The Amdahl 470V/5 system is a high-speed, general-purpose business computer designed for environments where large-scale electronic data processing capability is required. The system consists of a central processing unit, channel unit, main storage memory, operator console system and power distribution unit.

With the Amdahl 470V/5, users have access to large-scale capacity and economy, and the potential to upgrade to 470V/6-II performance when their needs dictate.

Highlights

The Amdahl 470V/5 provides Amdahl price/performance and service to data processing environments that demand large-scale capacity right now, plus the ability to upgrade processing speed if and when needs grow again.

Performance. The 470V/5 operates at approximately three times the speed of a 158-3 or about the speed of a 168-3. CPU cycle time is 32.5 nanoseconds.

Main storage. The 470V/5 is offered with 4, 6 or 8 megabytes of main storage. No penalty is incurred for unaligned operands. Data path to main storage is 8 bytes wide, with 4-way interleaving.

16K high-speed buffer. The HSB has a basic access time of 65 nanoseconds and can be pipelined. A new request to the buffer can be handled every 32.5 nanoseconds and a buffer transaction completed every 32.5 nanoseconds. The buffer can be partitioned to bypass buffer errors by reconfiguring out a buffer section.

Four instruction pipeline. An optimal four levels of instruction lookahead, with a maximum of four instructions in the pipeline, run concurrently with instruction execution, checking and storage of results.

Branching hardware. The 470V/5 incorporates a unique fast branch resolution algorithm that adds a new dimension in pipeline efficiency for branching operations.

1. Large-screen 3200 character CRT displays scan-out of all CPU latches and operator console output functions.

2. Operator's panel controls system software loading and displays status.

3. Keyboard enters console input functions.

4. 16-bit minicomputer serves as an independent console processor.

5. Direct computer-to-console interface allows the console processor to perform direct diagnostic tests on the central computer.

6. Standard channel interface between computer and console for console operation.

7. Fixed head disk drive used by console operating system.

8. Floppy disk drives load diagnostic programs.

9. Modem connects to AMDAC remote diagnostic service.

10. Floppy disk storage area.

11. CPU (Instruction and Execution units). All system logic implemented in 40 7½ square-inch Multiple Chip Carriers (MCCs).

12. Fans mounted above and below MCCs provide all necessary cooling.

13. Storage Control unit handles all memory access from the CPU and channels.

14. Main storage unit contains up to 8 megabytes in two swing-out gates for easy access and service.

15. Channel unit contains LSI portion of channel unit logic on 11 MCCs and handles logic of all I/O operations.

16. Remote Interface Logic (RIL) frame contains 8, 12 or 16 standard I/O channels (selector, block multiplexer and/or byte).

