

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CARL T. MICKELSON, SCOTT B. POWELL, and CHRIS G.
HORATTAS

Appeal No. 1999-2555
Application No. 08/503,625

HEARD: January 25, 2001

Before HAIRSTON, RUGGIERO, and GROSS, Administrative Patent Judges.

GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 and 4 through 7, which are all of the claims pending in this application.

Appellants' invention relates to a flight simulator employing a replication of the hardware for the operational flight program processor and a software simulation of the remainder of the avionics simulation computer. Claim 1 is

Appeal No. 1999-2555
Application No. 08/503,625

illustrative of the claimed invention, and it reads as follows:

1. An avionics simulator for training in the use and operation of an aircraft, comprising:

an operational flight program processor for executing an Operational Flight Program of a specific avionic device on a machine instruction basis and configured of hardware substantially identical to that of said specific avionic device;

a control central processing unit;

a programmable input/output emulator;

a bus interconnecting said operational flight program processor, control central processing unit, and programmable input/output emulator, wherein said operational flight program processor issues commands to said programmable input/output emulator, which commands are read by said control central processing unit which formulates responses to such commands, which responses are passed across said bus to said operational flight program processor; and

wherein said control central processing unit and said programmable input/output emulator do not duplicate hardware of the aircraft, but are software programmable to emulate avionics devices of the aircraft.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Berner et al. (Berner)
1993

5,260,874

Nov. 09,

(filed Dec. 23, 1992)

Appeal No. 1999-2555
Application No. 08/503,625

Craig Covault, "Shuttle Creates New Astronaut Training," Aviation Week & Space Technology, (August 14, 1978), pp. 50-1 and 57-9. (Covault)

James Schefter, "Shuttle simulator tours outer space without leaving the ground," Popular Science, (August 1979), pp. 60-3 and 120. (Schefter)

Claims 1 and 4 through 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Covault and Schefter in view of Berner.

Reference is made to the Examiner's Answer (Paper No. 25, mailed May 22, 1998) for the examiner's complete reasoning in support of the rejection, and to appellants' Brief (Paper No. 24, filed January 23, 1998) for appellants' arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse the obviousness rejection of claims 1 and 4 through 7.

Claim 1 requires, in pertinent part, a control central processing unit and programmable input/output emulator which "do not duplicate hardware of the aircraft, but are software

Appeal No. 1999-2555
Application No. 08/503,625

programmable to emulate avionics devices of the aircraft." Schefter (page 120) and Covault (page 50) state that computers which are exact duplicates of the computers which will be aboard the space shuttle are used. Therefore, the CPU and programmable input/output emulator, which are parts of those computers, must be duplicates of the hardware used on the space shuttle. The examiner, however, asserts (Answer, pages 4-5) that "it was notoriously old and well known in the art that full 'prime hardware incorporation' is not necessary for a simulator, i.e., that incorporation of an operative avionic subsystems [sic] is counterproductive to the desired cost benefit of simulation."

Although we agree with the examiner that generally simulations of components are cheaper than the actual hardware, we find a lack of evidence in the record which would support the examiner's conclusion that it would have been obvious to use a software simulation within the computer for most, but not all, of the computer. In other words, in the face of the explicit teachings of Schefter and Covault to duplicate the entire computer, why would the skilled artisan have been motivated to duplicate only the operational flight

Appeal No. 1999-2555
Application No. 08/503,625

program processor and simulate other components of the computer, as recited in claim 1? The only motivation of record for doing so comes from appellants' disclosure of the invention. "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg., Inc. v. SGS Importers Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983). Accordingly, we cannot sustain the rejection of claim 1 and its dependents, claims 4 through 7.

Appeal No. 1999-2555
Application No. 08/503,625

CONCLUSION

The decision of the examiner rejecting claims 1 and 4 through 7 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
)	
ANITA PELLMAN GROSS)	
Administrative Patent Judge)	

apg/vsh

Appeal No. 1999-2555
Application No. 08/503,625

RAY L. WEBER
RENNER, KENNER, GREIVE, BOBAK,
TAYLOR AND WEBER
1610 FIRST NATIONAL TOWER
AKRON, OH 44308