information about the IBM Support Center, what it is and how to use it, general information to aid in solving IBM program problems, and documentation and materials required to submit an APAR. This manual will also assist you with problem determination and problem source identification guidelines.

If the problem is not in one of the products handled by the Support Center we will refer you to the applicable product marketing representative. An example is ADRS. This is a Business Graphic feature supported by marketing. The Support Center is not staffed, nor do we have the required documentation to support this product. We also do not provide sysgen guidance, directions on how to set up JCL and product operation questions.

In instances when you are uncertain of provisions offered by the Support Center, call in and ask for the Control desk. It is staffed by technical PSRs who will direct you to the correct resources. Products supported by the Support Center are listed in the PSGIM.

227

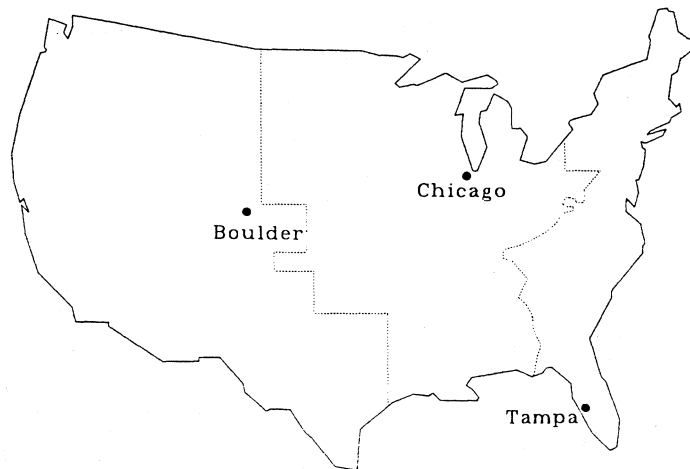


Refer to Figure 5

We have three (3) Level 1 locations to serve our customers. The Tampa Center supports customers within our eastern regions, the Chicago Center handles the midwestern regions, and as of April 1, 1983, the new Boulder Support Center supports the western regions.

The support structure consists of Level 1 locations, Level 2 groups, change teams, and local PSR. A commitment is made to meet the goal of quality service to every customer every time.

Figure 5 LEVEL 1



GOAL: QUALITY SERVICE TO EVERY CUSTOMER EVERY TIME.

Refer to Figure 6

Our three (3) level one locations enable us to balance our workload and provide us with back-up capabilities. We are available for service 24 hours a day, 7 days a week, including all holidays.

The Tampa Level 1 location handles prime shift for the east coast, and second and third shifts for the entire country. Our Level 2 centers work prime shift hours only, with the exception of priority 1 problems. Our second and third shift personnel have developed an increased expertise in problem solving which may enable them to provide a resolution that may normally be provided by Level 2. A lower call volume enables them to get more indepth in a problem.

The Chicago Center rotates working holidays with the Boulder Center for prime shift only. We also have a Hardware Support Center for CE's and Data Link Library (DLL) connections which are housed in Chicago.

Information Access (Info Access), which extends the capabilities of Info/Management and INFO/MVS by providing teleprocessing access to the IBM Customer Software Support Facility (CSSF) data base is maintained and supported through the Boulder Center.

Figure 6 LEVEL 1

- 3 LOCATIONS
 - BALANCE WORKLOAD
 - BACKUP CAPABILITIES
- TAMPA
 - 2ND - 3RD SHIFT
 - OFFSHIFT EXPERIENCE
- CHICAGO
 - HOLIDAYS
 - DATA LINK LIBRARY
- BOULDER
 - HOLIDAYS
 - INFO ACCESS

Refer to Figure 7

Our entire support structure uses an internal data base known as RETAIN. This stands for Remote Technical Assistance Information Network. There are two RETAIN systems, the primary system located in Tampa and the back-up system housed in Boulder.

We run on twin 3033's and all information is instantly mirrored between the Tampa and Boulder systems. If the Tampa system goes down, at the flip of a switch we can run off the Boulder system. Rarely will both systems go down at the same time. If this situation ever occurs we will work on priority one calls, which are problems causing a critical impact to your environment. Other customers will be advised of an approximated system down time.