17. Cable entry unit and optional channel-to-channel adapter for loosely coupled multi-processor operation.

18. Main storage power supply.
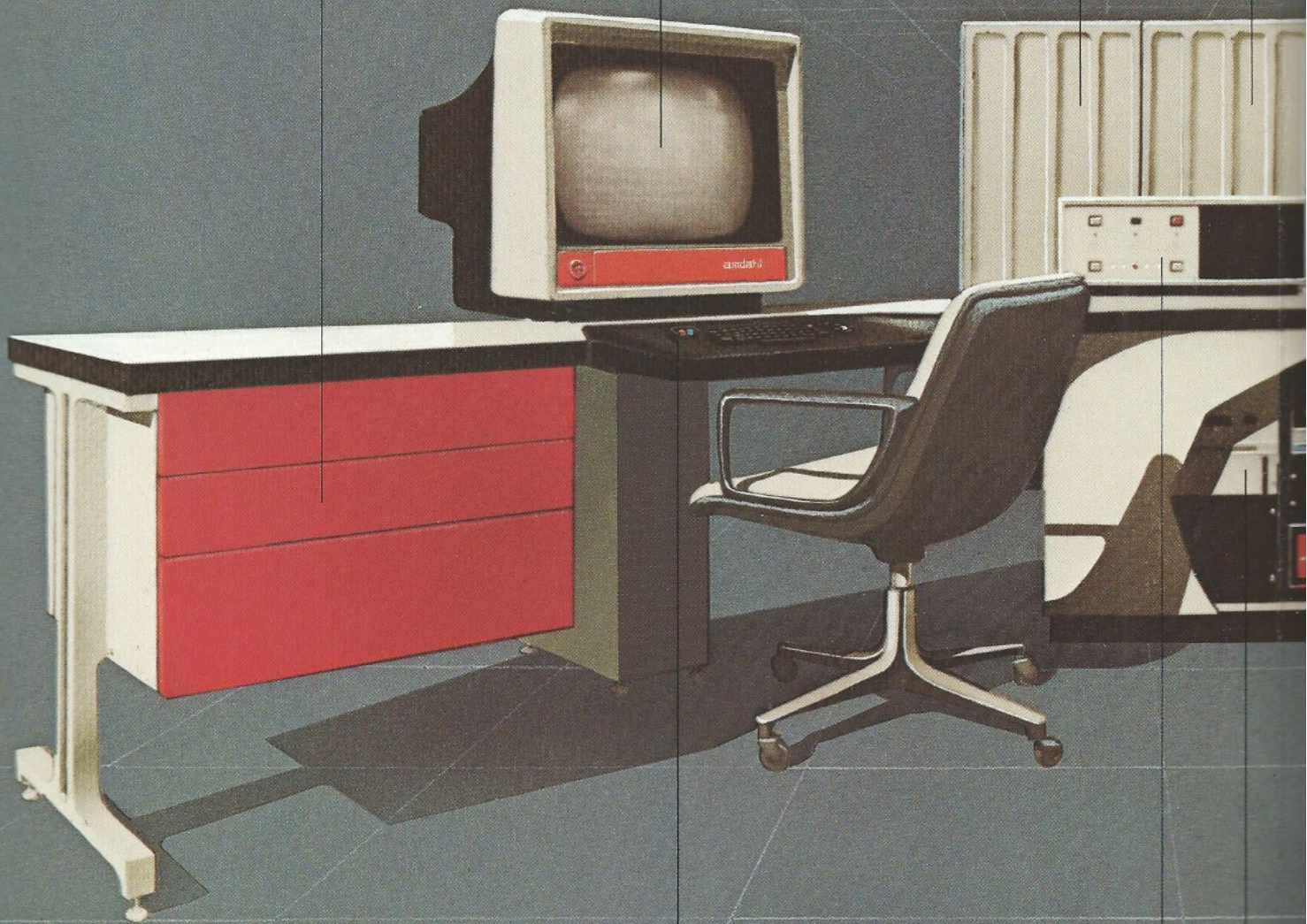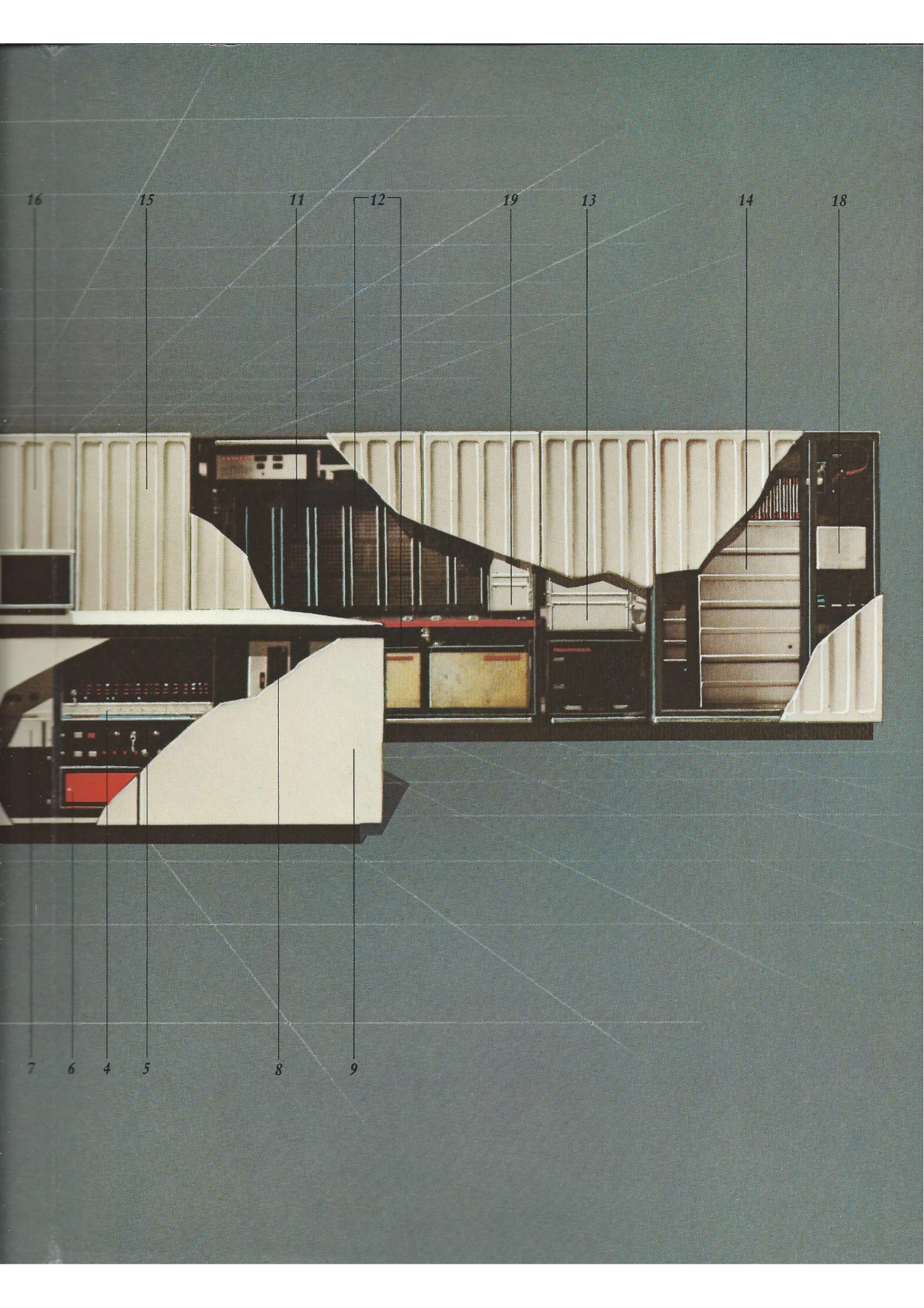
19. 16K high-speed buffer memory.

