

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONALD A. GRAHAM and RANDALL P. ROBERTSON

Appeal No. 95-5063
Application 08/058,612¹

HEARD: November 2, 1998

Before HAIRSTON, KRASS, and JERRY SMITH, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 8 through 15. The examiner subsequently allowed claims 8 and 9

¹ Application for patent filed May 6, 1993. According to appellants, this application is a continuation-in-part of Application 07/510,377, filed April 17, 1990, now Patent No. 5,243,339, issued September 7, 1993 which is a continuation-in-part of Application 07/203,367, filed June 7, 1988, now abandoned.

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(Answer, page 1). Accordingly, claims 10 through 15 remain before us on appeal.

The disclosed invention relates to a method of flight crew alertness monitoring for an aircraft using a flight management computer (FMC). An alarm is triggered when the FMC does not detect any flight crew actuation of any of the controls monitored by the FMC within a predetermined period of time. The flight crew will also be alerted when the position of the aircraft begins to deviate from a previously captured active route with the lateral navigation mode (LNAV) engaged, when there is a gradual thrust loss to a predetermined percentage on any engine, and when there is roll or pitch deviation in excess of a predetermined number of degrees from FMC commanded roll or pitch attitude, respectively.

Claim 10 is illustrative of the claimed invention, and it reads as follows:

10. A method of flight crew alertness monitoring for an aircraft having a Flight Management Computer (FMC) which requires no crew action other than normal flight crew activities comprising triggering an aural flight crew response alert when no flight crew actuation of any of the controls monitored by the FMC has been detected by the FMC within a predetermined time period after a silent flight crew advisory alert has been issued.

The references relied on by the examiner are:

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Stockton	4,546,353	Oct. 8, 1985
Graham et al. (Graham)	4,811,230	Mar. 7, 1989
		(filed Aug. 15, 1986)

Claims 10 and 11 stand rejected under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellants regard as the invention.

Claims 12 and 13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Graham.

Claims 14 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Graham in view of Stockton.

Reference is made to the brief and the answer for the respective positions of the appellants and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse all of the rejections.

Turning first as we must to the indefiniteness rejection, the examiner states (Answer, page 6) that:

In claim 10 it is unclear how or when "a silent flight crew advisory" is generated.

The claim specifically recites that an aural alert is responsive to

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triggering due to no crew actuation of controls, but the claim does not particularly point out how a silent alert is activated. Since the aural alert can only be given a set time after a silent alert is issued, the claim must provide indication as to how and when a silent alert is given.

The indefiniteness rejection of claims 10 and 11 is reversed because the claims are in complete accord with appellants' disclosure (specification, page 5), because there is absolutely nothing indefinite about the claiming of an "aural flight crew response alert" within a predetermined time period after a "silent flight crew advisory" has been issued, and because appellants are not required to limit the scope of claims 10 and 11 by including details as to "how or when 'a silent flight crew advisory' is generated."

Turning to the prior art rejections, Graham discloses a system that uses a FMC. The FMC in Graham has been modified so that a pilot can intervene in the preprogrammed flight management operation of the FMC. Graham refers to the modified FMC as an intervention flight management system (IFMS). The IFMS disclosed by Graham differs from prior systems in that "the IFMS allows the flight management system [FMS] to respond to preprogrammed instructions associated with

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axes unaffected by the intervention" by the pilot (column 4, lines 5 through 9).

According to the examiner (Answer, page 3), "a flight crew response alert is triggered if aircraft position is not converging with a route, the alert being a 'Not on intercept heading' message (col. 8)." Graham makes clear (column 7, line 52 through column 8, line 31) that the noted message is only generated in response to a test of an IFMS subroutine, and not an "active route" as claimed. More importantly, Graham is completely silent concerning "a predetermined time period" that the aircraft fails to converge with the route. In fact, Graham fails to mention any time periods for performing any functions in the FMC or the IFMC. Thus, the examiner's conclusions (Answer, pages 3 through 5) that "[c]hoosing to monitor the aircraft position for a predetermined time in order to decide whether an alert should have been given, . . . would have been obvious to one of ordinary skill in the art," and that "it would have been inherent that the convergence monitoring of Graham would have required a set time period between at least two points in time, . . ." are not buttressed by any evidence in the record,

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and fail to convince us of the obviousness of claims 12 and 13. The obviousness rejection of claims 12 and 13 is reversed.

The obviousness rejection of claims 14 and 15 is reversed because the aircraft engine thrust warning system disclosed by Stockton does not cure the noted shortcomings in the teachings of Graham.

DECISION

The decision of the examiner rejecting claims 10 and 11 under the second paragraph of 35 U.S.C. § 112, and claims 12 through 15 under 35 U.S.C. § 103 is reversed.

REVERSED

Kenneth W. Hairston)
Administrative Patent Judge)
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Errol A. Krass)
Administrative Patent Judge) BOARD OF PATENT
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) APPEALS AND
)
) INTERFERENCES
Jerry Smith)
Administrative Patent Judge)
)

KWH/kis

Conrad O. Gardner
THE BOEING COMPANY
Mail Stop 13-08
P.O. Box 3707
Seattle, WA 98124-2207