RETAIN contains a vast amount of information and files. There are 4 files that Level 1 and Level 2 basically use. Software Search Facility contains all APARs which are Authorized Program Analysis Reports. APARs contain a description of the software and hardware configuration, a synopsis of the problem symptoms, and is accompanied by supporting documentation. If available, a source fix or superzap is included in an APAR as a corrective fix.

Figure 7

LEVEL 1

ORGANIZATION

```
*RETAIN SYSTEM
  *2 LOCATIONS
    BOULDER/TAMPA
    TWIN 3033 MP'S
  *4 FILES
    SSF
    PMS
    CUSTOMER PROFILE
    PSP

*TELEPHONE SYSTEM
  *CUSTOM DESIGNED
    HOLD TIME MONITOR
```

Also stored in SSF are records of Program Temporary Fixes, referred to as PTFs. PTFs are complete module replacements that incorporate either one or more APAR fixes.

Once PTF's are closed and ready for shipment, a Programming Update Tape (PUT) is built by Programming Service Support (PSS). The PUT tape will contain PTFs and their related information, such as, job streams, installation aids and special documentation. The Program Information Department (PID) will then ship customized PUT tapes according to products each customer is licensed for.

The Problem Management System is also widely used. Within this file we create problem records and track all calls that come into the center. Since it is a searchable file, we can also find hits on user errors or problems that may not have required an APAR or PTF fix.

The customer profile contains information about each customer account we service, IBM representatives, mailing addresses, phone numbers and CPU data. The customer profile is used mainly to verify customers mailing addresses when sending out install information. We will talk about how you can update this file later in the presentation.

The last most widely used file is PSP, Preventive Service Planning. It contains all install and preventive service information that becomes available after a product has been released. For example, System Control Program (SCP) and Program Product (PP) exclude lists that document problems that are discovered after the product has been released. This information can be obtained by calling the Support Center and requesting install documentation by the applicable (FMID) Function Modification Identifier or tape number. We will mail these BUCKETS (no one knows what this stands for, other than a collection of information) to you in hardcopy format.

VM370 customers can request PSP files of the current releases, to be mailed in hardcopy form or on tape. The tape will contain two files. The first file is a copy of the documentation, the same information, you would receive if requesting the hard copy. The second file is Control Program (CP) APARs in machine readable format. The actual source fixes are contained in the APARs.

Earlier I mentioned how our telephone system provides us with back-up capabilities. We are able to transparently reroute calls anywhere in the country. Our phone system was designed for Support Centers usage by the telephone company. All Level 1 Support Centers have sufficient telephone lines to handle our call volume. Therefore you should never receive a busy signal. If you encounter a problem with reaching the Support Center, contact your local branch office.

We are very sensitive to the amount of time a customer remains on hold. The call comes into the Communications Center and is placed on the appropriate extension until a technical rep becomes available. There are call boxes located throughout the center and any time a customer has been on hold beyond five minutes, the system is designed to alarm that call. This is accomplished by a flashing light on the call box, and also an alarm bit being turned on in the RETAIN system. Our average hold time is approximately 2 minutes, this varies depending on the time of day. Generally, the majority of our calls come in around 10 o'clock in the morning and 2 o'clock in the afternoon. The telephone system is also equipped to reroute calls between our three Level 1 locations.

To give you an example of our back-up capabilities, a few months ago the Chicago Center lost its 800 customer number. We were able to reroute all calls to the Tampa Center and for 24 hours we serviced the entire country.

Refer to Figure 8

The Tampa location is comprised of PSRs with an average of ten years IBM service and a three-year average of PSR experience.

In addition to base training, which is approximately three months, education continues with an average of one month of training, per person, per year. Level 1 PSRs also gain technical skills by attending internships, temporary assignments to Level 2 locations and informal seminars given at the Level 1 locations.

To enhance our communication abilities, management provides Communication Technique seminars to all Support Center personnel. This produces conversation proficiency and courtesy, which are essential when conversing via the telephone.