10　1　17　16

amdahl

3　2　7

16   15   11   12   19   13   14   18

7   6   4   5   8   9

Advanced virtual address translation hardware. To improve performance in a virtual operating system such as MVS or VM, the 470V/5 features advanced address translation capability. A 256 entry translation lookaside buffer (TLB) provides storage of most recently used virtual address translations. Also provided is a 32 entry segment table origin (STO) stack.

Expandable channel capacity. Eight inboard channels are standard on the 470V/5 with optional expansion to 12 or 16 channels. The 470V/5 offers full channel configuration flexibility, with each of the 16 channels configurable as a byte or block multiplexer or a selector channel, in any combination. Selector and block multiplexer channels can handle data transfer rates of 1.9 megabytes/second, and byte multiplexer channels handle 110 kilobytes/second.

Channel option features. A two-byte interface is available on all selector and block multiplexer channels. This effectively doubles the channel bandwidth for control units that support this feature. A channel-to-channel feature is also available for loosely coupled operation with another Amdahl or compatible CPU.

Systems Control Program support. Amdahl provides full programming systems support to 470V/5 customers for OS/MVT, SVS, MVS, VM/370 and VS1. Included in this support are major subsystems such as HASP, ASP, TSO, TCAM, JES2, JES3, VTAM, RSCS, CMS and IPCS. Amdahl support includes diagnostic capability for all software failures, repair of failures and distribution of all repairs and new releases.
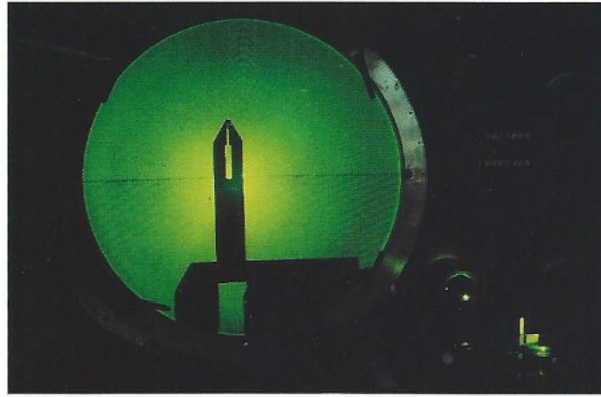
Amdahl has also assisted customers in modifications to the recovery management system for other system control programs, including TSS, ACP, MTS and VP/CSS.

Field upgrade to 470V/6-II. The 470V/5 can be upgraded when the need for additional capacity arises. This upgrade, involving a minimum of downtime and no additional physical facilities, provides approximately 50 to 60 percent more CPU processing power.