All Level 1 locations have extensive libraries containing documentation for everything we support. Module information in microfiche form and manuals are accessible in hard copy format. We are on an automatic shipping list from PID, our Program Information Department, allowing us to receive all documentation and updates. This allows us to keep current. The libraries are maintained and used daily by the PSRs.

230

Figure 8

LEVEL 1

ORGANIZATION

• EDUCATION

- BASIC TRAINING
- 6-8 WEEKS FOLLOW ON
- APPROXIMATELY 1 MONTH/PERSON/YEAR
- ON GOING INFORMAL SEMINARS

• DOCUMENTATION

- ALL LEVELS OF MANUALS
- MICROFICHE FOR ALL PRODUCTS

Refer to Figure 9

Level 1 is the first and most important point of contact. This cannot be emphasized enough because it is our responsibility to analyze the problem and find any rediscoveries if possible. Each of the PSR's at Level 1 are system specialists on a select group of products and work with these products everyday. This, of course, breeds proficiency and the PSR is able to maintain a constant awareness of what is happening with those products. He or she is familiar with the most significant problems at any given level of the component.

We service customers, PSRs, CEs, SEs; anyone with an access code which is also the customer number.

At Level 1 we will extract as much information as possible and formulate a search argument to search the data base files for known problems.

Level 1 also provides preventive and corrective service information taken from the PSP files.

Figure 9

LEVEL 1

SYSTEM SPECIALIST

- FIRST POINT OF CONTACT FOR SOFTWARE PROBLEMS
- SERVICE CUSTOMER/PSR CALLS AND ASSIST IN PSI
- FORMULATE SEARCH ARGUMENTS AND SEARCH SSF DATA BASE, SEARCH LIBRARY AND PROBLEM MANAGEMENT FOR KNOWN PROBLEMS
- PROVIDE SERVICE INFORMATION PREVENTIVE, CORRECTIVE

Refer to Figure 10

Level 1 works in real time mode. When you call in, your call will be handled by the first available technical rep. No call back is required. We can do one of four things; resolve the problem, which is our main objective; pass the call to Level 2 if it is a new problem or one that can not be resolved by Level 1; dispatch a PSR if onsite assistance is required; or request additional documentation if needed.

Figure 10

LEVEL 1

METHOD OF OPERATION

REAL TIME MODE

RESOLUTION

ADDITIONAL DOC

LEVEL 2

PSR

Refer to Figure 11

Each location has an administration staff. The Customer Service Coordinators, referred to as CSCs offload a considerable amount of the PSRs work, leaving them more time to assist in technical problems.

The Status queue is staffed by reps from our administrative group. Customers can bypass Level 1 PSRs and go straight to the status group to obtain problem status information, to re-queue to Level 2 with additional information, change the priority of a problem, or to close a problem.

The Branch Office Notification Desk (BOND) is used to alert the local branch office of priority one problems or any unique situations that may arise within the accounts they are responsible for.

The administration group is also responsible for printing and mail preparation of preventive service information. They dispatch PSRs and make temporary customer profile updates. If a customer is installing a new CPU, has changed addresses or phone numbers, the CSC rep working the PROFILE queue can change or add this information which will stay in the system 28 days. Any permanent changes are made by the local branch office.

232

Figure 11

ADMINISTRATION

- COMMUNICATION CENTER
- CUSTOMER SERVICE COORDINATOR
- STATUS
- BRANCH OFFICE NOTIFICATION DESK - BOND
- PRINT/MAIL
- PROGRAM SUPPORT REPRESENTATIVE - PSR
- PROFILE

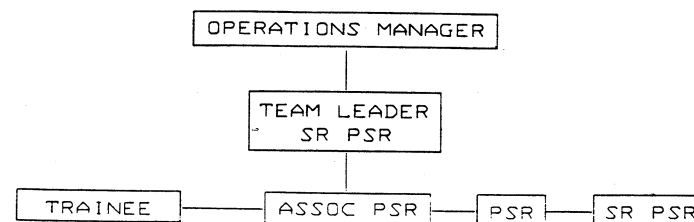
Refer to Figure 12

I have mentioned the term queue throughout the presentation. All Level 1 locations are subdivided into queue areas to separate us among the different products. For example, the VM queue, Data Management queue, PSI queue, etc... There is one Operations Manager per queue and one or two team leaders depending on how large the queue is. Team leaders are responsible for monitoring the calls to make sure they are taken in a timely manner and scheduling education and vacation time. They also provide call assistance, when needed, to PSRs in their queue area.

The figure below shows the career path of PSRs that make up a queue. There are four skill levels of a PSR: Trainee, Associate, PSR and Senior PSR. The trainee, upon return from Base School will work in a controlled environment where call simulated training is provided. This additional training will last from six to eight weeks. The Associate PSR is gaining experience and technical skills to handle most calls. The PSR is the journeyman position with the ability to handle all calls. Senior PSRs will take or supervise PSI calls, provide technical advice to less experienced PSRs when required, in addition to normal call taking.

Figure 12

LEVEL 1 QUEUE



Refer to Figure 13

There are seven Level 2 locations within the United States. Listed below are the product components each location is responsible for.

The Development group, for the applicable product, is also located within the vicinity of each Level 2 location. Generally, there is a change team (Level 3) group resident at each Level 2 site. The contiguity of the groups allows accessibility interfacing purposes when necessary.

Although not shown on Figure 13, the Change Team for DOS/VSE products are located in Amsterdam, Boeblingen and Hursley.

Refer to Figure 14

Our Level 2 groups are the component experts. Unlike Level 1 queues, that are subdivided into product areas, Level 2 will assign individual programmers and change team personnel to a component level. Working with these single elements everyday allows the responsible person to know his or her code thoroughly. Therefore, indepth problem analysis can be performed if your problem reaches Level 2. They are also experienced in trouble-shooting dumps and analyzing traces.

If a new problem is discovered in the Developers logic of the system code, Level 2 is responsible for APAR preparation and its submission. They will work with the customer in gathering the necessary documentation and pursue a resolution. If you ever encounter a new problem, the procedures for APAR submission are documented in the PSGIM mentioned earlier in this presentation. After the APAR has been submitted, Level 2 will give the customer a corrective fix or circumvention until a PTF becomes available. Level 2 is also responsible for the RETAIN Data Base, its accuracy and updates.

233

Figure 13

LEVEL 2

- 7 LOCATIONS
 - PROXIMITY TO DEVELOPER
- KINGSTON
 - 8100
- ENDICOTT
 - VSE / VM-CMS
- POUGHKEEPSIE
 - MVS / VM-CP
- SAN JOSE
 - LANGUAGES / DATA MANAGEMENT
 - DATA BASE / JES
- GAITHERSBURG
 - SERVICE AIDS
- RALEIGH
 - TP
- DALLAS
 - BTS / ADF

Figure 14

LEVEL 2

COMPONENT SPECIALIST

- PERFORMS IN-DEPTH PROBLEM DIAGNOSIS
- ASSIST IN APAR PREPARATION AND SUBMISSION
- PROVIDES CORRECTIVE SERVICE TO THE CUSTOMER AND THE RETAIN DATA BASE

Refer to Figure 15

Due to Level 2's methods of operation, they work in call back mode. Level 1 requeues the problem management record, which contains a problem description of the conversation between the Level 1 PSR and the customer, to Level 2 who will in turn call the customer back. At this point Level 2 owns the problem until its resolution. They can do one of three things, search the data base for a rediscovery, APAR a new problem, request additional information or dispatch a PSR for on site assistance with the customer's concurrence.

Figure 15

LEVEL 2

METHOD OF OPERATION

CALL BACK MODE

RESOLUTION APAR

DOCUMENTATION

ONSITE PSR

Refer to Figure 16

A time criteria has been established to permit expedited service when a call to the customer is required by Level 2.

Most important, priority of a problem is determined by the customer. You will know better than anyone else what impact a system problem is having on your organization. All incoming calls to the Support Center automatically default to priority 3. It is up to the customer to raise or lower the priority.

Priority 1 indicates your system is down or the problem is causing a critical impact to your system. Turnaround time objective is one hour, no more than 2 hours.

Priority 2 is when you are severely restricted due to the nature of the problem. The objective is to return these calls within four to six hours.

Priority 3 states that you are able to circumvent the problem and its impact is limited. You will generally receive a call within twenty-four hours or by the close of the next business day.

Priority 4 lets us know no call back is required and only information is being passed on, such as to close a problem or to let us know a problem has been resolved.

Level 2 locations work prime shift only, with the exception of priority 1 problems. Upon these occurrences a Level 2 rep will be contacted to work on the problem. Therefore, the customer and his resources must also be available. All Level 2 locations are available during prime shift regardless of the customer's time zone.

Figure 16

LEVEL 2

RESPONSE TIME CRITERIA

- PRIORITY 1
- 1 HOUR
- PRIORITY 2
- 4 HOUR
- PRIORITY 3
- BY CLOSE OF NEXT BUSINESS DAY
- PRIORITY 4
- INFORMATION ONLY
- DETERMINED BY CUSTOMER

Refer to Figure 17

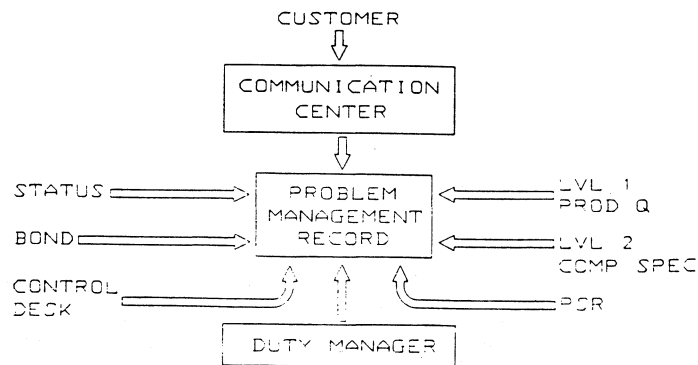
I have now covered every possible avenue a call can take. Figure 17 summarizes what has previously been discussed.

In addition to technical assistance, if procedural questions, concerns or complaints arise we have a control desk, which was addressed earlier, available to service you. If escalation is required, every Level 1 and Level 2 location has a duty manager available twenty-four hours a day.

235

Figure 17

CALL FLOW



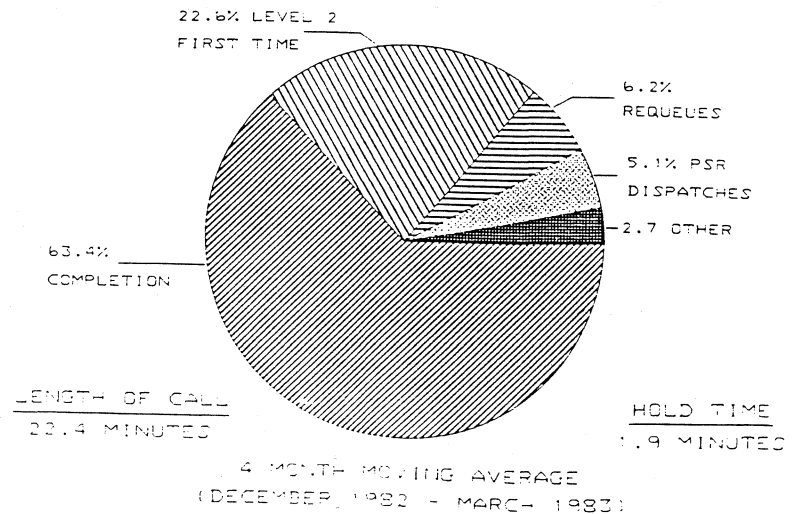
Refer to Figure 18

Statistical information is tracked for all incoming calls to the Support Center. From this data we have extracted percentages of call distribution between Level 1 and Level 2.

The statistics below show the action taken on calls that came into the Support Center during December 1982 through March 1983.

During these four months, Level 1 average completion rate was 63.4%. Level 1 completed the call without the assistance of any other segment within our support structure. Calls passed to Level 2 for the first time were 22.6%. Requeues, which are calls that have been to Level 2 and are going back because the customer was instructed to gather more documentation, or further problem analysis was necessary. The average number of requeues are 6.2%. On site assistance, which required a PSR dispatch occurred 5.1%. Another 2.7% of the calls were for miscellaneous data. For example, a call that may have been a product handled by the Support Center.

Figure 18 CALL DISTRIBUTION LEVEL 1 (PRIME SHIFT)



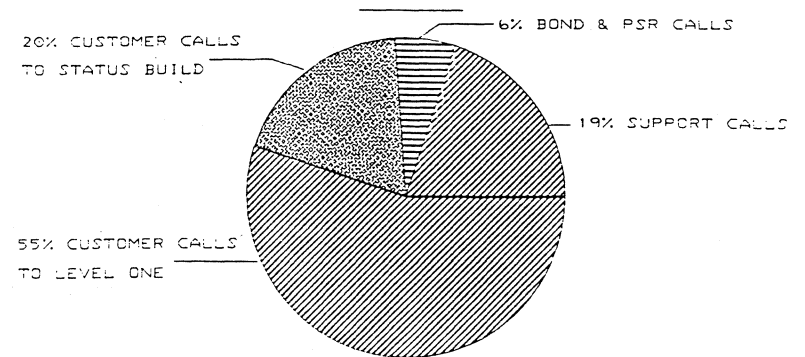
The average time a PSR stays on the phone with a customer is approximately 22.4 minutes. This will vary depending on the nature of the call. If a call is for install information it may take five minutes, where a PSI call may take one hour. The time we stay on the phone with a customer is at the PSR discretion. The average time a customer stayed on hold for the next available PSR was 1.9 minutes.

Refer to Figure 19

The following statistics are also for the Tampa Support Center, one week and prime shift only. Level 1 PSRs handled 55% of the calls. Another 19% were housekeeping calls created by Tampa's APAR/PTF Quality Reps. They are responsible for alerting Level 2 of any errors found in the RETAIN Data Base. Level 2 will then update or correct the problem.

Branch office notifications by the BOND queue and PSR dispatches totaled 6% of the call volume. This is a job handled by our Administrative staff, along with the final 20% status build calls. Therefore, you can see how our Administration group assists to lessens the PSRs' workload. This percentage includes closing calls, requeues to Level 2, status updates and changing call priorities.

Figure 19 AVERAGE NUMBER OF CALLS CREATED PER WEEK



4 MONTH MOVING AVERAGE
(DECEMBER 1982 - MARCH 1983)



Refer to Firure 20

Our Marketing Division consists of System Engineers (SE) and Marketing Representatives. The Marketing Representative is responsible for sales and the SE assists customers in installation planning and procedures.

PSRs and CEs work in the Field Engineering Division. PSRs provide software support and the CE is responsible for hardware performance.

In addition we have added the IBM Support Centers. This is an expedited software support service comprised of over 3,000 people across the country with a commitment to provide quality service to each of IBM's many customers. The development of remote support has proved to be an outstanding achievement for IBM. I sincerely hope the information I have provided will assist you in making the Support Center work for you!

SHARE SESSION REPORT

61	B549	Ok, VM is Installed, Now What?	150
<u>SHARE NO.</u>	<u>SESSION NO.</u>	<u>SESSION TITLE</u>	<u>ATTENDANCE</u>
CMS		Larry Graziiose	BAM
<u>PROJECT</u>		<u>SESSION CHAIRMAN</u>	<u>INST. CODE</u>
Bank of America, 1455 Market St., San Francisco, CA 94103		(415) 622-1881	
<u>SESSION CHAIRMAN'S COMPANY, ADDRESS, AND PHONE NUMBER</u>			

OK, VM IS INSTALLED,

NOW WHAT?

Tips and Techniques for Running a VM System, and Changing CP's Page, Spool, T-Disk, and Free Storage Areas

August 23, 1983

SHARE Session B549

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VM New Users Project

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237

Figure 20

